

Akiumi OBA, Hiraku WATANABE, and Shunsuke KOIKE*

Department of Electrical and Electronic Engineering, Chiba University and
Department of Education, Chiba University*

High School We Visited

- SMAN 1 Depok • SMA Kolese Gonzaga
- 05-06 September 10-11 September

Science Lesson 【Dye Sensitized Solar Cell/DSSC】

Objectives of this Lesson

In this lesson, each student was expected to:

- Conduct simple experiment on DSSC; and
- Explain the mechanism behind converting sunlight to electrical energy.



Flow of the lesson

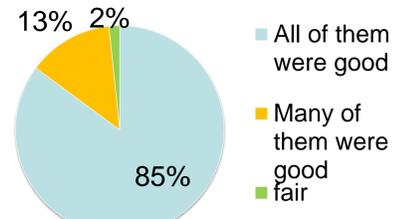
Time Allotment	Activity	Teaching Materials
15 mins	Introduction -Energy generating systems -Comparison: Si-type solar cell and organic solar cell	
60 mins	Experiment -Simple Dye Sensitized Solar Cell (DSSC)	
10 mins	Conclusion -Future technology related of solar cell	

Teachers' Activities

- We could effectively explain the process of making DSSC using various media (video inset, pictures, presentation and actual demonstration).
- Experimental kits were well prepared.
- We could help the students explain DSSC.

Students' Reactions

Most of the students* became interested in our lecture.



*Sample = 140 students

Realizations

Good point: Uniqueness of the experiment.

It was the first time for students to create new type of solar cell. Several students interviewed us regarding this.

Room for Improvement: Time management for the experiment.

During the first class, we did not have enough time to explain about the material used in our experiment in detail.

Lesson of Japanese Culture 【ORIGAMI】

Objectives of this Lesson

In this lesson, each student was expected to:

- Trace the possible origins and early uses of ORIGAMI; and
- Identify how ORIGAMI is still used in daily activities and in designing modern-day technology.



Flow of this Lesson

Time Allotment	Activity	Images
10 min	Introduction -The origin of ORIGAMI -ORIGAMI and ORIGATA	
10 min	Development -How ORIGAMI evaluated. Shift from ORIGATA to ORIGAMI	
15 min	Making ORIGAMI	Chiyogami 千代紙 Newspaper 新聞紙
10 min	Conclusion -ORIGAMI in daily lives and modern technology	

Teachers' Activities

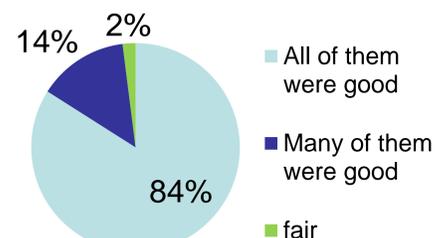
- Prepared large papers for making KABUTO.
- Made the discussions as interactive as possible.
- Let the students infer on practical uses of ORIGAMI.

Students' Reactions

2% gave us "fair" evaluation. This 2% seemed to already have experienced making ORIGAMI.



*Number of students???



Realizations

Good point: Availability of two types of papers (chiyogami and newspaper). Students were able to wear the KABUTO they made. They were also informed about the Japanese ancient way of playing.

Room for improvement: Chosen craft for origami. ORIGAMI was so popular; some students already knew how to make KABUTO.