

MAKING COMMUNICATOR THROUGH THE PRODUCTION OF SCIENCE RADIO

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Abstract

“The Science Explorers CoSTEP” is a weekly community radio program produced in Hokkaido University’s education program of science and technology communication that is called “Communicators in Science and Technology Education Program (CoSTEP)”. CoSTEP is an open course for the public who have had undergraduate degree or the same level of literacy. Our program consists of lectures, practical trainings, and students’ projects. Science Radio is for practical trainings and students’ projects.

The main target of the Science Explorers CoSTEP is 10 to 12 years old children (but our program also tries to be educative for their parents). Our radio program aims to communicate science and technology to young children and their parents understandably and enjoyably.

Together with teaching staffs, students in CoSTEP are making a 30 minutes radio program every week. Since making a radio program requires synthesized skills, students learn to acquire ‘information literacy’, which is consisted of various aspects of science and technology communication through its production.

Practical communication skills are inevitable for public communicators in science and technology. First, they need to gather material for program by collecting information and contacting experts. Second, they need to explain scientific and technological matters in appropriate language and information. Third, they need to acquire a good oral communication skill. Finally, they need to direct overall composition of program that should be understandable and attractive. Students are gradually learning how to synthesize these skills in communicating science and technology.

Our radio program is broadcasted in a community FM station. Community FM may be the best entry point for the novice communicators because it is easy to imagine the audience in neighboring area. In addition, our self-made radio program is now outreaching wider audience according to the development of the podcasting services

Keywords: science communication, community radio, information literacy, education

1. Introduction

“The Science Explorers CoSTEP” is a weekly community radio program produced in Hokkaido University’s education program of science and technology communication that is called “Communicators in Science and Technology Education Program (CoSTEP)”. CoSTEP is an open course for the public who have had undergraduate degree or the same level of literacy. Our program consists of lectures, practical trainings, and students’ projects. Science Radio is for practical trainings and students’ projects.

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Together with teaching staffs, students in CoSTEP are making a 30 minutes radio program every week. Since making a radio program requires synthesized skills, students learn to acquire ‘information literacy’, which is consisted of various aspects of science and technology communication through its production. According to a report by the Presidential Committee in the United States, “Information Literacy is defined as the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand” [1]. The report also stresses the importance of Information Literacy for developing lifelong learners in higher education institutions. Even though this report is old now, “Information Literacy” is becoming important more and more for the public, according to the growing information traffic in our every day life.

Now people can access various technologies and opportunities to disseminate information and ideas in their hands. Production of radio program seems to be a beginning of the trend of the public engagement with science and technology. I also believe that it is actually a good entry point for any citizens to nurture ‘Information Literacy’, which is necessary for 21st century ‘science literacy’. Interestingly, we found that our practical training is improving information literacy not only of our students, but also of researchers we interviewed.

2. Science Explorer CoSTEP

Our radio program is called “SCIENCE EXPLORER CoSTEP”. This program is scientific variety show for children. In fact, it is very difficult to communicate scientific information to people who don’t know or don’t like science. But, by targeting a particular group, it becomes clear how we should communicate information in appropriate way

“SCIENCE EXPLORER CoSTEP” is broadcasted by a community FM station in neighboring area. You can also listen to our program via Podcasting too (I am afraid that it is only in Japanese).

As personalities, I and one of students are guiding the program. Every week, students are reporting various topics in science and technology. Program is constituted by several sections.

The first part is ‘Takky’s Easy English’. It is introducing an English word and explaining relevant scientific stories.

The next part is the main part of this program. That is, “Let’s go to the laboratory!” Every week, two or three elementary school children are visiting laboratory in Hokkaido University and interview them. We have been to laboratories of ‘astronomy’, ‘biology’, ‘material engineering’, ‘electronic engineering’, ‘agriculture’, and ‘medical science’. Every time children ask researchers a basic question like ‘What kind of research are you doing?’ Most researchers are struggling to answer to them. They try to explain in understandable way, but that endeavor is often in vain. When researchers are using technical terms, we usually rephrase it in understandable expression at that moment. But, it may still too difficult for our listeners. In those cases, we add extra explanation at studio recording.

Bold questions from children are sometimes very interesting. For example, when the researcher said, “There are about three thousand species of frogs”, young interviewer is asking him, “So, how many species among human being?” Then, the researcher answered, “There is only one species in human being. There are many colors and languages, but Human being is only one kind of creature. We can make sure of it because people can get married and make a baby.” I hope that we can produce this kind of conversation more and more in our university.

Also, we have other sections like “Today’s Science News” “Science Proverb Dictionary”. These sections are analyzing traditional proverbs scientifically. In another corner of ‘Why don’t you look upward tonight?’ we are talking about stars in the night of the airdate. In each section, students are collecting information, making stories, and talking by themselves in the program.



