Translanguaging as a scaffolded practice

by Slamet Setiawan

Translanguaging as a Scaffolded Practice in a Primary School Content and Language Integrated Learning Context During the COVID-19 Pandemic

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Abstract: Translanguaging enables students to communicate in multiple languages in an English-dominant classroom. It has received considerable attention from scholars in content and language integrated learning (CLIL). Its implementation in primary schools in European countries has been adopted in Asian countries, including Indonesia. This study employed a narrative inquiry investigating a teacher who taught first graders both content matter and English during the COVID-19 forced-remote learning. Furthermore, data were gathered using semi-structured interviews to guide the participant in narrating CLIL science teaching experiences. Virtual observations were carried out eight times to obtain evidence of translanguaging practiced. Due to forced-remote learning, the results indicated that the teacher had to find the most convenient ways to instruct the young students without adding to their burden. Furthermore, it was reported that scaffolding by translanguaging was planned systematically by valuing the students' L1 and alternating it with English as the target language. The findings also discussed the practical implications of this study to maintain young learners' (YLs) engagement through translanguaging strategies.

Keywords: Content and language integrated learning, pandemic, primary school, scaffolding, translanguaging.

Introduction

Introducing English to young learners (EYL) has recently gained popularity for a variety of reasons, including the belief of preferably learning another language at an earlier age, the need to be accepted as a global workforce in the future, and parents' expectations of children benefitting from the new world orders (Garton et al., 2013; Lestariyana & Widodo, 2018; Nguyen, 2011). EYL is programmed as a compulsory or elective subject in most non-English speaking countries to introduce pupils to a required additional language at the middle/secondary school level in Myanmar, Malaysia, Thailand, Korea, China, and Laos (Butler, 2015; Kirkpatrick & Liddicoat, 2020). Meanwhile, English is introduced as a locally-tailored school subject in Indonesia without legislated or nationally authorized curriculum regulations (Sulistiyo et al., 2019). Almost all Indonesian primary schools offer English as a non-compulsory subject to provide young learners (YLs) with an initial contextual experience (Lestariyana & Widodo, 2018).

Due to the current policy of teaching EYL in Indonesia, teachers can design their materials based on the students' needs or the schools' objectives for incorporating English into the curriculum. As a result, it is taught in a modest time, 1-1.25 hours per week, with limited exposure. The content and language integrated learning (CLIL) approach is applied when the subject is taught longer, within 50% or more of the total time of the curriculum. The "soft" CLIL approach integrates a theme into language teaching (Jenkovic & Cvetkovic, 2012). Ellison (2019) also specified it as "hard" CLIL when it is related to a content-driven intention. Since CLIL involves dual focuses on content and language, it requires a qualified teacher's knowledge of planning the most appropriate learning program (Rixon, 2019; Shin & Crandall, 2014), which is relevant to the YLs' development pattern, temperament, motivation, and interest (Pinter, 2011).

Hard CLIL provides space for YLs to learn the content from activities that arise their curiosity and desire for discovery, generating a learning momentum (Ellison, 2019). The concept gained popularity in Asian countries in the early 2000s and demonstrated students' English language improvement, as well as their confidence and constructive skills in L2 (Prasongporn, 2009; Tsuchiya & Perez Murillo, 2019; R. Wei & Feng, 2015; Yamano, 2013; Yang, 2015). Vigorous

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activities and suitable materials facilitate students to build their learning comfort in negotiating language, content, and management (Lin & He, 2017; Mehisto, 2012) and attain a sufficient balance of cognitive and linguistic demands before and during lesson delivery in YLs' CLIL classroom (Ellison, 2019). In addition, scaffolding plays an essential role in teaching subject matters, including science (Mehisto & Teresa Ting, 2017), to bridge the gap between what YLs can do personally or requiring the assistance of a qualified adult – Vygotsky's zone of a proximal development (ZPD). Fernández-Fontecha et al. (2020) recommended the use of language-related scaffolding techniques as well as multimodal scaffolding techniques that combine language with visual resources.

Duan and Liu (2017) asserted that scaffolding is one of the critical aspects of applying CLIL in YLs' classrooms. It exemplified the English phrases and sentences used by the teacher and the learners related to the science topic. Fernández-Fontecha et al. (2020) synthesized language scaffolding from previous CLIL studies, focusing on linguistic scaffolding strategies such as rephrasing, recasting, cue elicitation, and translanguaging. The emerging CLIL research was focused on the multimodal scaffolding resources such as gestures, pointing, or visuals for CLIL learning media. According to Evnitskaya and Berger (2017), the learning media is additional property when a teacher applies linguistic scaffolding. Therefore, effective scaffolding requires skills development for pair work, cooperative group work, asking questions, debating, chatting, enquiring, thinking, and memorizing (D. Coyle, 2007). Teachers can practice all skill development by considering Ellison's (2019) taxonomy of scaffolding strategies for YLs' CLIL lessons, integrating aspects such as planning, materials, and delivery of lessons.

