

# Plurilingualism and STEAM: Unfolding the Paper Crane of Peace at an Elementary School in Japan

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## ABSTRACT

This contribution attempts to clarify the relationship between the practice of plurilingual education and STEAM (interdisciplinary pedagogy that incorporates science, technology, engineering, art, and mathematics) through the lens of peace learning at an elementary school in Japan. Japan has a rich history of peace education, although it has received limited focus in the international literature, whereas plurilingual education remains relatively unknown in the country. Within this context, the article examines a teacher-initiated plurilingual and intercultural project focused on a multidisciplinary approach to peace learning. Analyses of multimodal data, including video recordings, photographs, researchers' field notes, learners' journals, and semi-structured reflective interviews, will demonstrate how even within a highly homogenous context, practitioners can promote transferable skills and nurture a deeper awareness of language and openness to diversity, foster reflexivity, and encourage multidisciplinary engagement through plurilingual education, dialogue, and storytelling.

## KEYWORDS

Community Engagement, Inquiry-Based Learning, Intercultural Awareness, Language Education, Peace, Plurilingual Education, Plurilingualism, STEAM

## INTRODUCTION

On the school trip to Hiroshima, after hearing the *Hibakusha*'s<sup>1</sup> story, well that night, a teacher in the boys' room came to me saying, "you've got to come, you've got to come." So I went, expecting trouble, but when I arrived, the boys had gathered and

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had been talking for over an hour, of their own accord, about their impressions of the *Hibakusha*'s story, about what they could do for peace, about how they would live their lives. And they were saying, "the *Hibakusha*'s use of 'life,' couldn't that be different to how we understand it?" ... I thought this had to be connected to what they were learning in their *Gengo Bunka* [Languages and Cultures] class (Kana-sensei, reflective journaling, translated from Japanese).

We open this article with the elementary school children's voices after they met with atomic bomb survivors. These children's experience and their narratives will bookend the paper and help to frame our discussion. In the same way, the Paper Crane origami, chosen by the children themselves, will frame, as a metaphor of learning, this paper.

Japan is a highly homogenous and monolingual nation with relatively recent and very poignant memories of violence, located in a currently uncertain geopolitical region with the potential for renewed conflict. Within this context, we will present a grassroots pedagogical project that meshes learning about peace, STEAM (an interdisciplinary pedagogical approach that incorporates Science, Technology, Engineering, Art and Mathematics, often simultaneously), and plurilingualism at an elementary school.

Peace education has received a lot of attention in the literature since the latter half of the 20<sup>th</sup> century. Profoundly influenced by Johan Galtung's (1969) concepts of *negative peace* (in short, the absence of direct, physical violence such as armed conflict) and *positive peace* (absence of structural violence, entrenched systems that perpetuate inequality, poverty, etc.), many peace education initiatives focus on fostering awareness of, and encouraging action toward, the latter, including critical peace education (Bajaj, 2015). Most studies have focused on higher education (Kester & Cremin, 2017), and less attention has been given to this field for K-12 children.

In K-12 education, much attention is given to multidisciplinary approaches, such as STEAM, and to plurilingual education. Traditionally, all these have been seen as separate fields of study. In this paper, we attempt to clarify their relationship in practice. We will trace the creation of the *Gengo Bunka* (言語文化, literally, 'Languages and Cultures') subject which incorporated foreign languages into the core curriculum at an elementary school, despite considerable initial resistance to their introduction. We will then examine the practice, with particular focus on STEAM instruction and the school's peace learning initiative.

In this vein, the paper focusses on the interlinking of languages, intercultural awareness, and peace learning in the spirit of David Crystal's definition of *peace linguistics*:

*emphasiz[ing] the value of linguistic diversity and multilingualism, both internationally and intranationally, and assert[ing] the need to foster language attitudes which respect the dignity of individual speakers and speech communities. (1999, pp. 254-255)*