3. Communication Abilities

Since making a radio program requires synthesized skills, students of CoSTEP experience various aspects of science and technology communication in every step of production. We aimed to teach students abilities such as information gathering, interviewing, writing, and expression, all of which are inevitable for science and technology communicators. Even professionals do not have all these abilities and skills, but no one can acquire them without practice. From my point of view, as an ex-professional in broadcast company, students of CoSTEP have dramatically improved their abilities.

Students could learn and acquire following five abilities.

First, they can improve the ability to gather scientific information. Scientific information is located in various corners in society. Only in our home university, Hokkaido University, there is an enormous amount of scientific information. Students need an ability to manage to choose important and necessary information. In gathering information, critical examination is crucial. Even Google sometimes tell a lie. They realized the necessity to find the concrete ground of information. Also, they understood that production of radio program is, to a greater or lesser extent, influencing on knowledge production.

Second, they can improve the ability to interview experts and comprehend what they are talking. Researchers are not always good at talking and expressing to non-experts. Students learned that we cannot ask proper questions or edit data unless we understood the research topic of the interviewee in advance. The more they experience interviews, the more they are good at interviewing.

Third, they improve the ability to edit information into understandable stories. It is often said that ‘easiness’ and ‘accuracy’ do not sit together comfortably. However, if we understand what we want to tell, it is not so difficult to balance between those two purposes. Students were normally editing 20 minutes data from interview. To make it easy to understand and accurate, they refine and reorder the data into 10 minutes. Sometimes, they divided interview into two parts and add extra explanation in recording studio. These techniques and efforts become improving the ability to communicate scientific information understandably.

Fourth, they can improve the ability to communicate and publicize stories in simple and understandable way. In radio, oral expression is very important. You can never imagine how important it is unless experiencing it. For students, it was precious experience to understand the unique feature of radio medium among various media. Oral communication should be attractive and needs clear pronunciations. Also, students were required to think over how to communicate story at the moment of recording. For example, they needed to take care of homonym or put interesting episodes in the story. Communicating scientific information without visual image is hard task, but it trained students very much.

Fifth and finally, they can improve the ability to produce the whole program interesting and attractive. Any program needs to be produced and organized as a whole. Producing the whole program is highly synthesized ability and it is difficult to teach. It may be a matter of sensitivity. But, this ability decides the quality of the program. Through producing radio program every week, students are gradually getting a sense of what is good and what is bad of the program.

4. Evaluation

We have conducted a small evaluation survey of this program in an elementary school on 16th of February. We went to a 5th grade class in the Nebo Elementary school in Sapporo.

First, we surveyed background knowledge of pupils. Then, we played 'Science Explorer CoSTEP' for 15 minutes and surveyed again how much content of program was understood among pupils. Program included knowledge regarding the winter sleep of bear which was explained in 'Tacky's Easy English' for 2.5 minutes, and the sap of Betula which is explained in 'Let's go to the laboratory' for 10 minutes. On the sap of Betula, Professor Terazawa explained that the way of extracting the tree sap, and why it is sweet for older people and good for health.

Figure 1 is findings of the survey. First, we can see that 85% of pupils knew the winter sleep of bears, but only 27% of pupils knew the tree sap of Betula (Betula is common tree in our region).

