Improving Student Collaboration between Departments

at Tokyo Kosen [3]

TOKYO National College of Technology

Good morning, everyone.   I'm Masaya Yoshizawa, and this is Yuta Uchida and Ken-ichi Yamazaki.   We all come from Tokyo Kosen.   Today, we're going to talk about "Improving Student Collaboration between Departments at Tokyo Kosen".

When we entered the Kosen, the department was selected for each new student.   There are five departments and their curriculums are different.   This allows us to study the technical subjects early, but it also makes it difficult to get interested in the other fields.   But in the advanced course, the students have more opportunities than regular course students because the departments are integrated.

According to the Nippon Keidanren's survey, most companies want graduates who can early work with people in other fields.   But freshmen are different from the companies' ideal people. This is the gap between graduates and society.   Here ideal people mean those who can work on joint projects.   To become such people, we need to get knowledge about other fields to easily work on joint projects.

We have many ways to get knowledge about the other fields.   For example, reading books, taking lectures and communication.   But books and lectures are difficult.   So we think, communication is much easier.

We belong to two different departments, electronics and chemistry.   In the Kosen's curriculum, each department's students are separated, and there are few opportunities for communication. However, we are never far apart.

We have to approach the goal that is becoming ideal people.   So, we need to jump onto the steps.   For that reason, we decided to make some activities for the first two steps.   Those are a joint seminar and joint research between students from different departments.   These are parts of the communication tools. First, I'll talk about the 1st step.

In this seminar, we explained our research plainly to the students from the other department. The seminar's style is shown here and it has 6 topics.   These are the photos we took in the seminar.

When we finished the seminar, some students found that, "we have little knowledge of the other fields", "it is difficult to explain to students from the other fields".   However, all students said "we had a good time" and "we want to do it again".   Hearing this, we were happy because this seminar was successful as the 1st step.

So we could jump onto the 1st step by the joint seminar.

However, we found that there were some limitations and challenges at this time.   One of that is that information was given only in one direction, that is, one-way communication.   As a result, enough understanding was not achieved.   Therefore, we found that interaction is necessary when we do joint projects.

By the way, after the joint seminar, we had a time to talk with all participants freely.   At that time, we talked a lot, we talked various kinds of topics.   Let us show you our typical

conversation.　This conversation is between a chemistry student and an electronics student.

[short play]

C : "In my research, I use microorganisms and I have to count them.　The microorganisms are so small that it is really hard to count them!"

D : "Oh, really. I think I could count them much more easily.　We study image processing; it can be used for counting objects.　If you used this technology, you could count them more quickly."

C : "Wow! That's great!!　Please tell me how."

D : "With pleasure."

Here, the collaboration opportunity between two departments is generated.　Later, our professor agreed to our idea.　So we could go to the next step, "joint research".

This is a photo of the microorganisms.　It takes a long time to count them by eye observation. However, using an image processing technique, the required time may be shortened.

Now let us show you how much power image processing has with an example.　There are many points in this image.　Now we suppose they were microorganisms.　When a student counted them by eye observation, it took about 40 seconds.　On the other hand, image processing was able to count them in only 4 seconds!　We could reduce the time to one tenth by using image processing.

Moreover, there are many other merits for the students in both departments.　First of all**,** the students in the chemistry department can save counting time.　On the other hand, the students in the electronics department can extend their research field.　Of course, both students also get common merits.　We can learn how to exchange information, and get the knowledge and perspective of students in the other fields. For these reasons, the joint research is useful for joint projects with people in other fields in the future.

In other words, we were able to enhance the interaction in the communication.　That is, we were able to get over the seminar's limitations.　Therefore, we think this joint research is successful as the 2nd step.

So we could jump onto the 2nd step by the joint research. We have other plans to extend communication to the 3rd step in the future.

First, we want to communicate with other departments in our school.　Secondly, with other Kosens. We believe that we can make more interesting communication because there are many students with different knowledge and perspectives. For example, we can communicate with students in the mechanical department.

Our knowledge is relatively deep for our field; however it is not very wide for the other fields. Because we have few opportunities to communicate with the students in other departments. That is, we have a young "knowledge tree".　So we held some activities, the joint seminar and the joint research to grow our "Knowledge Tree". As a result, we could increase our interest in the other departments by the communication.　With the joint seminar and the joint research, we water our knowledge tree and grow it.　By this, our tree grew bigger.　We believe that students having this tall and wide tree can satisfy the social demands.　Therefore, we encourage you to communicate with students from the other departments. Thank you for listening.