

# What exactly was the strategic focus on graduate schools?

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## Notification of “reduced quotas” by MEXT

“Great potential to become either a doctor of philosophy or a Cabinet minister”

It has been long time since doctors of philosophy, who used to be a symbol of success, had a hard time finding work. With no improvements in the situation, under-enrollment in doctoral courses has become chronic in universities throughout the country. At such a desperate time, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) sent notice to 86 national universities, requesting them to review the enrollment limits for their doctoral courses. The government has been promoting “strategic focus” policies, such as the enhancement of graduate schools, since the 1990s, and has churned out Ph.D. graduates as a strategy to support a nation built on the platform of scientific and technological creativity. The notice, however, intends to urge for a change of direction. Japan might drop out from the global-scale “mega-competition of wisdom” depending on how it proceeds from here.

The notice was issued under the name of Ryu Shionoya, Minister of Education, Culture, Sports, Science and Technology on June 5, 2009. The following is an excerpt from the notice in regard to the enrollment limits for doctoral courses.

*“From the perspective of maintaining and ensuring the quality of graduate school education, efforts shall be made to review the enrollment limits and relevant organizations, while comprehensively taking into account their roles in light of corporate missions and the viewpoints of promoting functional differentiation among national universities, the under-enroll-*

*ment situation in graduate schools and the perspective of social demands for doctorate holders, and other viewpoints.”*

This can be paraphrased as, “Make efforts to upgrade quality by means of lowering the enrollment limits and developing areas of specialty, etc., as Ph.D. graduates continue to face difficulties finding work and many graduate schools share the under-enrollment problem.

## Larger quantity results in lower quality

Why was the notice issued at this particular time? Now is the time when each national university is formulating its second mid-term plan (FY2010 - FY2015) in earnest, since this year is the final year of the first mid-term plan (FY2004 - FY2009), which was formulated when corporate status was given to each national university. In the case of independent administrative agencies, their supervisory authorities order them to review their mid-term plans with no arguments accepted. In contrast, university corporations draft their mid-term plans on their own, and then the Ministry of Education, Culture, Sports, Science and Technology approves their plans, so that their autonomous spirit can be respected. Nevertheless, the Minister of Education, Culture, Sports, Science and Technology is supposed to indicate the direction for their reviews by giving notice.

The enrollment limits for graduate schools have substantially increased over the past 20 years. According to the Basic School Survey conducted by the Ministry of Education, Culture, Sports, Science and Technology, the enrollment of graduate school students (on the combined basis of national, public and private entities) stood at 69,688 in

FY1985 or the year immediately before implementation of the strategic focus. In FY2005, the number rose to 239,460, or approximately 3.5 times as many as twenty years ago. If the scope is narrowed down to doctoral courses, the enrollment increased from 21,541 to 74,909 for the same period. Meanwhile, the difficulty doctorate holders face in finding work is a serious matter. The Basic School Survey shows that the percentage of those who find regular work in the spring, after completing their doctoral courses (employment rate), has been fluctuating between 50% - 60% for the past 15 years.

What has caused Ph.D. graduates to face such difficulty in finding work? In my opinion, it derives from both the quantity and quality of Ph.D. graduates.

Firstly, let’s look at the problem of “quantity”. Each year, some 15,000 new Ph.D. graduates enter society despite there not being enough life-long employment positions for them. Sixty percent of leading companies “hardly or never” hire Ph.D. graduates, and 70% or more of the companies that responded said they “do not feel the need to hire Ph.D. graduates.” (See “Minkan Kigyou no Kenkyu Katsudou ni Kansuru Chousa Houkoku” (Survey Report on Private Companies’ Research Activities) for FY2007.) Universities also cannot take in graduates who have just completed their doctoral courses because university lectureship positions were reduced in response to the strategic focus on graduate schools in the 1990s.

Let’s move on to the problem of “quality”. As a result of the increased enrollment limits for graduate schools, many students who would not have (or could not have) previously proceeded to higher education began to join doctoral

programs. Many people argue that this trend resulted in lower levels (or lower quality) of Ph.D. graduates. I do not think this is an irrelevant opinion. From the standpoint of universities, chronic under-enrollment means reduced subsidies. Such a situation is more serious for former imperial universities, which substantially increased their enrollment limits. Accordingly, they have ended up with a compromise of quality. From the viewpoint of businesses, Ph.D. graduates who “have a narrow outlook, lack an adaptable challenging spirit and get older only to become harder to deal with” have been churned out.