Seminal studies empirically convinced that translanguaging is a strategic scaffolding to be planned in providing the flexibility to use various languages, supported by multimodalities in the semiotic system (Fernández-Fontecha et al., 2020; García & Wei, 2015; Nikolov & Mihaljević Djigunović, 2019; Rixon, 2019; Williams, 2020). Translanguaging refers to a communicative language function of accepting the input in one language and producing output in another (Zein, 2019). It permits bilingual students to bring their native language to class and alternate with the L2. It also engages participants, promotes the recognition that all languages are required to convey and negotiate meanings, and aids in completing tasks by simultaneously learning literacies (Cenoz & Gorter, 2019; Yamano, 2013). Additionally, Lin and He (2017) emphasized the benefits of learning from various resources in different languages to hone students' skill in negotiating meanings in CLIL classes. In the same setting, Y. Coyle and Roca de Larios (2020) witnessed the students' ability to relate different terms used in CLIL class with their background knowledge. The previous study conducted by Setyaningrum et al. (2020) in a similar setting demonstrated that translanguaging scaffolds first graders in CLIL science class within the context of forced remote learning.

Besides its benefits that have been reconnoitered, translanguaging can potentially weaken the students' L2 production (Norman, 2012). Students are not entirely exposed to or promoted to produce a mere L2 in their classroom. In addition to the potential demerit towards L2 acquisition, translanguaging has been detected to threaten the development of minority languages (Cenoz & Gorter, 2017) due to students' flexibility in mixing their language repertoire. Therefore, as the most influential actor in the teaching and learning process, CLIL teacher is allowed to conduct language intervention to increase students' participation and access to both class content (Allard, 2017) and L2. Despite its drawback and threat, translanguaging can be reduced when YLs are progressing to be more proficient in their L2 (Lewis et al., 2012).

Following the closure of schools due to the COVID-19 pandemic, students' engagement is one of the critical challenges in forced-remote learning. This issue emerged because the shift from the in-person learning method to online has challenged the teachers to gain educational resources, provide high-quality instruction, as well as care for and support students (Adedoyin & Soykan, 2020; Affouneh et al., 2020; Bozkurt & Sharma, 2020). This situation indicates the forced-remote teaching and learning process has to focus on therapy, empathy, and care rather than purely learning (Bozkurt & Sharma, 2020). In addition, Xie (2020) projected the students' engagement in remote context emphatic design, focusing on behavioral, cognitive, emotional, and social dimensions. These dimensions can be linked to the CLIL 4Cs framework (D. Coyle, 2007), which focuses on the interdependence of *content* (subject matter), *communication* (language), *cognition* (learning and thinking), and *culture* (social awareness of self and 'otherness'). By considering the dimensions for engaging the students in forced-remote education and the CLIL 4Cs framework, Duan and Liu (2017) promoted the effort of engaging YLs in the learning situation by offering exciting topics, arousing their interest and motivation for learning.

In the case of Indonesia, flexibility in integrating English in the primary school curriculum and the evidence of advantages of using the CLIL approach by synergizing the national curriculum and international framework have motivated some primary schools to offer the international class program (ICP) or Cambridge international program (CIP). This program is endorsed by international educational agencies such as Cambridge assessment international education (CAIE). The current internationally-tailored school has promoted the use of English as a medium of instruction without putting the learners' L1 aside.

Based on this brief review, scaffolding by translanguaging (Fernández-Fontecha et al., 2020; Lin & He, 2017; Yamano, 2013) is urgently needed for YLs' language learning in various settings (Nikolov & Mihaljević Djigunović , 2019; Rixon, 2019), even during physical closure of schools due to the COVID-19 pandemic. Teachers should also examine translanguaging and multimodal resources to be adequate for this emergency. However, there is limited information on how Indonesian CLIL primary school teachers struggle to practice translanguaging as scaffolding for teaching science.

This current study investigates a CLIL science teacher's experiences in using translanguaging as the learning scaffolding for teaching YLs in an Islamic primary school in East Java Province, Indonesia, during the COVID-19 pandemic.

Methodology

Research Design

This narrative inquiry invited the participant to narrate the experiences of employing translanguaging to scaffold YLs' learning in the English-mediated science classroom. Clandinin and Huber (2010) recommended this design to comprehensively study the people's lived experiences, including feasibilities in their future life. Haydon et al. (2018) and James (2018) convinced that they could explore different views about reality, knowledge, experience, and context through the collaboration of researchers and participants within temporal, social, and spatial frameworks.

