

ORGANIZATIONAL SCIENCE AND TECHNOLOGY COMMUNICATION ACTIVITIES IN UNIVERSITIES IN JAPAN

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Abstract

The Japanese government disbursed over sixty-trillion yen in total to research institutions including universities nationally from 1996 to 2011 to promote science and technology. Therefore, it is necessary to clearly transmit the achievements of scientific research to taxpayers. As part of their mission, researchers are also required to facilitate understanding and fulfill expectations of the public. To meet such requirements from the government and society, research institutions including universities have strengthened “Science and Technology Communication” activities since 2005. The Japanese cabinet adopted the “4th Science and Technology Basic Program” on August 19, 2011, and the “Promotion of Science and Technology Communication Activities” has spread across Japan. The objectives of this study clarify cooperation between institutions and researchers and specify elements to be prioritized to enhance cooperation. This paper clarified cooperation among university administrators, public relations departments and researchers based on results of a questionnaire sent to institutions in March 2010.

Key words: *Science and Technology Communication Activities; 4th Science and Technology Basic Program; Universities in Japan*

1. INTRODUCTION

In the “4th Science and Technology Basic Program” that the Japanese government rolled out at a cabinet meeting on August 19, 2011, the phrase “Promotion of Science and Technology Communication Activities” is provided in the body of the text. The program places importance on more active promotion of interactive communication activities so that recognition can be shared among the nation, government, research institutions and researchers [1].

This study examined interaction between research institutions and researchers with a focus on cooperative relationships in science and technology communication activities between university administrators, persons in charge of public relations departments and researchers in research institutions such as universities in Japan, based on data obtained in a questionnaire survey for research institutions in Japan conducted in March, 2010. This is considered to be an important element in supporting vitalization of organizational activities involved in scientific communications of research institutions. The results are reported as follows.

2. NOVELTY OF THE RESEARCH

Science and technology communication activities are essential for the promotion of science and technology in Japan today. These activities have been widely conducted by scientific research and education institutions such as universities, research institutions of incorporated administrative agencies, public research organizations, museums and science centers. Studies focusing on communication abilities of researchers as an issue to promote science and technology communication have been vitalized since the establishment of the 4th Science and Technology Basic Program. In particular, from the viewpoint of Science, Technology and Society (STS), research interests are focused on communication methodologies from the standpoint of correcting researcher biases toward citizens and the “lack of understanding model” by the public [2]. A large volume of research has also been found on how to cultivate science communicators to support science and technology communication activities of researchers and skills to be acquired [3].

This study is novel in its focus on actual situations of science and technology communication as organizational activities of research institutions such as universities and particularly addresses interactions between university administrators of universities, persons in charge of public relations and researchers.

This paper defines Science and Technology Communication as follows according to the definitions by the Science and Technology Policy Bureau in the Ministry of Education, Culture, Sports, Science and Technology. “Science and technology communication encompass significantly broad content and means communication activities for science and technology exchanged among organizations such as research institutions including the Diet and government, education institutions, academic societies, science museums, companies, incorporated non-profit organizations, and individuals such as the nation and residents.”

3. RESEARCH METHOD

Outlines of the survey in this study are described below.

3.1 Objectives of study

The objectives of this study are to clarify cooperation between institutions and researchers and specify elements to be prioritized to enhance cooperation. This paper articulates cooperation among university administrators, public relations departments and researchers based on results of a questionnaire sent to institutions in March 2010.

3.2 Subjects of study

Questionnaires were sent to a total of 150 institutions including national universities, public universities and private universities (including some incorporated administrative agencies). This survey was conducted in March 2010, and 93 questionnaires were collected (collection rate of 62%).

3.3 Grounds for extraction of subjects

These 150 institutions such as the above universities were extracted from 817 universities that adopted science research fund subsidies (scientific research funding) in 2008. The scientific research fund subsidizes researchers who are affiliated with Japanese universities and is a public research fund managed by the Ministry of Education, Culture, Sports, Science and Technology and the Japan Society for the Promotion of Science. For this reason, it was estimated that the research institutions that adopted the scientific research fund are more strongly required to conduct science and technology communication activities.

