

“Proposal: Integration of Knowledge – Toward Science for Society –”

SUMMARY

1 Background

Until its 19th term, the Science Council of Japan maintained a Standing Committee on Prospects and Policies of Science to discuss what study should be. The Council also established special committees as necessary, including the Special Committee on Science and the Formation and Methodologies of New Sciences in the 20th Century and the Special Committee on the Social Role of Science during the 17th term, and the Committee on New Science Systems during the 18th term. The Council has continued to develop discussions concerning approaches to study, or study theory, which have focused on “science for society.”

Although the Standing Committee on Prospects and Policies of Science was abolished as a result of a major reorganization of the Science Council of Japan, there remains a need to continue discussions regarding such theory of study. In this regard, the Council established this Committee on Integration of Knowledge and the Science Community to address this particular issue, and the committee has prepared this report. The committee discussed “integration of knowledge” from the viewpoint of “what should the science community do to enable knowledge to contribute to society more effectively”. During the course of the discussion, the current status of “integration of knowledge” within the science community, factors hindering integration, and mechanisms and motives that promote integration were taken into consideration.

2 Current status and problems

Systems of knowledge are easily segmented. This hard-to-defy tendency, which is common to humanities, social sciences and natural sciences, acts as an obstacle to “science for society.” In humanities and social sciences, compartmentalized fields are not able to cooperate to cope with complex social phenomena. Although knowledge from science and engineering fields is deeply related to the formation of artificial environments, and has a significant affect on various social activities, today’s segmented knowledge can hinder

understanding of and insights into the inherent influence that knowledge has on a broad range of issues.

The background to this current situation is that the science community lacks an awareness of the problem of knowledge segmentation, and we are concerned about this situation.

3 Contents of the proposals

(1) Promotion of cooperation among epistemological or cognizing sciences and designing sciences

The promotion of cooperation among epistemological or cognizing sciences, which search for “what is” or “being,” and designing sciences, which search for “what should exist” or “what should be”, is critical for “science for society.” That is, in addition to the use of knowledge derived by epistemological or cognizing sciences in socially useful applications through the contrivances of artifacts and policies that are based on the designing sciences, such cooperation will in many instances give birth to new knowledge.

(2) Points to consider for management of research pertaining to mission-oriented science

For mission-oriented scientific research aimed at innovation, research leaders responsible for research management must consider the following points.

- a) To gain insights into the industrial and social uses of research results, centralize a wide range of knowledge and take a broad, bird’s eye perspective.
- b) When research is being pursued through a division of labor, consider mechanisms to ensure young researchers are not confined to narrow areas.

(3) Promotion of dialogue among scientists in different fields

To foster exchanges among sciences and humanities, it will be necessary to regularly hold meetings in Japan modeled on World Knowledge Dialogue. In this case, it also will be important to investigate an educational system to foster the human resources who will act as an interface between the sciences and humanities.

We must again recognize the fact that our universities are storehouses of knowledge from different fields and each university should prepare educational and research environments to promote intellectual contacts among different fields through forums that extend across faculties and research programs.

1. Original document (Japanese) <http://www.scj.go.jp/ja/info/kohyo/pdf/kohyo-20-t34-2.pdf>