Context, Participant, and Data Collection

This study was conducted in a grade one CLIL science class of a well-known private Islamic school in Surabaya – East Java province – Indonesia. Cambridge international program (CIP) was termed as the school's internationally-tailored program to elevate the graduates with international experience in learning subjects such as English, mathematics, and science. The participant of this study is an "*ustadzah*" (an Arabic predicate for a female teacher) of CIP (UCIP). She is a female homeroom teacher for grade one, assigned to teach the thematic lesson as well as science, mathematics, and English to 28 students. She has been teaching science using English for two years, with additional experience in teaching thematic lessons for more than 12 years. Her educational background in English and primary school education confirmed the level of professionalism.

The students in the participant's classroom are educated by synergizing the Indonesian national and Muhammadiyah curricula. Specifically, the Muhammadiyah curriculum includes Islamic teaching, Muhammadiyah studies, character-building, and Arabic. Moreover, the students obtain extra experience and knowledge compared to other students at ordinary primary schools due to the integration of the international curriculum. They obtain more exposure to Bahasa Indonesia as the national language, as well as Arabic and English. Unlike Arabic, English is taught as a subject and a language of instruction for learning science and mathematics. As a result, the teacher adapted translanguaging as a learning scaffold when using English to teach content subjects during the COVID-19 pandemic.

In-depth interviews were conducted to obtain data about the teacher's experience in scaffolding the students' learning by translanguaging. As the primary instrument of this study, the interviews were carried out three times from November 2020 – May 2021. The first interview was to delve into the participant's life history and past experiences. It was guided by questions about educational background and teaching experience before becoming a homeroom and thematic teacher, as well as a CLIL science, mathematics, and English instructor. The second interview focused on the participant's present life experiences, which included frequent use of English or Bahasa Indonesia, how to use multilingual resources, activation of students' creative thinking skills, learning motivation, as well as learners' ethics and cultural identities. The last interview involved the participant's reflection on the meaning of her experience. The first and the third interviews were conducted using WhatsApp chatting, while the second interview was conducted synchronously using Zoom.

The questions were adapted from Li and Zhang's analysis (Li & Zhang, 2020) and modified with previous research suggestions related to translanguaging for teaching subjects with the CLIL approach (Gorter & Arocena, 2020; Lin & He, 2017; Nikula & Moore, 2016; Wang, 2019) to gain comprehensive information. Multiple meetings between the researchers and the participant and their close relations result in the depth and richness of the data (Clandinin & Huber, 2010; Haydon et al., 2018). Besides the interviews, observation is also suggested for narrative inquiry data collecting (Clandinin & Huber, 2010). This study employed virtual observations to obtain evidence about translanguaging from the teacher and students' linguistics repertoires and supporting multimodalities (Daniel et al., 2019; Fernández, 2019; Jonsson & Blåsjö, 2020; Nikolov & Mihaljević Djigunović , 2019). The observations were carried out five times, from November 2020 to May 2021.

Data Analyzing

To deal with the data from the in-depth interviews, Widodo (2014) recommends procedures for analyzing the data by multiple listening to the interview recordings, transcribing them, note-taking, and codifying the data. Meanwhile, interactions in virtual classes, including the delivery of instruction, student work, and assessment, were observed and audio-visually recorded. Field notes were taken, and the audiovisual recordings were based on the teacher's and students' linguistic repertoires and multimodalities to demonstrate translanguaging activities in the CLIL science classroom. In addition, the data collected by the two instruments were analyzed thematically (Braun & Clarke, 2006; Clarke & Braun, 2013; Maguire & Delahunt, 2017) to generate emerging themes quickly.

There are six steps proposed by Braun and Clarke (2006), Clarke and Braun (2013), and Maguire and Delahunt (2017), namely; (1) Become familiar with the data, (2) Generate initial codes, (3) Search for themes, (4) Review themes, (5) Define themes, and (6) Writing-up. The first step was carried out by reading, understanding, and storing the raw data of

the interviews and observations. In step 2, initial codes were made based on the aim of this study, exploring the CLIL science teacher's experience in employing translanguaging as scaffolding in the designated school. Furthermore, specific themes by connecting the data from interviews and observations were drawn in step 3. In step 4, two initial themes were selected: multimodal scaffolding resources and translanguaging strategies for CLIL science forced-remote learning. After selecting the two themes, step 5 was accomplished by connecting extended sub-themes. Within step 6, member checking was executed, and the participant's preferences were written in statements such as *"I select the most appropriate books to support students' learning"*. Finally, the manuscript was finished with valid and reliable data that have been thematized.

