

Title: Stimulating Scientific Interest of Junior High Students

Recently, losing interest in science of students has become apparent in Japan. Japanese students ranked the bottom among 47 nations for the question asking their interest in science, according to the survey of OECD last year.

This result makes us, Kosen students feel disappointed, because most of Kosen students are in love with science. It also makes us think whether there is something we can do to change this situation. So in this presentation, first, we will talk about when and why students lose their interest in science. In the second part, we propose one solution Kosen students can assist in. Finally, we'll present mini show.

First, when do Japanese students start losing their interest in science? Please look at this figure. This is one of the results of surveys about students' interest in science. Upper data indicates that of elementary students. Lower one is that of junior high students. At a glance, the result of junior high students is more unfavorable than those of elementary school students. This tendency is shown in almost everything of other results in this survey. So we have focused on losing interest in science during junior high school days.

Next, why do junior high students lose their interest in science? After examining this problem, we've found two possible causes. First, the reduction of science experiments through the relaxed policy of Ministry of education. Another is unpopular stereotype of scientists.

Now, we'll explain the first cause, the reduction of science experiments through the relaxed policy of Ministry of education. Actually, do you know how many hours for science experiments in junior high school have been cut down through this policy? A teacher of ICU high school, Mr. Takigawa reported that the total school hours in three years of junior high school have been reduced from 420 to 350 hours. In spite of this reduction, the educational contents were not reduced accordingly so that the experimental hours drastically declined.

Another possible cause is unpopular stereotype of scientist. An international comparative research project, ROSE reported that a lot of Japanese children have stereotyped images of scientists as being introverted and geeky like this. And in fact we have to say it is uneasy to know real scientists as an occupation in their daily life.

In this section, we explained the two possible causes of losing interest in science.

Based on these 2 points, we propose you one solution that Kosen students can assist in. That is a delivery service of science experiment. Our plan has three parts. So we will explain about these parts in the next section.

The first part is that our plan is able to provide junior high students with opportunities for participating in experiments. We expect that they become interested in science by doing experiments in our plan.

Next part is that Jr. high students are able to meet real scientists through this activity. That's because this delivery service is conducted by Kosen staff, Kosen students under supervise of Kosen graduates and Kosen professors. They are scientists, so we believe conducting experiments with these

people can improve unpopular stereotype of scientist

Now, the third part is adding Kosen spice to make our plan interesting.

Specifically, we think the following 2 points make our plan interesting, Conducting experiment without knowing how the experiments will end up, and connecting experimental knowledge to daily-life phenomenon around us.

If you conduct experiments without knowing the results, you have to find out the answer by yourself. This makes experiments more interesting. In addition, if you can realize how much your life is related to science, you can enjoy experiment even more. On the basis of these 2 points, now let us show you one example of how to proceed an experiment. C'mon teacher and student. Please imagine Mr. Kurosawa is a teacher and Mr. Muto is a junior high student.

Teacher: Good morning everyone.

Student: Good morning Mr. Kurosawa.

Teacher: Today, I need your help.

Student: What is it?

Teacher: At the party yesterday, I spilled some red wine over my favorite white shirt by mistake!

In this case, what should I do to get the red stains out without taking it to the cleaners?

Student: Soak it in water or milk? Or... salty water?

Teacher: Ok. Let's find out the answer by doing experiment!

At this point, we wouldn't teach the answer to students in haste. We let each student conduct the experiment by trial and error and wait until each student finds out the result.

If you were the student, what would you do?

Teacher: Okay, did you succeed in getting the stains out?

Student: Yea!!! White wine worked!

Teacher: Good for you! But, do you know why it worked?

Student: I don't know why.

Teacher: Well, let's think about it next.

Student: Yea!!

Thank you, teacher and student.

Did you understand the meaning of doing experiments without knowing the result and connecting experiment to daily-life phenomenon? We want to give this kind of surprise to junior high students in our delivery service of science experiments.

Now, we are moving to the conclusion. The phenomenon of losing interest in science has become apparent in Japan. So in this presentation, we proposed one solution Kosen students can assist in. A delivery service of science experiment. Through our plan, we expect Jr. high students become love science. In terms of the expense and manpower, this does not look easy to implement. But we are encouraged by one data. When we asked Tokyo Kosen students if they were willing to take part in this kind of project, 70 % answered they would like to join! Kosen students are motivated enough to do it. Thank you.