

President's Address at the 2018 Saitama University Graduation Ceremony

Today, on the campus of Saitama University, the softness of the sunshine makes us feel the joy of spring coming. On this pleasant day, I would like to extend my sincere congratulations on your graduation. In addition, I express deep respect and warm congratulations to your families who have given support to you.

The numbers of graduates who earned doctoral, master's and professional degrees today are 26, 485 and 22, respectively. 77 of them are from 17 overseas countries, and 28 are re-educated people having their jobs. It is a distinctive commencement that is full of diversity only in "Saitama University All in One Campus at Metropolitan Area Saitama".

In my speech at the entrance ceremony, two years ago, I talked about the importance of reconsidering "what research is for" through the experience in research activities, and of having an awareness about the interface of research with society. As an example, I introduced the statement of the Institute of Electrical and Electronic Engineers (IEEE) on AI's ethical issues: "AI has to behave in a way that is beneficial to people. By aligning the creation of AI with the values of its users and society, we can prioritize the increase of human wellbeing as our metric for progress." If you relate this IEEE statement to "what research is for", you can easily understand the importance of being aware of "connection with society" under various values and ethics. I also pointed out that one of the ultimate goals of research is likely to be an increase of human wellbeing.

Each of you must have had your own goal at the time of entering the Graduate School and got various encounters and experiences in the study process until today. As a result, you must have achieved the research repeating challenge and failure with passion. With this fulfillment as a milestone, let me talk again about the ultimate goal of research related with the increase of human wellbeing.

The book "What is the Progress of History?" (Iwanami Shinsho, 1971) was published in 1971 by philosopher Saburo Ichii, and is still read by many people. The basic question is, "Is there really progress in human history?" In recent years, the fact that phenomena, that seem to be progressing on the one hand but causing great negative effects on humans on the other hand, have become apparent. As a result, the naive faith in human progress is broken, and the values themselves for making progress are lost. In such a situation, "what human progress is" or "what human wellbeing is" should be asked again.

According to Ichii, in the various aspects of human history, it is science that can clearly point out the metric for progress. In science, a body of knowledge that conforms to more facts and provides more accurate predictions is said to be more 'progressing'. However, the degree of acquisition of such scientific knowledge is not exactly the same as the 'progress' of human history, because one 'progressed' society in a scientific sense can just use that science to force cruelty to other societies. We can understand that an ethical metric evaluates human activity as cruelty, but that the ethics cannot be a metric of 'progress' of human history, if we think about the ethics of Carthage people who finally annihilated against the power of the ancient Roman Empire. After all, it is concluded that the 'progress' has been made in human history only by the harmonious realization of scientific progress

and ethical metric progress.

Ichii also discusses the connection of scientific research with society. He says as follows. "The social value that scientific research can have is the value that the research removes or reduces 'absurd pain' from humans. Suppose a research gives a clear knowledge on the cause and effect of certain infectious diseases, for example, the scientific quests can reduce the 'absurd pain' that the person concerned would suddenly suffer from when the cause and effect were unknown at all. However, the person who has been affected by the epidemic could be in a situation where he cannot pay for the treatment or he is not likely to receive treatment, even though he knows that he will be cured if he is treated. This is a problem that is related to the social conditions of human beings, and therefore scientific researchers are more aware of the progress of human society."

Let me consider a more recent problem. In 2015, the United Nation set the Sustainable Development Goals (SDGs) under the 2030 Agenda. SDGs are 17 universal goals that the whole world should work together to tackle a broad range of issues covering the economy, society and environment, aiming to realize a society in which no one is left out. SDGs can be one of the goals for the progress of human history and the human wellbeing.

Concerning the relationship between SDGs and science, the article by Prof. Mitsunobu Kano, Okayama Univ. (*Academic Trends*, Vol.23, No.8, 2018) might be informative. In the science that is motivated by social issues such as SDGs, it is necessary to expand the scope of questions and new ideas not only in science but also in human society in general. The hypotheses thus obtained are difficult to be proved only within the specific scientific field, and 'cross-border' from existing classification or interdisciplinary approach is inevitable. In fact, as symbolized by the historical merger between International Council for Science and International Social Science Council, the trend of change from "science for knowledge" to "science for future/for society" that collaborates with policies, companies, and civil society, is occurring in the world scientific community.

You may not have had time to look at other specialties as you have been digging deeper into your subject in order to develop your specialty. From now on, please pay attention not only vertically but also horizontally in all directions, that could be liberal arts of professionals. For that purpose, it is important to always 'think'. In order to 'think', a curiosity and continuing 'questioning' have meaning as Albert Einstein said, "The important thing is not to stop questioning; curiosity has its own reason for existing."

The future society is an uncertain society that changes rapidly and unpredictably. We must gather intellect of diverse experts for the progress of human history and for the human wellbeing, such as SDGs. That is why the transformation to a knowledge- intensive society is being called out. I do want all of you to master liberal arts of professionals by continuing 'questioning' and 'thinking' based on your research at Saitama University. And, I sincerely expect each of you to significantly contribute to the knowledge society as a well-balanced intellectual professional in the future.

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