Trustworthiness

The findings of this study were validated by member checking, and Birt et al. (2016) proposed that member checking could improve trustworthiness and present unique epistemological, ethical, and resource challenges. According to Nowell et al. (2017), it is carried out to guarantee that the participant agrees with the data extracted. Therefore, the interview transcriptions, observation field notes, and emerging themes were shared with the participant to edit and change the irrelevant responses and contribute to the analysis of the interviews and observations. In addition, the other method of member checking as one of the validation techniques (Birt et al., 2016) was carried out by inviting the participant to verify the accuracy of interview transcriptions and double-check the data from the observations grouped into themes.

Findings

The findings revealed that linguistics scaffolding by translanguaging applied to young learner's classes could not be practiced without multimodal scaffolding resources. The CLIL science teacher's language awareness generated the determination to help students understand science by providing multimodal scaffolding resources to anticipate complex linguistic patterns in science lessons delivered in L2. This awareness is obligatory considering the CLIL science teacher's responsibility to maintain interactions with translanguaging throughout synchronous online learning.

Systematic Planning: Multimodal Scaffolding Resources

"I select the most appropriate books to support students' learning."

UCIP considered the urgency of books to support teaching and learning activities. The teacher used a teacher guide, while students used a book and a workbook. The English-written book was selected for the internationally-tailored class, which had been customized to meet students' needs. Furthermore, UCIP selected a collection of English-written science books because their contents were compatible with the Cambridge primary curriculum and the recent national curriculum of Indonesia.

> *I have to use resources to make learning scaffolding systematic. The selected series of books help me, and my students get the content and language support precisely. The teacher's guide provides macro planning for the semester, including content and language. The student book and workbook guide the students to learn the content autonomously at home with parents or caregivers before they meet me online.* (UCIP, Zoom Interview, November 20, 2020)

The teacher ensured that the learning materials offered by the books serve as content scaffolding, which connects intended learning, students' daily lives, the community, and some other school subjects. They should assist students in understanding how learning works and how it may be applied inside and outside the classroom. For YLs, UCIP selected students' book, which provides target words within the texts illustrated by pictures and drawings. In the workbook, keywords are highlighted, and the tasks should challenge students' critical thinking skills.

> *I am happy with this series of books because they contain pictures the students are familiar with in Indonesian and international settings. Also, two language versions of the glossary highlight the keywords to use in teaching and learning.* (UCIP, WhatsApp interview, December 24, 2020)

The meaning-making images were reworked to be more realistic than the illustrations, hence, YLs can understand specific science concepts through tangible objects. She asserted,

> *I am confident that my students love learning English and science from books. Parents are also happy with the books because of the content and comprehensible language, so they can help their children study before and after the synchronous online learning sessions.* (UCIP, Zoom Interview, November 20, 2020)

UCIP's statement about the learning materials aligns with Monbec's (2020) and Bridsell's (2021) testimonies about the urgency of learning materials and learning tasks for the asynchronous online session before and after the students get together for learning within the synchronous learning platform. Therefore, careful selection of the books for supporting CLIL science forced-remote learning should meet the criterion of providing the non-linguistic modes for aiding the learners' science discourse (Williams, 2020). Moreover, appropriate book selection has met the YLs needs to study more

autonomously due to the time limitation of online synchronous learning. This way, translanguaging can be practiced by students and parents at home to comprehend the texts provided by the books.

"I rely on the lesson summary to highlight key ideas of the lesson."

The teacher can consider language simplification (Ellison, 2019) of materials to be put in a summary when students cannot gain content scaffolding from the selected series of books. UCIP acknowledges summaries as helpful to students, even before the pandemic.

> *I delivered lesson summaries to my students before they entered the classroom. I decided to continue this practice during the pandemic. To compensate for their limited ability to learn language and science materials simultaneously, I provide summaries of lessons in more compact forms, such as infographics or PowerPoint presentations, to be shared with the students a day before the synchronous online class.* (UCIP, WhatsApp interview, November 10, 2020)

UCIP posed at least one related question on the WhatsApp Group to grab students' attention to a specific summary. About 5-7 minutes were spent monitoring students' engagement by waiting for their responses and comments. She clarified,

> *It was uneasy in the beginning. I frequently found no answer or comment to the question I posted. Then, I set the schedule for sharing the summaries to encourage the students' participation in responding to my inquiry.* (UCIP, Zoom Meeting, November 20, 2020)

UCIP's effort in adapting forced-remote learning by providing more adequate forms of summaries was beneficial for the students to prepare their synchronous learning. As the students were ready to learn science through content scaffolding, 45-60 minutes of the synchronous meeting focused on the interactions between student-student, students-teacher, and students-learning materials. Furthermore, UCIP asked simple to graded questions in the synchronous online learning session to foster students' language and content attainment.

