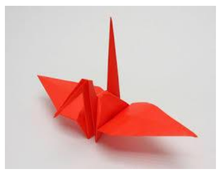
Unit N:Twincle program in Jogjakarta, Indonesia

Introduction

"Making paper from vegetable…? That sounds interesting!"
That's our starting point to make a lesson for Jogjakarta in Indonesia.
We, *Saori Uchiyama, Nami Suzuki, Yuji Koiwai* are members who got together just before going to Indonesia.
Nobody is specialist in scientific field.



<u>At Preparing for lesson plan in Japan</u>

"Introducing Japanese culture through washi, that must be good!"

<u>On the presentation about lesson plan At UGM</u>

An important question had arisen:

What is the main idea in your lesson, Washi, making Washi or fiber…?

Since then, our journey to find out how we could develop our lesson started!

Lesson Day 1 & Day 2 at SMA3

Firstly we'd like students to focus on the fiber more than just making paper. This is because we thought it would be the best, in such a short stay, if we could give them a new way of viewing the world. We also would like students to have an interest in their surroundings that they usually touch and see.

<u>Outline and contents of first lesson</u>

Introducing

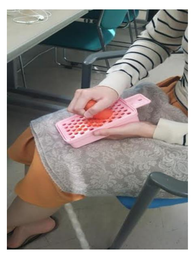
We introduced fiber as general one, instead of Japanese culture and Washi.

Making paper

1. We prepared *6* kinds of vegetable.

⇒Firstly, we motivated students to choose which vegetable's fiber seems to be suitable to make paper.

2. To explain the procedure, we used "a lot of" slides.




Sharing time

Students had time to share what they thought and felt through the experiment. We asked them difficult point about making paper. must give the point at issue to all of the students during the sharing time.

Conclusion

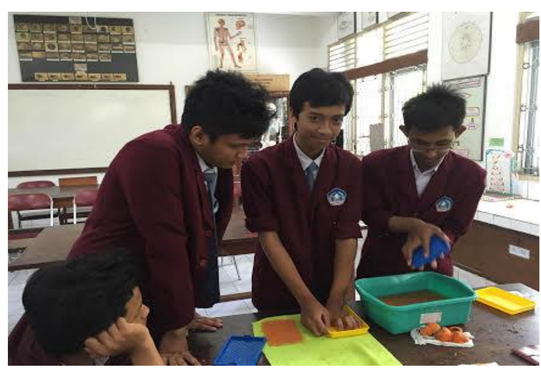
We introduced "pulp" to give them concept of fibers from plants to make paper at first.
Next we also introduced how those fibers are being studied and developed in Japan, showing one of example called cellulose nano fiber. And finally we concluded with our own impression about fiber.

<u>Problems to be solved after the lessons at Day1&2</u>

- unclear question in sharing time
- over the class time schedule
- weak connection between paper and fiber

Lesson Day 3 & Day 4 at SMA6

We must clear the point of lesson for students. Because students have looks like they had focused 2 point during the lesson. These point was Japanese paper [Washi] and the fiber. I want to tell every student to the fiber.