3.4 Respondents

In this questionnaire survey, questionnaires were sent to university administrators (such as president and director) of universities in Japan. Persons in charge of public relations departments in research institutions to be surveyed were designated as respondents of the questionnaire survey. Persons in charge of public relations departments were designated as respondents on the assumption that the public relations departments had not been established as an independent section.

3.5 Survey items

The following three survey items were set for this study.

1) Awareness of persons in charge of public relations departments at a university related to science communication activities and level of cooperation by researchers

- Does the person in charge of public relations departments at a university recognize science and technology communication activities as his/her own mission?

[Question]

Do researchers cooperate with you in the collection of information (of person in charge of public relations departments)? Select any one of the following items and circle the number.

[Items]

(A1: Very cooperative, A2: Cooperative, A3: Not so cooperative, A4: Not cooperative, A5: Unknown)

Among above items, A1 and A2 are set to be a group with a “high” level of cooperation, and A3 and A4 are set to be a group with a “low” level of cooperation.

- Do researchers cooperate in the collection of information by the person in charge of public relations departments?

[Question]

Please give us your opinion (person in charge of public relations departments)? Do you think that information transmission of research achievements in your university or research institution, that is, “science and technology communication activity” are inherently responsibilities of the public relations departments? Select any one of the following items and circle the number.

[Items]

(A1: This is the responsibility of the public relations departments, A2: This is the responsibility of the individual researcher, A3: Public relations departments and individual researcher should jointly share the role, A4: Unknown)

Among above items, A1 and A2 are set to be a group with a “jointly” assigning the role, and A3 and A4 are set to be a group with a “separately” assigning the role.

2) Collaboration between public relation departments in the university and mass media

Does the public relations department in your university closely collaborate with mass media such as newspapers, magazine publishers, TV stations and radio stations?

[Question]

Does the public relations department in your university closely collaborate with mass media such as newspapers, magazine publishers, TV stations and radio stations? Does Select any one of the following Items and circle the number.

[Items]

(A1: Very close cooperation, A2: Close cooperation, A3: Not so close cooperation, A4: No cooperation, A5: Unknown)

Among above items, A1 and A2 are set to be a group with a “high” level of cooperation, and A3 and A4 are set to be a group with a “low” level of cooperation.

3) Involvement in science and technology communication activities by university administrators

Are university administrators (such as president and director) involved in planning of science and technology communication activities?

[Question]

Is the decision maker (for example, president, vice president, director, research director, laboratory director) responsible for operation of the university closely involved in planning public relations strategy of science and technology communication activities in your university? Select any one of the following items and circle the number.

[Items]

(A1: University administrators participate in the public relations committee and public relations working group established in the organization, and are closely involved, A2: Public relations committee and public relations working group are not particularly established in the organization, however, opportunities for explanations to university administrators by persons in charge of public relations and exchange of opinions are ensured, so university administrators are involved, A3: The

university administrators are not closely involved in planning of public relations strategy, A4: Unknown)

Among the above Items, A1 and A2 are set to be a group with a “high” level of involvement of the university administrators, and A3 and A4 are set to be a group with a “low” level of involvement.

4. RESULTS OF QUESTIONNAIRE

IBM SPSS Statistics Ver.21.0 was used for analysis, and answers were summarized into a cross table.

Awareness of persons in charge of public relations at a university, organizational activities such as collaboration with mass media and involvement of university administrators were set as an objective variable, and the level of cooperation of the affiliated researchers was set as explanatory variables. A null hypothesis with no relationship between both variables was set. Initially, the cross table result of the survey item 1) is described. In universities where the persons in charge of public relations at a university recognizes that science and technology communication activity is a mission in which the public relations department and researchers should jointly address, the rate that researchers affiliated with a university are cooperative in the science and technology communication activities was 75%. In this result, a significant difference was found by square test, and a null hypothesis with no relationship between the both variables was rejected. ($P=0.000$). Table 1 shows the result.