"I aim for visuals and audiovisuals content to extend the students' English repertoire."

Based on the nature of teaching YLs English as an additional language (EAL), Nikolov and Mihaljević Djigunović (2019) emphasized the activities focusing on fluency more than accuracy for providing YLs' experience for fundamental communication skills than cognitive academic ones. This study revealed that multimodal resources suggested by Chang and Haugh (2020) such as videos, graphic organizers, mind maps, storyboards, comics, or bilingual notes were utilized to broaden the YLs' language and meaning-making repertoire. UCIP affirmed,

> *I should be creative in equipping my students with English to learn science by visual and audiovisual scaffolding materials. I used PowerPoint presentations and YouTube videos in English to shed light on the concepts of science.* (UCIP, Zoom Interview, November 20, 2020)

UCIP's statement implied that additional effort should be made after the students watched the video to generate their comments and then link them to a participatory activity that they could perform remotely with properties they found at home.

> *I remember one day when I had to explain the concept of Push and Pull. My students and I spent about 5 minutes watching a video from a YouTube channel: https://www.youtube.com/watch?v=ZLDUrPaLQWE and I experienced silence in 20-30 seconds as my students did not say anything to respond to the video. Then, I asked them to move and find a door to practice how to push and pull. As a follow-up, I asked one of my students, "When you open the door, do you push or pull the door?" and she answered, "I pull it," while acting to move her two hands toward herself.* (UCIP, WhatsApp interview, May 13, 2021)

UCIP asserted that moving pictures and static texts to explain the concept of Push and Pull from a video provide an extended opportunity for understanding the science of listening to English explanations, reading the text, repeating the statements, and acting out the particular meaning of movements. Although unable to produce instructional videos, UCIP made use of available YouTube videos by considering the language and content and the appropriateness of the audio and visual. She stated,

> *I found audiovisual powerful for the students' learning. The students could mention the difference between push and pull by repeating the explanation from the video. When I asked, "What does push mean?" they answered, "It means moving the thing away from you" while moving their two hands away from themselves.* (UCIP, WhatsApp interview, May 13, 2021)

He and van Leeuwen (2020) defined audiovisual media as one of semiotic technologies because it integrated technology for meaning-making built into multiple semiotic modes. The teacher's effort in supplying YLs with multimodal activities was a breakthrough in dealing with forced-remote learning. The PowerPoint presentations and videos she used were compelling for students to be enthusiastic about discussing the contents.

Translanguaging Strategies for CLIL Science Forced-Remote Teaching

Some empirical studies have been related to translanguaging in CLIL classrooms for scaffolding, but those seminal studies focused on traditional face-to-face learning experiences (Back et al., 2020; Gorter & Arocena, 2020; Moore et al., 2018; Nikula & Moore, 2016; Shin et al., 2019; Vaish, 2019; Vázquez & Ordóñez, 2018; L. Wei & Yin, 2019). In this current study, the participant employed translanguaging as scaffolding for her YLs' science learning by adapting the practices before the pandemic and adjusting them to the present situation. Furthermore, the creativity and innovation level were increased through a series of adaptations.

> *Translanguaging was the primary scaffolding that I practiced. However, it was not the only scaffolding I could employ, as I discovered that translanguaging should be accomplished with semiotic resources.* (UCIP, Zoom Meeting, November 20, 2020)

Indonesian YLs whose home languages different from the instructional language in class are often reluctant to use the classroom target language. UCIP had to learn from others' experiences to maintain classroom dynamic, specifically within synchronous online class.

"I have to use L1 in addition to L2 proportionally to enhance my students' comprehension."

YLs' engagement in remote learning is critical for mediating their short attention span. They should concentrate on their learning process without being anxious in high-challenge classrooms, which involve high-order thinking skills. Gibbons (2015) suggests a low-challenge classroom with high support from the teacher for their learning comfort. Meanwhile, UCIP believed that alternating L1 and L2 in science class could make YLs more invested in their learning. The explanation is as follows,

> *I wish I could use English more than Bahasa Indonesia in my teaching, but I had to consider using L1 when there was a potential situation that caused my students' misunderstanding. In explaining the concept of Push and Pull, for example, I instructed my students to practice moving the door by pushing and pulling. I said: "Siapa yang biasanya membuka pintu dengan cara menariknya? (Who likes to open the door by pulling it?), pull it? This way." (I pulled the chair in front of me).* (UCIP, WhatsApp interview, December 24, 2020)

UCIP practiced translanguaging with body movements, by which the students could automatically activate their critical thinking skills to understand the concept. It was showcased from the observation that one student claimed about his different applications of push and pull to open and close the door. At the same time, the teacher and the majority of students agreed that the door could be opened by pulling. The following excerpt evidences the claim.