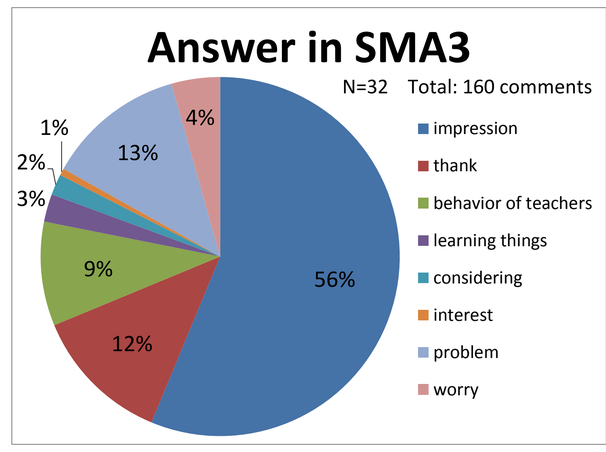


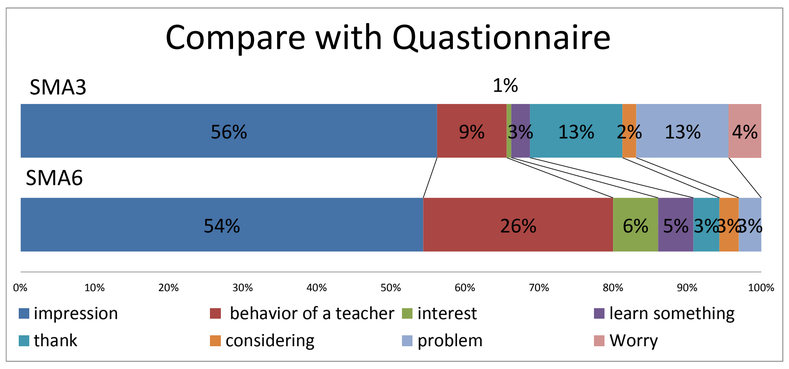
<u>Improvement since the last time</u>

- We stopped presentation Japanese paper [Wsahi].
- As the experiments, we let every students have only carrot not choose six vegetables.
- We have emphasizer an introduction to cellulose nanofiber [CNF] before.

Results of questionnai②

Compared with SMA3…
- Increase "interest", "learn something"
- and "considering" comments before we fixed our lesson
- Student could understand our lesson except our shortage skill of English.
- No students worried about safety during
- our lesson.





Consider from this results, this is our conclusion; our improvement points could give good influence on students' understanding.

Then how could we develop in the end?

<u>From the reflection of students at SMA6</u>

1. Some students could get interested in Cellulose Nano Fiber.

After the class, a few of students asked us,

"Which university in Japan can I study CNF?"
"Is that study being conducted even in Indonesia?"

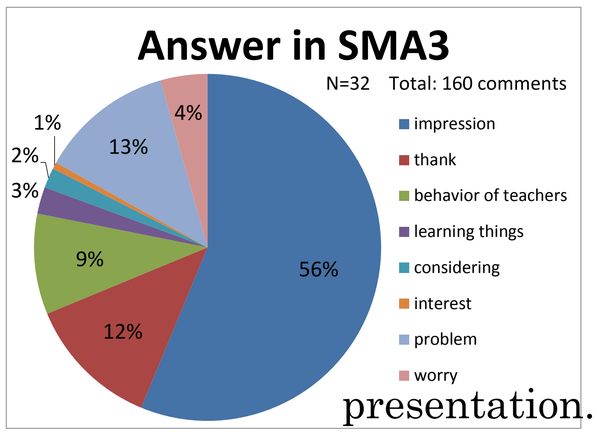
2. The clearer purpose on class is, the simpler the content is

We had not thought about the meaning of doing a class for us and students.
Ex. *"Why do we do a class in Indonesia?"*
"What would we like students to be thorough the class?"

Results of questionnaire①

- Most students refer to impression and thank.
- But, few students refer to find interesting or consider point about our lesson or our aim.
- Nearly 15% student feels worry about safety or finds problem point from our lesson program.

→We afraid "They can't find our aim." It's caused by our unclear presentation.



-Points for reconsideration-

- We try to much focus on our aim(especially Fiber).
- To Change our handouts more clearly
- To improve our explanation term not to make students confused.

Future

<u>About celluos nanofiber</u>

This is new material in the future
We could be apply it to many fields because main characteristic is lighter and stronger than steel. CNF has many possibilities and many chances to apply.

<u>About us</u>

As do a class at oversee, we recognize that all of students has common eyes when they learned something of new. We thought these eyes looks like sun.

Somedays we contribute to students of Indonesia also all over the world. We must keep and improve to these eyes from now on.