## THEORETICAL BACKGROUND: PLURILINGUAL STEAM-BASED PEACE LEARNING

### Peace and STEAM

Since its inception as a preventative pedagogy after the World Wars of the 20<sup>th</sup> century, the field of peace education has expanded to address a variety of conflict and violence. Galtung's concept of *positive peace* (1969), mentioned above, was influential in shifting the trajectory of the field to seek pedagogical methodologies that addressed structural and cultural violence<sup>2</sup> and sought to disrupt entrenched systems that deprive individuals, particularly in marginalized groups, of their basic human rights (Galtung, 1990). Being highly context-sensitive, attempts to universalize or regulate peace education praxis have been resisted, as top-down approaches carry the danger of reinforcing, rather than disrupting, certain forms of structural or cultural violence (Kester & Cremin, 2017). Bajaj, for instance, advocates critical peace education (2008), which seeks to nurture the following key competencies (Brantmeier, 2011, p.356):

1. Raising consciousness through dialogue
2. Imagining nonviolent alternatives
3. Providing specific modes of empowerment
4. Transformative action
5. Reflection and re-engagement

Bajaj's reflection that "peace education, as an enquiry-based endeavor, is not about converging upon answers, but rather is about generating new questions and processes" (2015, p.164), suggests a commonality with STEAM-based education, which emphasizes experientiation of the scientific process of hypothesizing and debate. From an arts perspective, peace education is cognizant of local histories<sup>3</sup> and social sciences, which necessarily occupy a key role in knowledge production and dissemination and are necessary to promote engagement in social change. Similarly, artful expression in a variety of mediums is often encouraged in peace education (Cremin, 2016), which is open to different modes of communication in the face of rigid (typically Western) educational structures that often legitimize only certain types of academic output and can disempower culturally specific forms of communication.

### Redefining STEAM-Based Peace Learning Within a Plurilingual Framework

Despite peace education's openness to varying modes of communication, language education specifically has not been given much attention in the literature (Curtis, 2017). Notable exceptions include *peace linguistics* (popularized by Gomes de Matos, 2014, and Crystal, 1999), and Anita Wenden's (2007) call for *critical language awareness* within the peace education paradigm. These visions converge with plurilingualism and plurilingual education, which have previously been described as "fundamental value[s] of democratic tolerance and a specific competence to be developed to counteract

linguistic denigration and intolerance in order to bring about democratic fraternity and peace.” (Beacco & Byram, 2007, p. 107)

Plurilingual education is a broad concept that has come to describe a varied set of values, beliefs, and practices in language education (Beacco & Coste, 2017). While many plurilingual education practices are context-sensitive, they tend to take a holistic view of linguistic competence, inclusive of the entire linguistic repertoire of the learner. Thus, plurilingual education situates itself in opposition to traditional language education, which artificially separates languages in order to develop skills in the target language, and fails to regard other languages as aids to knowledge construction, a position that is sometimes labelled the monolingual bias (May, 2014).

Plurilingual education in this sense also meshes well with the educational philosophy behind STEAM learning, an integrative approach to education that seeks to expand upon the work of STEM (Science, Technology, Engineering and Mathematics), by incorporating Arts (meaning fine arts, language and liberal arts, motor and physical arts [Yakman & Lee, 2012]). Much as in plurilingualism, which emphasizes the interconnectivity of languages (Lüdi & Py, 2009), STEAM seeks to break down the separation of subjects and encourage interdisciplinary knowledge-building through awareness of connections between disciplines and to emphasize the importance of art and aesthetics in disciplinary learning (Sinclair, 2006). Some studies have examined STEAM with a specific inclusion of plurilingual education, encouraging the development of transferable skills in multiple languages across arts and science disciplines (Moore, Hoskyn & Mayo, 2018; Moore, 2020). However, little work has focused on multidisciplinary approaches to plurilingualism and language learning, with a focus on peace at the primary level (although see Ishihara, Orihashi, & Clark, 2019).

The elementary school in this paper emphasizes understanding (or attempting to understand) the viewpoints of others in its peace learning, as well as engaging in critical reflection on one’s own viewpoints. In the remainder of this article, we will examine how the school incorporates elements of STEAM and plurilingual education weaved throughout its core curriculum and peace learning in order to promote openness to diversity, and to cultivate reflexivity and multiperspectivity, agency and engagement.

