

Lessons at Tokyo Gakugei University Senior High School

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Day of lesson 20th July 2016
Place Tokyo Gakugei University Senior High School

[Objective]

We intended to enhance the students knowledge on *E. Coli*, gene recombination technics and synthetic biology in general. And also to confirm the impact our class had in the students through a surviue. Finally, we thought it would be a good opportunity to improve on our card game by letting the students play it.

[Targeted audience]

15 high school students

[Results]

We represented the image on gene recombination the students had before the class, which we obtained from the before-class surviue, below.

(Before)

- Since something unknown is being injected inside the body I fell it's insecure and dangerous.(Previously I have heard that you can manipulate genes through radiation)
- Since we can change a living been's features to our convenience, several things are being being optimized. But I'm unsure if it's safe to eat.(It seems that as we genetically modify agriculture goods to our convenience, we are also injecting things malicious to our body)
- It sounds interesting, I also want to try. However I fell uneasy using it for food.(I learned about it last year, so I'm interested on it) (2nd grader at senior high school)
- I sounds difficult (I have heard the word several times, but there are not many chances to hear all the details)
- If used correctly it should be helpful (Just a felling)
- It's dangerous, it should be controlled properly

(After)

- It helps adjust our intestines. They are the victims of macrophage (I have heard about *E. Coli* in TV commercials and alike)
- I was surprised to hear that gene manipulation is easier to do than I expected
- It seems like it can be used in several things
- I also want to try doing it

About the Card game



Students playing with the card game

Points to improve, how they were improved

- The game ends too fall → Introduction of losing after dying 3 times
- Colicin overflows the place → Introduction of the removal of already expressed elements
- The times an AHL conjugate appears is way too often → Once used it's removed

Good points

- One can learn things that you cannot learn at school through a fun and easy to understand game
- Once you get used to the game it's rather easy. It would be more interesting to see a more strategic side to it

Summary

This time we tried teaching through a more technical approach. As a result, we got more technical opinions from the students. However, there seemed to be several students that hadn't understand the complicated parts of the lesson. We were reminded of the importance of probing the group and acting accordingly with the proper contents.

About the card game, all students were playing the game joyfully. And, since our main

goal was to improve the card game, we can say it was a success. We had a group discussion in order to improve the points previously appointed so we could made an even more entertaining game.