Excerpt 1:

UCIP : Okay students, please tell me an activity of push and pull.

S1 : It is pumping the tire. But I have different ways of opening and closing

   the door.

UCIP : Oh ya? Please tell me more.

S1 : I push the door to open it, and I pull to close it. It is at my house. Yes, here. Look at this door. (S1 showed how he opened and closed the door).

S2 : Lho kok bisa? Kok beda sih? (I don't believe it. How come?) Look, I pull to open my door and push to close it.

UCIP : Well, good points from both of you. Teman-teman, tadi lihat kan? (Everyone could see the difference, no?) S1 and S2 had different experiences in opening and closing the door. You can go back to different doors at your house, bisa pintu rumah atau pintu almari (to your room's door or closet), to check how to open and close them after the class. (Virtual Observation, Zoom, November 5, 2020)

Excerpt 1 presents evidence of a translanguaging strategy to understand a particular concept. Some students' involvement in class activities also increases the comprehension of others. Both teacher and students employed translanguaging linked to objects as well as movements. They utilized linguistic resources and a dynamic flow of collective meaning by involving spatial repertoire as trans-semiotizing (Lin, 2019; Liu, 2020)

" I define a concept in English and encode it on the Zoom's interactive whiteboard."

UCIP's story illustrated that making the students comfortable in using the language in forced-remote learning is one way to bridge a positive learning atmosphere. The meeting platform's facility engaged the students during the learning activities. Figure 1 and 2 show the teacher's handwriting on Zoom's interactive whiteboard, displayed to the students.
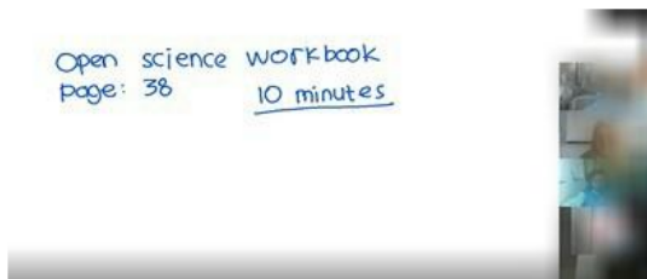
Figure 1. Teacher's Instruction on Zoom's Interactive Whiteboard

Figure 1 demonstrates how UCIP instructed students to open their science workbook to page 38 and complete the assignment in 10 minutes. This was accomplished simultaneously by speaking and writing the words on the whiteboard. The notice reminded students that the instructions could be written on the whiteboard when they had forgotten what to do. The reminder attracted students to ask further questions such as *"Boleh kurang dari 10 menit mengerjakannya Ustadzah? (Can I make it before 10 minutes?)"* or *"Workbook itu buku yang gambarnya cewek kan? (Which book? Is it the one with a girl picture)"*.

In addition to instruction, UCIP created the instructional materials on the interactive whiteboard. For example, when discussing parts of a plant, students were challenged to name one part of a plant on the whiteboard. They activated Zoom's annotate feature to write a word corresponding to the image.

Figure 2. Teacher's and Students' Interaction Using Zoom's Interactive Whiteboard

From figure 2, students' engagement in the class has been facilitated by technology. Moreover, both language and content aspects were strengthened when the teacher provided corrective feedback about the English spelling as well as accuracy in naming the part of plant, as presented in the following excerpt.

Excerpt 2:

    UCIP   : Yes, it is the stem. Lihat yang ditunjuk oleh tanda panah (Look at the one pointed by the arrow), please. Bukan semuanya dari atas sampai bawah ya. (Focus on this part, not all of the plant's parts). Okay. Now, spell the word "stem".

    Ss   : s – t – e – m

    UCIP   : Good job. The stem carries water, minerals, and food prepared by leaves to different parts of the plant. (While moving the pointer to all parts of plant) Ke sini, ke seluruh bagian dari tanaman (to all parts of a plant). (Virtual Observation, Zoom, February 2, 2021)

"I read an English version of Indonesian folklore and link it to the science lesson."

For providing YLs' contextual use of English, UCIP selected a story related to the science topic for a reading-aloud activity. In addition, to bridge the students' knowledge about *Growing Plant* topic and Indonesian culture, folklore entitled *Timun Mas* (Golden Cucumber) was selected. *Timun Mas* is a famous Indonesian folklore that the students have been familiar with and told in Indonesian. Figure 3 explains how the reading-aloud activity was carried out.

