Plurilingualism, STEAM, and Chocolate as an Intercultural Approach to Learning: An Integrative Curricular Design in an Elementary School in Japan

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with the collaboration of Yuki Kitano
Language in Japanese Elementary Schools
The Japanese context: **Double Monolingualism**

- **Japanese**, the domestic language: “Everyone can use Japanese”
- **English** is the international language: “Wouldn’t it be great if Japanese could use English?”

**But, the reality in elementary schools is changing...**

① Pupils: Increasing numbers of non-Japanese learners
② Teachers: Increasing linguistic diversity in language teachers
③ Collaboration between language & disciplinary teachers
Table 1. Foreign mother tongues in Japanese schools (MEXT, 2017)

<table>
<thead>
<tr>
<th>Language</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portuguese</td>
<td>25</td>
</tr>
<tr>
<td>Chinese</td>
<td>24</td>
</tr>
<tr>
<td>Tagalog</td>
<td>18</td>
</tr>
<tr>
<td>Spanish</td>
<td>11</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>English</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Korean</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>12.6</td>
</tr>
</tbody>
</table>

Disconnect between language policies and linguistic realities
Reinforcing the notion that English is the only important foreign language.

Neglecting other linguistic resources that children might encounter or possess in the classroom or outside of school.

**Policy**

2018 Course of Study

“In principle, English”

“Foreign language” made compulsory (Grades 5-6)

“Foreign language activities” brought forward (Grades 3-4)

**Social Reality**

Increasing social recognition of linguistic diversity

Olympics – public use of languages

Interest in plurilingualism (in education)
A grassroot approach to collaborative, investigative and inclusive teaching
A Grassroots Project around a Science of Chocolate

Shino Abe（Private Elementary teacher）came up with a project involving cacao beans, and connecting them with young learner education, which she has implemented since 2016.

Intersecting plurilingualism with disciplinary knowledge/STEAM
### Outline of the Practice in 2019-20

<table>
<thead>
<tr>
<th>Class hours</th>
<th>Outline: 5th Graders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Look at, touch and examine real cacao beans. Come up with questions.</td>
</tr>
<tr>
<td>2</td>
<td>Out-loud reading of a chocolate picture book. Begin research on questions from the prior period using books and iPads.</td>
</tr>
<tr>
<td>1</td>
<td>Research how to make chocolate from cacao beans.</td>
</tr>
<tr>
<td>2</td>
<td>2 classes together make 8 groups, discuss cooking utensils and ingredients.</td>
</tr>
<tr>
<td>2</td>
<td>In groups, find a recipe, and make chocolate.</td>
</tr>
<tr>
<td>1</td>
<td>Class hosted by an external company: “Thinking about international cooperation through chocolate”</td>
</tr>
<tr>
<td>4</td>
<td>Make presentation materials (in groups).</td>
</tr>
<tr>
<td>1</td>
<td>Each group presents what they have learned to 4th grade students, and reflect on the lessons.</td>
</tr>
</tbody>
</table>

- 5th grade students (10—11 years)
- 2 classes, 78 students
- **Culinary workshops shared with 9th grade classes**
Integrated/multilevel learning

5th grade

Who produces the most cacao?

West Africa produces 70% of the world’s Cacao

Countries ranked by cacao bean production

Every purchase is a vote/Voting with your wallet

Changing society through consumer choice

9th grade
Connections with class content/linguistic

Do you remember this logo?

Let’s actually make chocolate from cacao!
1. Students learn more effectively when they can draw from their **entire repertoire** and **funds of knowledge** (Gonzalez et al., 2005) and are active participants in their own learning.

2. **Participation** is achieved when concepts and procedures are introduced through an **investigative approach** and are connected to students’ **prior knowledge** in meaningful ways.

3. Bi-plurilingualism is a tool and an **asset** for knowledge construction.

4. **Plurilingual Interaction** creates a favorable framework and brings in new tools for the **construction and problematization** of knowledge.
I was surprised to learn chocolate is made from cacao beans. I learned that even now, there are some places where children work. I felt chocolate tastes better [now].

When we made the chocolate, it had a (strong) smell of bitter chocolate. After researching, I learned that Ghana is a country that produces a lot [of cacao], and that in some places in the world there are children who aren’t able to study, and I learned that “child labor” exists. I felt that it was really tough for children in Ghana to make the sweet chocolate that is being sold.

Through making chocolate, I learned that the chocolate I often eat is that hard to make. I was shocked to learn that we, who don’t make chocolate, eat it, but the small children who make the cacao don’t get to eat it.

I learned that many cacao farmers are children working as child labor.

(Children’s reflections from Yuki-sensei class, translations D. Pearce)

4. **Plurilingual Interaction** creates a favorable framework and brings in new tools for the construction and problematization of knowledge.
Using Google Translate on iPad

Students in groups collaborate to translate English recipes into better Japanese
I think it’s amazing, but there were some mistakes.

There were some things it couldn’t translate properly.

It wasn’t able to read some characters.

We have to think about how we can use it.

Won’t interpreters lose their jobs?

If we use camera input, we don’t know the meaning of the individual words.
Making Chocolate

9th Grade

5th Grade
• can open the space to explore what diverse learners believe and how they talk about STEAM-related content and lived experiences in different social environments and cultural spheres.

• It encourages Multiperspectivity (the ability to adopt different perspectives around knowledge building) and

• Reflexivity (the ability to distance oneself from experience and critically analyse its meaning), crucial in developing plurilingual and intercultural awareness.
References

阿部志乃 (2017)「チョコレート・プロジェクト-チョコレートから世界の現実に目を向ける力を養成する外国語学習 - 」『複言語・多言語教育研究』第 5 号, 69-78.
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Slides available online

Slides available on ResearchGate
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Appendix: Preparatory Study Materials
Chocolate Quiz

A ヤシの実
B パパパイヤ
C カカオの実
D アボカド

Caacao fruits
In chocolate consumption per person, Japan is around 20th in the world, but in total volume, it’s 4th!!
Preparatory Study Materials: Social Studies

Where does Japan get most of its cacao?

Japan imports most of its cacao from Ghana (83%)
What’s this?
- touch it
- smell it
- shake it
- scratch it
- bite it etc.

Use your five senses!

What food is made from cacao?
① Coffee
② Chocolate
③ Yōkan (Japanese sweet)
Who started eating cacao? When?
① Chocolate
② Sweet drinking cocoa
③ Bitter cacao/corn powder drink

Which one is the cacao flower? (cacao, banana, mango)

Who produces the most cacao?
① Ghana
② Indonesia
③ Côte d'Ivoire
Preparatory Study Materials: Social Studies

Cacao producing latitude

Etymology of “cacao”

Export process
Preparatory Study Materials: Social Studies

Do you remember this logo?

Export/Purchasing process

Let’s actually make chocolate from cacao!