Web 掲載用

SD4640

※弊会記入欄

（学校用）

様式 A-1

(FY2025)

2025 年　8月　5日

サイエンス・ダイアログ　実施報告書

1. 学校名：希望ケ丘高等学校

2. 講師氏名：Joao Filipe PAPEL

3. 講義補助者氏名：

4. 実施日時：　2025 年　7月　29 日（火）　10：00　～　12：00

5. 参加生徒：　１年生　５人、　２年生　１人、　年生　人（合計　６人）
   備考：（例：理数科の生徒）

6. 講義題目：すべての学生が学べる世界を作る—AI と IoT とともに

7. 講義概要：

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　90 分　質疑応答時間　30 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）
      電子黒板使用による講義
      AI を利用した活動（言語の日本語、英語訳）有
   3) 事前学習
      □有 ・☑ 無 （どちらか選択ください。）
      使用教材：

9. その他特筆すべき事項：

For Web posting

SD 4640
※弊会記入欄

Form B-2
(FY2025)
Must be typed

Date（日付）
19/08/2025 （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）: PAPEL Joao Filipe （ID No. P24750）

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

- Participating school（学校名）: Kibogaoka Senior High School

- Date （実施日時）: 29/07/2025 （Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
Building a World where Every Student can learn with Ai and IoT

- 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） 105 min（分）, Q&A time（質疑応答時間） 15 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））
Used Projector and Prototype Live Demo

- Lecture summary（講義概要）: Please summarize your lecture within 200-500 words.
This lecture introduces students to the transformative potential of Artificial Intelligence (AI) and the Internet of Things (IoT) in creating inclusive and equitable education systems. The session highlights how advanced technologies can address persistent global educational challenges.

The lecture begins by situating the students in the context of global education disparities. Students explore the dominance of English in open educational resources, with over 90% of materials produced in English, yet only a small percentage of the world's population are native speakers. This raises the critical question: how can children and youth in developing countries, especially those who do not speak English, access quality education?

Building on this, the lecture engages students with interactive questions about disability, showing that one in six people globally live with some form of disability, and that over one billion people worldwide face accessibility challenges. These facts lead to further research questions: How can we support blind or colorblind students? How can deaf students or those with speech difficulties

fully participate in learning?

Through these inquiries, the lecture emphasizes the role of AI-driven solutions and IoT-enabled devices. For example, IoT platforms using affordable Raspberry Pi computers can deliver educational content offline in rural areas without reliable internet access. AI can provide adaptive features such as real-time text-to-speech, speech-to-text, and customizable visual displays. These tools make education more accessible not only for students with disabilities but also for learners from linguistically and geographically diverse backgrounds.

The lesson then moved to a live demonstration where students tried the prototype technology to experience the potential of the proposed solution, even though it is still in its initial stage. We successfully demonstrated breaking the language barrier in education by using the app to translate Japanese audio questions from the students into a synthetic AI voice in English, and my English answers into a synthetic AI voice in Japanese, allowing students to understand my responses in real time.

By fostering curiosity and inclusivity, AI and IoT can help build a future where no student is left behind, directly contributing to the Sustainable Development Goals (SDG 4: Quality Education, SDG 10: Reduced Inequalities, and SDG 11: Sustainable Cities and Communities).

Ultimately, this lecture inspires students to imagine how they themselves can become innovators, problem-solvers, and leaders in creating a more inclusive and sustainable world through science and technology.

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

- 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。）:


Q&A
HIBOGAOKA
HIGH SCHOOL