### Disposable postdoctoral fellows

The position of postdoctoral fellows, who are employed for a fixed term within research budgets, used to play an important role as the employment basis for Ph.D. graduates who could not find work either in businesses or at universities. However, this also followed an unfortunate course and the worst scenario has become a reality: a Ph.D. graduate becomes a postdoctoral fellow for the meantime, as he or she cannot find work. Then the postdoctoral fellow finds himself or herself reaching his/her mid-30s, which puts regular employment at any business or research institution further out of reach due to age restrictions (the so-called “35-year-old barrier”).

In the U.S., Ph.D. graduates who have completed their doctoral course at graduate school purposely take on a postdoctoral position at another university or at a research institution for 4 - 6 years, because the position has a meaning of “knight-errantry” to become full-fledged. In Japan, however, the position has been more like an unemployment countermeasure for excess graduates, reflecting how it was introduced. Having said that, post doctoral fellows made significant contributions during the decade starting from late 1990s. This is because most research laboratories were desperate for help as competitive funds rapidly expanded during that decade. However, little consideration was given to future careers.

### Emotional dependence of Ph.D. graduates

An executive of a major manufacturer confessed, “Many businesses stay away

from Ph.D. graduates. Even more so for postdoctoral fellows who could not find work in the first place, because many people label them as “incompetent academics”. Universities accepted more students by increasing the enrollment limits for graduate schools during the 1990s, and then threw them out without guaranteeing their quality. Knowing this, businesses stayed away from Ph.D. graduates. Young students saw opportunities through rose-tinted glasses and took the leap only to go unrewarded.

Yet, I suspect that Ph.D. graduates themselves might have been emotionally rather dependent, saying to themselves: “Someday, someone will sort something out for me.” Even if official policies shaped this direction, it is the graduates themselves who decided to embark on their doctoral courses. Their grieving over the current situation is understandable, but they could have thought about converting to another career by abandoning their studies at some point during the course. According to “Posutodokutaa tou no Kyaria Sentaku ni Kansuru Bunseki (2008-nen)” (Analysis on Career Options of Postdoctoral Fellows (2008)) conducted by the National Institute of Science and Technology Policy (NISTEP), 18% of the respondents “had enough information while in graduate school” regarding career options after completion of their doctoral courses. An overwhelming majority (74% of the respondents) cited “researcher” as their answer to the question, “What kind of career would be acceptable?” In contrast, the percentage of responses citing any career other than researcher or engineer was less than 10% across the board, including science reporter, intellectual property-related career, teacher, and entrepreneur. If I were their parent, I would feel like saying, “How can you afford to be so selective?”

### Industry, government and academia should seriously reflect on their failure to act

What matters now is the future. Universities worrying about student numbers are most likely to use the quota-reduction notice as an opportunity to lower the enrollment limits for doctoral courses. If they cut back the number of Ph.D. courses, the excess Ph.D. graduate phenomenon will be resolved sooner or later. However, the reinforcement of re-

search capabilities, which was the premise of the strategic focus on graduate schools in the first place, will go by the wayside. It is true that Ph.D. graduates are an indispensable human resource to enhance international competitiveness. The degree of difficulty for Ph.D. graduates in finding work differs depending on the field of study. For instance, redundancies prevail in biology-related fields and theoretical concept-related fields, while there is a shortage rather than an excess in fields such as engineering and chemistry. Growth in the latter fields might especially turn sluggish if more students tend to refrain from going on to doctoral courses.

After all, what exactly was the strategic focus on graduate schools in the first place? Mr. Shinichi Kobayashi, Professor at University of Tsukuba who is well versed in science and technology policies, offers the warning, “They simply increase the quantity with little consideration given to what kinds of human resources need to be cultivated and in what way. Then they decrease the quantity when the expansion policy results in an excess. They lack any vision whatsoever. If all they can do is just take measures without proper planning, Japan will be reduced to the status of a third-rate country in terms of science and technology.”

Needless to say, human resources are human treasures. All people involved in the cultivation of human resources in the industry, government, and academia should seriously reflect on their ineffectiveness over the past 20 years and fundamentally review their human resource policies.

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