		Awareness of sharing role		Total
		High	Low	
Level of cooperation of researchers	High	68	0	68
		(75%)	(0%)	(75%)
	Low	16	7	23
		(17.6%)	(7.7%)	(25%)
Total		84	7	91
		(92.3%)	(7.7%)	(100%)

Table 1: Awareness of sharing role

(Note) Percentages in parentheses indicate rate relative to the total, and excludes two cases of no answer.

Next, the cross table result of survey item 2) is explained. In universities where the public relations department at a university collaborates with mass media such as newspapers, magazine publishers, TV stations and radio stations at a high level, the rate at which researchers cooperate in science and technology communication activities is at a high level of 35.9%. When collaboration is at a low level, the rate at which researchers cooperate at a high level is 39.1%. In this way, when the public relations

department at a university collaborates with mass media at a low level, the level of collaboration with researchers tends to be higher by 3.2%. Obviously, the results show that researchers in universities surveyed this time cooperated in science and technology communication activities at a high level irrespective of the degree of collaboration with the mass media.

On the other hand, low level of cooperation of researchers affiliated with universities is 19.6% when the level of collaboration with mass media is low, and a difference of 5.4% and 14.2% were observed for rates at which the level of cooperation is low when the level of collaboration is high. Table 2 shows the results. In this manner, researchers do not always cooperate at a high level because the universities collaborate with mass media at a high level. However, it was found that, when the level of collaboration is low, the rate at which the level of cooperation of researchers is low is lower by nearly 15% in comparison with the inverse case. With this result, a significant difference was found at the 5% level by square test ($p=0.028$). For this reason, null hypothesis with no relationship between both variables was rejected.

		Level of collaboration with mass media		Total
		High	Low	
Level of cooperation of researchers	High	33	36	69
		(35.9%)	(39.1%)	(75%)
	Low	5	18	23
		(5.4%)	(19.6%)	(25%)
Total		38	54	92
		(41.3%)	(58.7%)	(100%)

Table 2: Level of collaboration with mass media

(Note) Percentages in parentheses indicate rate relative to the total, and excludes two cases of no answer.

Finally, the cross table result of the survey item 3) is described. In universities where the university administrators (such as president and director) of a university are involved in science and technology communication activities at a high level, the rate at which researchers cooperate in science and technology communication activities at a high level was 60.2%. When the university administrators are involved at a low level, the rate at which researchers cooperate at a low level is 13.6%, and which suggests that involvement of university administrators clearly influences the level of cooperation of researchers. In this result, a significant difference was found at the 5% level by square test ($p=0.046$). For this reason, a null hypothesis of with no relationship between both variables was rejected.

		Level of involvement of university administrators		Total
		High	Low	
Level of cooperation of researchers	High	53	14	67
		(60.2%)	(15.9%)	(76.1%)
	Low	12	9	21
		(13.6%)	(10.2%)	(23.9%)
Total		65	23	88
		(73.9%)	(26.1%)	(100%)

Table 3: Level of involvement of university administrators

(Note) The inside of the parentheses shows a rate relative to the total, and excludes five cases of no answer.

5. CONCLUSION

This survey result shows that awareness of persons in charge of public relations in research institutions such as universities in cooperation with researchers affiliated with the institutions was necessary to increase the level of cooperation. Moreover, it is suggested that involvement of university administrators in science and technology communication is also related to the level of cooperation of researchers. It was found that the level of cooperation of researchers affiliated with the institutions does not significantly change with collaboration between universities and mass media irrespective of the level of the collaboration.

In order that research institutions such as universities in Japan develop effective science and technology communication activities in the future, it is important to raise awareness of cooperation of persons in charge of public relations with researchers and strengthen active involvement of university administrators in science and technology communication activities.

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