Figure 3. The Students' Connected Knowledge about Growing Cucumber from the Folklore with Science

Figure 3 explains how UCIP displayed a text in English and illustrations to describe the story's plots. The students were involved in the activity by reading parts of the story, asking questions and answering the teacher's questions. From the observation, one student initiated to get the cucumber from the kitchen to show the class. This situation provoked extended discussion and affected prolonged learning session, as in excerpt 3.

Excerpt 3:

UCIP	*: S1, please read the title.*
S1	*: The Story of Timun Mas (Golden Cucumber) Indonesian Folklore.*
UCIP	*: Okay, thank you. I will continue reading the story. Once upon a time, not far from a jungle, lived a husband and wife. But they still did not have a child yet… (End of the story). What plant do you see from the story?*
Ss	*: Cucumber.*
UCIP	*: That's right. Cucumber.*
	(One student took a cucumber and showed it to her teacher and friends.)
	S2, did you take a cucumber?
S2	*: Yes, a cucumber. Do you want to see it?*
UCIP	*: Of course. Coba izin ke mama untuk memotong (Please ask your mother to cut) the cucumber.*
	Any of you like cucumber?
S3	*: I like it but my little brother doesn't.*
UCIP	*: Okay, we have a cucumber, now. What do you see inside it?*
Ss	*: Seeds.*
UCIP	*: That's right. What do you remember about the seeds in the story?*
S2	*: Itu lho, mbok Sarni dapet seeds untuk ditanam jadi timun. (Mbok Sarni got the seeds to plant the cucumber.)* (Virtual Observation, Zoom, February 25, 2021)

Figure 3 and excerpt 3 clarify how UCIP activated the students' semiotic repertoires. As learning scaffolding, translanguaging/trans-semiotizing was practiced by both the teacher and students for meaning-making. Scaffolding was practiced by letting the students use the language they are good at (Espinosa et al., 2016; Shin, 2006) and by employing visual stimuli (Ellison, 2019).

"I act out to clarify my explanation."

The other strategy employed was action (acting out) as one of the semiotic resources. Acting out is performing a specific activity to provide students with real-world examples of a particular scientific concept. The teacher plays a video of animal movements for the 'How the Animal Moves' topic. The following figure is an example of the activity.

Figure 4. Observing Animal Behavior while Listening to, Singing, and Moving along the Animal Song

Figure 4 depicts how UCIP followed the animal movements, where students were instructed to move their bodies along the video. They were frequently reminded to move such as monkeys, elephants, tigers, and some other animals. As a follow-up, she explained different animals and their movements by translanguaging/trans-semiotizing, alternating the language use, and linking the explanation with the movements. It was reported that movements are advantageous during forced-remote learning since students rarely move physically because of some distancing restrictions during the COVID-19 pandemic.

Discussion

CLIL teachers for YLs have to consider the learning program that demonstrates English language improvement, including confidence and constructive skills in L2 (Prasongporn, 2009; Tsuchiya & Perez Murillo, 2019; R. Wei & Feng, 2015; Yamano, 2013), as well as the development of their pattern, temperament, motivation, and interest (Pinter, 2011). Myriad empirical studies have been carried out to orchestrate YLs language and content learning in a face-to-face mode of delivery (Back et al., 2020; Gorter & Arocena, 2020; Moore et al., 2018; Nikula & Moore, 2016; Shin et al., 2019; Vaish, 2019; Vázquez & Ordóñez, 2018; L. Wei & Yin, 2019). Referring to previous studies, the participant could adapt the face-to-face activities to forced-remote learning by considering the students' current characteristics. She believed in the urgency of exposing the activities that allow flexibility in language use because YLs should come to virtual classes with little experience in using English to communicate the science content. Therefore, the activities were adapted to prepare the multimodal scaffolding resources to support the learning activities in the virtual classroom and used translanguaging for meaning-making as explored by Setyaningrum et al. (2020). The books used by the teacher and students in the previous study were written in entirely in English and presented on the platform screen with dialogic reading to provide English language exposure while learning the content. However, in this current study, multimodal resources were utilized and mixing English with Bahasa Indonesia to amplify the students' comprehension.

With translanguaging for first graders and beginners of English, the teacher has innovated language scaffolding to facilitate students' comprehension of complex science concepts. In addition, translanguaging is related to the EYL teaching principle of using continuous and collaborative scaffolding (Mehisto, 2012) by translanguaging/trans-semiotizing (Chen et al., 2021; Liu, 2020; Setyaningrum et al., 2020). It has enhanced the students' engagement in all activities because students are not restrained to use English entirely to learn the science content and interact with the teacher and classmates, considering their limited vocabulary and content mastery.

