

# The Case of Japan

## Part I: Context

### 1. History:

The national Government decides which universities can award Ph.D. degrees after reviewing the application from universities. Most are Ph.D. degrees and in 2003, a J.D. as a professional degree was newly established. In 2017, the number of Ph.D. courses of study is 1,364 and those of J. D. are 58.

### 2. Size and Demography of Doctorate Pool:

Table 1. The Number of Awarded Ph. D. degrees

|      | Natural Science | Engineering  | Agriculture | Health       | Humanities/<br>Social Science | Others       | Total (%)      |
|------|-----------------|--------------|-------------|--------------|-------------------------------|--------------|----------------|
| 2005 | 1,633 (9.4)     | 4,195 (24.1) | 1,321 (7.6) | 6,760 (38.9) | 1,774 (10.2)                  | 1,713 (9.8)  | 17,396 (100.0) |
| 2010 | 1,534 (9.2)     | 3,693 (22.0) | 1,233 (7.4) | 6,315 (37.7) | 1,956 (11.7)                  | 2,029 (12.1) | 16,760 (100.0) |
| 2014 | 1,390 (9.3)     | 3,275 (21.8) | 912 (6.3)   | 6,181 (41.1) | 1,612 (10.7)                  | 1,654 (10.8) | 15,024 (100.0) |

Source: National Institute of Science and Technology Policy (NISTEP), MEXT (2018) *Japanese Science and Technology Indicators 2018*, [http://www.nistep.go.jp/sti\\_indicator/2018/RM274\\_table.html](http://www.nistep.go.jp/sti_indicator/2018/RM274_table.html)

The maximum awarded numbers in 2006 was 17,860 and since then, the number has decreased.

Table 2. Demography of Entrants to Doctorate Course of Study

|                  | 2005           |                      | 2010           |                      | 2015           |                      |
|------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|
|                  | Total          | Women                | Total          | Women                | Total          | Women                |
|                  | 1,7553 (100.0) | 5,146 [29.3] (100.0) | 1,6471 (100.0) | 5,233 [31.8] (100.0) | 15,283 (100.0) | 4,791 [31.3] (100.0) |
| Working Adults   | 4,709 (26.8)   | 1,320 (25.7)         | 5,349 (32.5)   | 1,742 (33.3)         | 5,872 (38.4)   | 1,944 (40.0)         |
| Foreign Students | 2,483 (14.1)   | 1,433 (27.8)         | 2,819 (17.1)   | 1,297 (24.8)         | 2,290 (15.0)   | 986 (20.6)           |

Source: MEXT (2005, 2010, 2015) *School Basic Survey*, <https://www.e-stat.go.jp/stat-search/files?page=2&toukei=00400001&tstat=000001011528>

Both the number and proportion of working adults and women have increased. Neither the number nor the proportion of foreign students has increased.

### 3. Time-to-degree and Completion of Degree:

This type of data is unfortunately unavailable. Because Japan has two ways to earn Ph.D. degrees: one is the path with at least three years of course work (30 credits) after acquiring a master's degrees and the other is the path with a dissertation only. However, we can conjecture the tendency of which areas of study provide Ph.D. degrees in a relatively shorter period of time from Table 3. This illustrates the proportion of Ph.D. students who completed coursework within three years. Those of health, the natural sciences, engineering, and agriculture are higher than

those in the humanities or social sciences.

Table 3. The proportion of students who finished course work within three years.

|      | Humanities | Social Science | Natural Science | Engineering | Agriculture | Health | Others | Total |
|------|------------|----------------|-----------------|-------------|-------------|--------|--------|-------|
| 2005 | 35.9       | 40.3           | 55.8            | 55.9        | 54.2        | 73.3   | 45.6   | 50.6  |
| 2010 | 29.1       | 33.7           | 56.0            | 46.2        | 50.9        | 64.1   | 40.0   | 43.9  |
| 2015 | 23.9       | 26.7           | 56.1            | 46.9        | 48.1        | 55.4   | 37.6   | 42.3  |

Source: MEXT (2005, 2010, 2015) *School Basic Survey*, <https://www.e-stat.go.jp/stat-search/files?page=2&toukei=00400001&tstat=000001011528>

#### 4. Purpose and Goals of Doctoral Education:

There is the *Standards for Establishment of Graduate Schools* which serves as a basic regulation for graduate schools. In Article 4 of Chapter 1, the purpose is stipulated as follows:

The purpose of doctorate courses of study is to cultivate research by doctorate students so that they may be able to conduct research in their own disciplinary field as researchers independently as well as cultivating professional doctorate students to be able to engage in highly professional jobs.

<http://elaws.e->

[gov.go.jp/search/elawsSearch/elaws\\_search/lsg0500/detail?lawId=349M50000080028&openerCode=1](http://elaws.e-gov.go.jp/search/elawsSearch/elaws_search/lsg0500/detail?lawId=349M50000080028&openerCode=1)

## **Part II: Structure of Doctoral Education**

### a. Main National Policies/Reforms Affecting Doctoral Education:

The Ministry of Education has tried to enlarge graduate schools since the 1990's and specifically focus on doctorate courses since the 2000's in order to increase competitiveness of doctorate courses in the world. As a basic structure, educational policy is decided by a policy report from the Central Council for Education based on a commission from the Minister of Education. Since the 2000's, competitive thematic funding for higher education institutions has been built.

