

## Send young people “outside”! Why international exchange is important

Kiyoshi KUROKAWA

Professor, National Graduate Institute for Policy Studies / Professor Emeritus, The University of Tokyo

### Great changes in the world

Over the last two decades, the world has undergone rapid and great changes. A unified market economy has developed since the end of the Cold War, and the world has been connected via the Internet with the advent of the World Wide Web. We have now entered a world said to be “globalized” and “flat.” As science and technology advance rapidly, the Web era has speeded up and promoted social changes. The social environment in this Web era has completely changed from that of ten or twenty years ago. Changes will be even more drastic in the last decade.

In Japan, GDP has remained stagnant, with almost no change since the collapse of the “Land Bubble” in 1990. The country has experienced the “Lost Two Decades,” and is now about to enter the “Lost Three Decades.” Outside Japan, the world experienced the burst of the “Dot-Com Bubble” ten years ago, the September 11 attacks of 2001, the “Lehman Shock” of 2008 and subsequent great changes in global economic conditions. It is also amazing to see the growth momentum of the fast-growing emerging economies, including China.

The world has come to compete in acquiring and developing people as human resources. This is due to the significant increase in the scope and speed of the spreading of one person’s influence on the world and social values. It may also be said to be a competition to produce and acquire such influential human resources. Times have changed, from laptops to today’s smartphones and iPad. If we consider the effects of e-mail, Google, Facebook and Twitter upon society, the issues facing Japan are clear.

### People with a global career bear Japan’s future

In the global era, it is each individual person that ultimately creates values in society. These varied people, forming organizations flexibly when necessary, lead the changing world and Japan in the global context with a sense of speed. The world is now competing. It is no longer within the conventional framework of Japan, the United States and Europe. The entire world is shifting towards competing in and challenging global issues.

In Japan, organizations came first, to which people were trained to adapt. People were developed to suit society and organizations. The role of the university can be said to have been a mechanism teaching conventional values and basic skills to those enrolling based on the standard deviation score system. For better or worse, the spread of university education made campus life basically a four-year moratorium.

As the world becomes globalized, an increasing number of young people throughout the world, who seek better opportunities, are advancing to or studying at overseas universities, especially in the United States and Britain. The competition is severe. These universities have proven to produce many globally suc-

cessful people, and the worldwide network they create has immeasurable value. In fact, Harvard University is said to have received a record application of more than thirty times the number of admissions from around the world in 2010. The university does not use simultaneous entrance examinations in screening applicants with ultra-excellent high-school grades. This philosophy is also discussed in Michael Sandel’s “Justice” course.

### Great changes in universities

The world’s prestigious universities attract many excellent young people and seek to help them spread their wings around the world. Over the last decade, it has become clear that universities in the United States and some in Britain have a lead in the world by reputation and achievements. It is the result of assessments made by society on not only research but also education and graduates. University rankings fuel this assessment. While several Japanese universities were highly evaluated, the number of Japanese universities ranking in the global top 200 is low in comparison with the country’s population, GDP, and university advancement rate. Other than competing to acquire excellent students at the stage of their enrollment, Japanese universities have accepted their position in the domestic society that exalts bureaucracy and looks down on citizens.

Excellent researchers move across borders seeking a better research environment. In a flat world, they gather at any universities in the world where excellent students and graduate students gather. A global virtuous cycle is formed. The common language here is broken English, and the individual’s personality, ability, and trust hold significance. English does not refer to good pronunciation.

### Japan’s chemistry is strong

Japan has a history and tradition of producing distinguished forefathers in chemistry. Not only universities but corporations also have the strength. Their strength in chemistry is apparent from the historic achievement of receiving ten Nobel Prizes in the past ten years, which has given Japanese people energy and confidence. Four were received in physics and six in chemistry. Recipients of the Prize in chemistry are Hideki Shirakawa in 2000, Ryoji Noyori in 2001, Koichi Tanaka in 2002, Osamu Shimomura in 2008, and Akira Suzuki and Eiichi Negishi in 2010.

Are there any features common to these recipients? Of the six awarded in chemistry, Shimomura and Negishi spent most of their careers in the United States. The other four were in Japan doing research at places not necessarily as highly privileged as the University of Tokyo and Kyoto University. Mr. Tanaka also drew attention for being a corporate researcher without a Ph.D.

