

様式 A-1
(FY2024)

2024 年 10 月 15 日

サイエンス・ダイアログ 実施報告書

1. 学校名・実施責任者氏名: 滋賀県立彦根東高等学校 教諭 江口明孝
2. 講師氏名: 京都大学高等研究院 Dr. Weal Geoffrey
3. 講義補助者氏名: 京都大学大学院 工学研究科 博士課程後期 3 年 小原 勇輝 様
4. 実施日時: 2024 年 10 月 10 日 (木) 15 : 30 ~ 17 : 00
5. 参加生徒: 1 年生 26 人、 2 年生 2 人、 3 年生 0 人 (合計 28 人)
備考: (例:理数科の生徒) グローバルサイエンスコースの生徒
6. 講義題目: 半導体・光物性および原子物理について
7. 講義概要: 液体の物質が粘性になる過程に関する化学的説明の講義および液体の混合によるスライム作成の実験
8. 講義形式:
☒ 対面 ・ ☐ オンライン (どちらか選択ください。)
 - 1) 講義時間 80 分 質疑応答時間 10 分
 - 2) 講義方法 (例:プロジェクター使用による講義、実験・実習の有無など)
プロジェクター使用による講義およびスライム作成の実験
 - 3) 事前学習
有 ・ ☒ (どちらかに○をしてください。)
使用教材
9. その他特筆すべき事項:

Form B-2
(FY2024)
Must be typed

Date (日付)
11/10/24 (Date/Month/Year:
日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ 実施報告書)

- Fellow's name (講師氏名): Geoffrey Weal (ID No. P23753)

- Name and title of the lecture assistant (講義補助者の職・氏名)

Mr. Yuki Ohara

- Participating school (学校名): Shiga Prefectural Hikone Higashi High School

- Date (実施日時): 10/10/2024 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

Rational Design of Materials with Computers

- Lecture format (講義形式):

◆ ☒ Onsite ・ ☐ Online (Please choose one.)(対面 ・ オンライン)((どちらか選択ください。))

◆ Lecture time (講義時間) 80 min (分), Q&A time (質疑応答時間) 10 min (分)

◆ Lecture style (ex.: used projector, conducted experiments)

(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))

Presented slide show and conducted experiments with student participation

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

The majority of my lecture was spent doing an onsite experiment involving making hydrogel materials. In my experiment, we made different types of slime using PVA and Borax (a type of hydrogel see here for more details: <https://www.cmu.edu/gelfand/lgc-educational-media/polymers/polymer-architecture/polyvinyl-alcohol-slime.html>). I spent the first 15 minutes talking about where I am from and what I did during my PhD and my current postdoc at both Victoria University of Wellington and Kyoto University. I explained to the students why I personally am doing the research I am doing. While the students were first very receptive to my background where I made jokes, I found that there was likely a language barrier when talking about my research, or that I was being too technical. I expected this, so for the rest of my lecture we did the PVA & borax slime experiment.

This experiment went very well and I got very good discussion happening between the students. The students had fun making slime and they could remember the lecture by taking home a bouncy ball of their slime inside a balloon. See attached photos of the students making slime below

Note: Photos not to be used for public use or social media without permission from the school. Photos are only for this report.

The students responded very well to the experiment and were fully engaged in the experiment for the rest of the lecture. I was able to explain the science behind the experiment and they could understand what was happening with Mr Yuki Ohara as a translator. We had so much fun that we ran over time by 15 minutes as the students were having fun playing with their slime and for cleaning up the lecture room. The students were also able to take their slime home in balloons as bouncy balls. This is safe and the chemicals are non-toxic. This allows for the students to take home something from the lecture to remember the lecture by, and hopefully engrain in their minds positive thoughts about going into science themselves at university.

Overall, the experiment went very well and had the students engaged in the science. After the lecture the students returned to the lecture theatre to thank me again for the experiment. I believe the students left the lecture with the impression that science is fun and career in science can be very fruitful.

◆Other noteworthy information (その他特筆すべき事項):

For this lecture I knew that the language barrier would be a challenge going into the classroom. It was particularly hard to interact with my audience, read their body language, and ask questions to the students during my talk as I had to heavily rely on my translator. Realising this could be a problem beforehand, I chose to focus on showing what we can do in materials science by performing a materials science experiment. By doing this, I did not have to speak much English and instead let the science experiment impress the students.

- Impressions and comments from the lecture assistant (講義補助者の方から、本プログラムに対する意見・感想等がありましたら、お願いいたします。):

I received very positive responses from the students and teachers in the classroom about the science experiment. I was told by their English teacher that it was the first time the students had laughed at a joke spoken in English. I received positive feedback from the teachers about the experiment and received further positive feedback the day after from the English teacher via email.