For instance, based on a report in 2005, funding programs such as the "Global COE (Center of Excellence)" and "The Promotion of Organizational Reform of Graduate Schools" have been implemented. Furthermore, based on a report in 2011, funding programs such as "Graduate Education in the Global Society" and "Excellent Graduate Schools Programs" have been implemented.

[http://www.mext.go.jp/a\\_menu/koutou/daigakuin/index.htm](http://www.mext.go.jp/a_menu/koutou/daigakuin/index.htm)

### b. Funding:

As for an individual basis, 52% of doctorate students have no economic assistance, 25% get some scholarships equating to less than 600,000 JPY (=5,500 USD) per year, 15% get some for more than 600,000 JPY (=5,500 USD) to less than 2,400,000 JPY (=22,000 USD) and only 7.6% get more than 2,400,000 JPY (=22,000 USD) as reported in 2015. As for funding sources, the biggest proportion of doctorate students who receive a scholarship grant-base is from the Subsidies for Operating Expenses from the Government which occupy 24.5%, and the second is 5.1% from the JSPS (Japan Society for Promotion of Science). Regarding loan-based scholarship, 9.8% have get it from the JASSO (Japan Student Service Organization) and more than half of doctorate students (50.9%) do not get any financial assistance from third parties.

[http://www.mext.go.jp/a\\_menu/koutou/itaku/\\_icsFiles/afieldfile/2018/03/12/1402017.pdf](http://www.mext.go.jp/a_menu/koutou/itaku/_icsFiles/afieldfile/2018/03/12/1402017.pdf)

c. Quality Assurance/control:

As a part of a quality assurance system, all universities (including graduate schools) must receive accreditation every seven years since 2004.

As for graduate schools, quality assurance has been one of the major issues since the 1990's along with graduate school development. Recent policy statements of quality assurance in graduate education such as *Graduate Education in the Coming New Age* in 2005, *Graduate Education in Global Society* in 2011 and *Ideal Graduate Education in 2040* in 2019 have emphasized to create consistent course work in graduate schools and to confirm the quality of degrees.

d. Career paths of doctorate recipients:

The Ministry of Education has a responsibility to grasp the careers of students who have finished doctorate courses of study in a *School Basic Survey* every year.

As shown in Table 4, in 2017 only half of graduates had full time jobs and 14% of them had part time jobs. Many of the "Others" are graduates who have looked for jobs but not yet found them. It is a relatively high proportion in the field of engineering and health, while low in humanities.

Table 4. The proportion of students' career after finishing doctorate courses in 2020.

| Total            | Entering Graduate Schools etc. | Entering Employment |           | Entering Foreign Schools etc. | Temporal Jobs | Others | Unknown or the Deceased |
|------------------|--------------------------------|---------------------|-----------|-------------------------------|---------------|--------|-------------------------|
|                  |                                | Full Time           | Part Time |                               |               |        |                         |
| 100.0<br>(15658) | 1.1                            | 53.1                | 14.3      | 0.6                           | 6.0           | 18.8   | 6.3                     |

Source: MEXT (2018) *School Basic Survey*, <https://www.e-stat.go.jp/stat-search/files?page=2&toukei=00400001&tstat=000001011528>

The number of post-doctoral fellows was 1,454 in 2017. They are included in "Part Time" (722), "Temporal Jobs" (346), and "Others" (386). Most of them are in engineering and natural sciences and only twelve percent of them are in humanities and social sciences.

Among employed graduates, 22% are university faculty, 24% are researchers, and 25% are in the health services industry and are medical doctors, dentists, veterinary doctors, and pharmacists as displayed by the table in the year 2017.

Some universities have scholarships as a part of career support and establish career centers to give students advice for their careers.

### **Part III: Trends**

1. International Collaboration:

It has been a great issue for Japan to make university students perform globally since the 2000's. For instance, the Ministry of Education implemented the "Program for Leading Graduate Schools" in 2011 in order to motivate doctorate students to perform as top leaders in every field; not only academia but also government, industry, NPO and so on. Selected graduate schools created new programs of study to meet these objectives in cooperation with industry or NPO sectors.

The number of universities which conclude agreements with foreign universities and establish exchange programs, joint or double degrees, education and research hubs in foreign countries has dramatically increased.

2. Equal Opportunities:

Diversity has been one of the most important policies all over Japan. Under the Equal Employment Act, Gender Equality Law, and the Act for Eliminating Discrimination against Persons with Disabilities, we have tried to eliminate all discrimination regarding gender, disabilities, sexual orientation, nationality, and so on. Universities are the most sensitive sector regarding these issues. Most universities have established an Office of Diversity to promote diversity in all aspects of campus life.

3. Digital Transformation:

Although universities have been allowed to provide doctorate programs through distance education (e.g. online programs) since 2003, only seven universities provided their doctorate programs via distance education methods in 2018. Both faculty and students are more likely to prefer a face to face learning environment in doctoral education and training.

Universities must send dissertations to the National Diet Library based on a legal deposit. Since 2013, the National Diet Library has made them available in a digital format directly from National Diet Library's web page.

4. Most Important Aspects for Your Country:

The most vital issue in doctoral education is the shrinking university sector because of the decreasing number of young students. The number of doctoral students has decreasing since 2008 and the number of master's degree holders who enter doctorate courses has decreased. Research jobs in academia have been steadily decreasing and many posts for young academics have become fixed term jobs. The research productivity in the natural sciences and engineering fields has also declined.

In this situation, many academics are conscious about the future Japan in the knowledge economy.