Mr. Negishi, after studying abroad, returned to the laboratory of a leading corporation, but soon left for the United States cut-

ting off his retreat route. It meant separation from Japanese society. Mr. Suzuki, while belonging to Hokkaido University, shared a laboratory with Mr. Negishi in the United States and produced results that led to the co-receiving of the Nobel Prize, showing Japan's traditional strength in this field of study. Messrs. Noyori and Shirakawa are also persons with a unique and attractive personality.

What these recipients have in common is that they seem to have been greatly influenced by their experience of overseas education, just as we have. The experience of a different world, especially at highly-regarded universities and laboratories, is valuable. Another common aspect is that they were not in the mainstream in Japan. Thus, in general, it can be said that the determination to go independent and compete in the United States has a high probability of producing high-impact results when funded with research grants.

### Future human resources

In this flat globalized world, real experience of different cultures during youth is very important in seeing oneself and broadening one's career options. This experience is essential especially to people assuming national or organizational leadership positions. Overseas experience should be recommended aggressively. To this end, university departments play an important role.

Although there were calls for the internationalization of graduate schools, the trend today of leading universities is to proactively promote international experience among undergraduate students. One university says that 50% of its undergraduate students study overseas for at least half a year before graduation. The university aims to have their students see and learn from the various realities of this globalized world. Many are successful in finding their goals. If they find it appropriate to pursue their goals by means of advancing on to graduate school, they will then decide to pursue such career there. The emphasis is clearly laid on nurturing young people and having them find their careers. A typical example is MIT's D-Lab. In addition, there are internships at domestic and overseas companies, promotion of student exchange programs such as the EU's Erasmus Programme, and the practice of taking a gap year. Each university is making all kinds of efforts to help provide students with future career options so that they may be successful in a globalized world. Bold efforts are also being carried out at departments of Princeton University.

Even in graduate school, the largest and second largest number of students recently acquiring a Ph.D. in the United States was from China's Tsinghua University and Peking University, and the third from UC Berkeley, reflecting the vigor of Asian students. The number of Japanese undergraduate and graduate students studying in the United States and Britain is significantly low, even in proportion to the population. The future activities of these students studying abroad will not be confined to one country but will span over two or three countries. Such is the world today.

In the age of globalization, nothing is more important than cross-border networks of individual people, since issues and opportunities in the world have become globalized. Issues are no longer confined to one country, and global interdependence is all the more increasing. None of the issues on energy, security, food

and water are confined to one country.

### Are young people inward-looking?

Young people in Japan are said to be inward-looking, but I disagree with this. The parents of today's university students are the generation living through Japan's sluggish economy since the bubble burst. Their children have not heard much invigorating talk at home through their lives. They are the generation that expects a hierarchical society, hiring of new graduates, lifetime employment, and the seniority system. It is Japanese society that is misleading young people as to whether to become a civil servant or find employment at a large company. Such a society offering employment to students in their third year of university is unheard of in the world. Lifetime employment can no longer be continued.

Moreover, generations of baby boomers and their elders went overseas because they considered the assignment a big advantage for promotion. They did not cut off their retreat route on their own. The same applied to overseas study also. Most graduate students were on business trips, dispatched to graduate schools from companies and Government ministries and institutions, funded with other people's money, and returning to the same place of work after a couple of years. It was the same with universities. Faculty members studied overseas for two or three years and returned to their universities. Whether it was universities, companies or Government ministries and institutions, there was no accelerated promotion skipping the years spent abroad after their return. Studying overseas was just a part of the hierarchical society and seniority system.

Today's youth know better. An increasing number of young people are going out to the "outside world" to find what they really want to do. It is very encouraging.

Let us adults begin by sending young people study abroad, be it a leave of absence or for a short period, then back them up, encourage them, and support them as much as possible through scholarships. It is only to the young generation that we can entrust our future.

Universities and graduate schools as well as faculty members should use their budgets and research expenses to send many students overseas even for a short period, and have them acquire a Ph.D., if possible. Not many faculty members recognize this as their mission, which greatly disturbs me. They should put into practice whatever they can before giving reasons why they cannot do it, such as a shortage in government funding.

1) Kiyoshi Kurokawa <http://www.kiyoshikurokawa.com>

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E-mail: [ronsetu@chemistry.or.jp](mailto:ronsetu@chemistry.or.jp)

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