Classroom activities should not demotivate students' participation to make the learning joyful, meaningful, and engaging. The entire use of English as the language of instruction will hinder students' active participation due to their limited ability to produce English utterances. Yamano's previous study (2013) is closely related to the efforts to make CLIL science learning joyful and meaningful without burdening students. The teacher's example of alternating languages in an English-mediated classroom has inspired students to do the same to reduce the workload. During the synchronous forced-remote learning, it was affirmed that the teacher and students interacted communicatively by mutual translanguaging. Students understood the language(s) they used orally, but only English was used to complete their CLIL science tasks. Fernández-Fontecha et al. (2020) urge that translanguaging should be implemented to meet the learning objectives and the existing class situation.

For synchronous online learning, the participant of this study reiterated kinesthetic activities practiced during face-to-face classroom to forced-remote learning with some adaptations. This is the extended endeavor from a similar study conducted by Setyaningrum et al. (2020) which revealed that parents reported their children's boredom in remote and virtual learning because of limited kinesthetic activities. Kinesthetic movements are possible to be performed only when students can follow clear and comprehensible instructions from the teacher. As for beginner learners of English, some movements to foster science concept comprehension require translanguaging/trans-semiotizing of instructions. It is

unavoidably necessary that students perform the actions and at the same time utter the name of the science-related movements they are acting out. Moreover, they are trained to produce English as a target language in the classroom and espouse their English expressions with appropriate body movements and gestures to invigorate their interlocutors' comprehension. What the teacher in this current study practiced is closely related to a thoughtful attention to the students' therapy and empathy for their sedentary boredom, as well as care for their limited language production as proposed by Bozkurt and Sharma (2020) to maintain students' engagement in demanding instructions (Affouneh et al., 2020; Monbec, 2020).

Conclusion

Translanguaging as scaffolding for forced-remote CLIL teaching to YLs through the synchronous and asynchronous modes of delivery has challenged the participant's creativity to perform extra preparations as well as necessary teaching strategies. YLs may fall back on L1 because of the given opportunity to use it in alternation of entire English as a target language in the classroom. The students can use L1 to interpret the teacher's explanation and answer the questions formulated in English. The teacher utilized L1 to provide an extended explanation to avoid the students' misunderstanding the content they are learning. However, translanguaging cannot solely be practiced without multimodal scaffolding resources to illustrate the learning materials of science. Forced-remote learning is an emergency that permits the teacher to count on multi-semiotic resources to enhance the learners' agencies (Chen et al., 2021).

The findings of this study contribute to an awareness of the teacher's attitude towards her teaching changes due to the pandemic. Specific design for each meeting affords both supports and challenges, assets and liabilities, that enable YLs in CLIL science classroom to work within the ZPD to enhance their learning engagement. Flexibility in using L1 and L2 in translanguaging and spatial repertoire in trans-semiotizing are urgent for teaching YLs due to limited learning space and time. Teacher's digital literacy also determines successful learning in CLIL classroom during the pandemic by planning and practicing virtual lessons, which are carried out with systematic linguistics and semiotic scaffolding to engage the students in the learning process (Chen et al., 2021; Fernández-Fontecha et al., 2020; Liu, 2020; Monbec, 2020). The results of this study will be practiced more massively when remote learning becomes a new reality and trend in the unpredictable world's changes.

Recommendations

There are two essential recommendations in studying translanguaging as scaffolding for CLIL science forced-remote learning at the primary school level. First, translanguaging for teaching YLs CLIL science should be planned meticulously and systematically based on the existing situation. Multimodal scaffolding resources should be utilized and presented along with the teacher's improved digital literacy. Second, some steps in conducting the CLIL science learning during the pandemic can be adapted with awareness in selecting the activities suitable to the students' cognitive and mental conditions. Further studies should be conducted to investigate the effectiveness of translanguaging strategies for scaffolding the YLs' CLIL lesson linked to more sophisticated and recent theories of technological pedagogical content knowledge (TPACK).

Limitations

The participant has practiced translanguaging as a learning scaffolding during the COVID-19 pandemic. It was linked to multimodal scaffolding resources for providing fresh insight into the CLIL science instruction of YLs. Due to the study's reliance on a single participant as the sole data source, the results were limited to a specific setting, a particular Islamic primary school in Indonesian contexts.

Author Contribution Statement

Setyaningrum: Conceptualization (lead), methodology (lead), writing – original draft (lead), review (supporting), editing (supporting). Setiawan: Conceptualization (supporting), methodology (supporting), writing – original draft (supporting), review (lead). Anam: Conceptualization (supporting), methodology (supporting), writing – original draft (supporting), review (supporting), editing (lead).

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