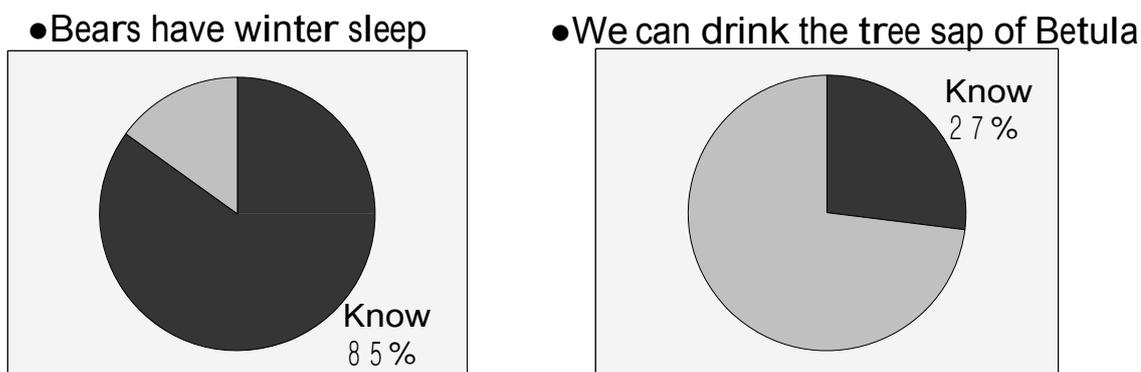


Figure 1. Advance Knowledge

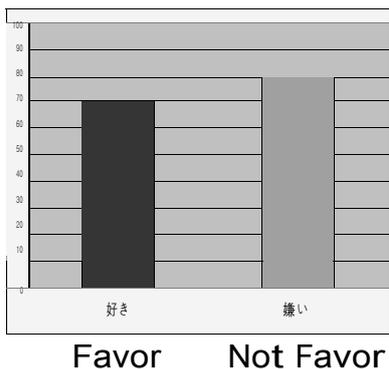
Figure 2 is the result of survey after pupils listen to our radio program. All of pupils have got right answer to the fact that mother bears having baby during winter sleep, and 88% pupils have got right answer about the weight of a baby bear. About Betula, 62% of pupils have got right answer that tree sap is more than 100 liter per a tree. In 'Let's go to the laboratory', the researcher explained a somewhat difficult story that the tree sap of Betula is getting rid of active oxygen, but pupils seemed to understand. For example, 92% of pupils have got right answer that people who feel the sap sweet are likely to be tired. Also, 85% of pupils have got right answer that the tree sap is getting rid of harmful substance in human body.

| | |
|--|------|
| ● Mother bear is delivering baby during winter sleep | 100% |
| ● The weight of baby bear is about 400g | 88% |
| ● The amount of the tree sap from a Betula | 62% |
| ● Which countries drink the tree sap of Betula | 31% |
| ● Why the tree sap is tasty | 92% |
| ● How the tree sap is healthy | 85% |

Figure 2. Percentage of Right Answers

Figure 3 shows that percentage of right answers does not change between pupils who favoring science and those who do not. There is no relationship with advance knowledge. We are pleased with this result because our purpose is that any pupils can learn science by listening to our program.

● Pupils favoring science or not



● Pupils having Advance knowledge

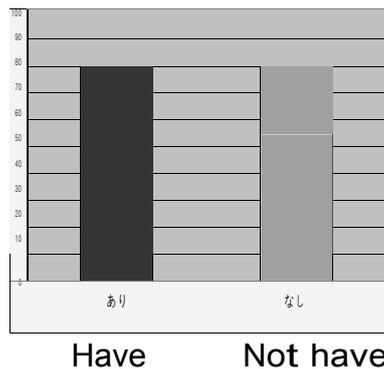


Figure 3. Percentage of Right Answers

Also, 65% of pupils said this program is interesting and one third of pupils said they want to visit laboratories. It encourage us very much, but pupils may have said flattery for us.

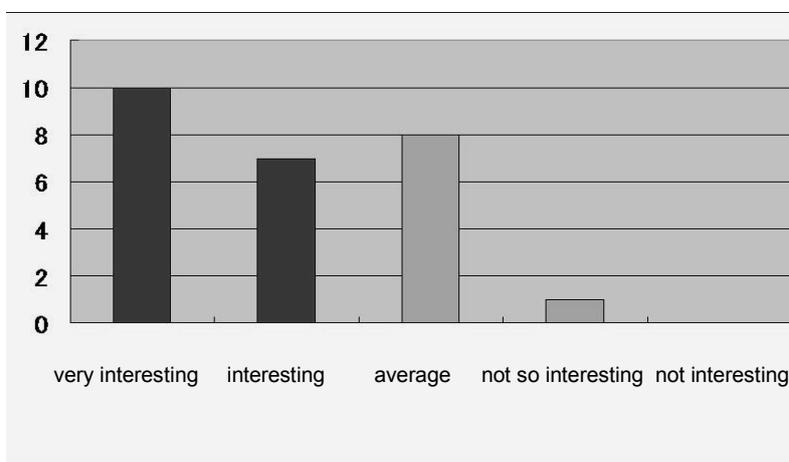


Figure 4. This Radio Program is...

5. Conclusion

Most importantly, we found that production of radio program is very useful for educating science and technology communication. I argued that the practical training gives the abilities in communication skills such as information gathering, interviewing experts, editing information, oral communication, and producing the whole program. In a small survey, we could see pupils are enjoying and understanding our program.

As I already mentioned, our program is broadcasted in the local community, so it may contribute for attaining accountability about the scientific research for the public, especially local community. Hokkaido University is situated in the center of the city of Sapporo, populated 1.85 million. Although university campus is quite near from city centre, local community does not seem to feel university is close and familiar. We hope that our program and other activities are lowering the walls of university and improving communication between researchers and the local public [2].

It is worth noting here as another interesting finding is that researchers also seemed to learn how to explain their research to the public. Every time we visited researchers, they welcomed us and were enjoying interviews. That is to say, unusual meetings between researchers and local school pupils are mutually educative. Alternative communication sphere like local radio program could be an interesting forum for researchers, students, and local community [3]. It seems to me that it can improve information literacy within and without the university.

7. References

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