## **UNDERSTANDING THE RESEARCH CONTEXT, DESIGN, AND DATA COLLECTION**

### **A School Engaged With Local and International Communities**

The elementary school is attached to a university and has varying freedoms not afforded to typical public schools in Japan, in that they have reasonably easy access to academia and a degree of freedom in how they implement national policies. The school has a culture of discussing and debating students’ needs, and collaborative decision-making between teachers on what kind of learning they wish to promote when implementing new pedagogical approaches.

The school actively engages with local communities, visiting *Hibakusha* (atomic bomb survivors) in Hiroshima. They invite exchange students at the university to visit and teach about their languages and cultures. Each year, many pre-service teachers and other external observers join classes. There is also engagement with more global communities, such as the Peace Boat<sup>4</sup> and the International Campaign to Abolish Nuclear Weapons (ICAN<sup>5</sup>). In one instance, the children at the school, after hearing about ICAN, sent a collaboratively written song on peace (see Appendix), to which ICAN responded by beginning a program of visiting elementary schools to give classes on nuclear weapon antiproliferation. In this way, the school not only promotes ideals of community engagement, but also action-taking and experiential learning.

## Research Design and Participants

The research design is two-fold: the first section examines the collaborative development of a grassroots innovation from the point of view of the teachers involved, and the head teachers responsible for the subject. The data includes documents produced collaboratively to orient the practice, including a research journal published shortly after the establishment of *Gengo Bunka*, subsequent curriculums, and an interview with the present head teacher.

The second section employs a longitudinal ethnographic approach to data collected over two academic years, and documents how this innovation is implemented in daily practice in and around the classroom. Participants were students in their 5<sup>th</sup> and 6<sup>th</sup> grades (n=27, 14 boys and 13 girls) and their teacher, Kana-sensei. The researchers were present for many of the *Gengo Bunka* lessons as part of an ongoing materials development and ethnographic research project. As students in an educational research school, the children were accustomed to being observed, and the researchers would often actively engage in lessons.

This collaborative research arrangement allowed for the collection of a variety of multimodal data sources including ethnographic photography, video recordings, field notes, student reflections, minutes from materials development meetings, and numerous personal interactions, including postal mail, email exchanges, and interviews with Kana-sensei, two of which were conducted via Zoom due to the coronavirus pandemic. This wealth of ethnographic data allowed us to document: (1) the children's engaging in plurilingual activities, (2) interaction and hypothesizing by the children in their classes, (3) the children's journaling, (4) the nature of Kana-sensei's instruction, and (5) retrospective reflective interviews on Kana-sensei's teaching practice. Interpretation of the data is collaboratively constructed between the researchers and the teacher, which allowed for differently situated perspectives. The group itself (three researchers and the teacher) is plurilingual and pluricultural; a New Zealander speaking English and Japanese, a Japanese speaking English, French, and Japanese, a French speaking French and English, and a self-described monolingual Japanese, speaking Japanese (but able to communicate in English). All interview data and reflective journaling has been translated from Japanese by the authors.

## FINDINGS AND DISCUSSION

### The School's Grassroots Resistance to English-Only: The Creation of Gengo Bunka

In 2011, a new Course of Study<sup>6</sup> was to be implemented, in which, for the first time, *foreign language activities* were to be introduced in elementary schools. Reading into the Course of Study, which included the addendum “the language to be taught is, in principle, English” (MEXT, 2008), the teachers expressed confusion with limiting the subject to English:

*Why “English in principle?” Why do we have to focus on English and not on the languages of our neighbours, Korea and China? What is the reason behind having children communicate in English? [...] Are communication skills nurtured in English [alone]? In our core subjects and extracurricular education we try to help children understand and connect with each other through language [...] of course, their mother tongue, Japanese, but surely, that is the communication that is important? (Otani, 2014, p. 136, translation ours)*

Although the teachers were hesitant to begin foreign language practice, the subject was nevertheless to be implemented. Not satisfied with the English-only rationale, they established a committee to discuss how they would approach instruction, and sought advice from a professor at the attached university, who advocated for plurilingual education:

*Professor Yoshimura says it is important for children to learn how to learn a foreign language and encourages multilingual activities [...] When they encounter an unknown language, they are encouraged to uncover its hidden rules and uniqueness, as well as commonalities with other languages, not from scratch, but by applying their whole repertoires, including their native language and culture. (Otani, 2014, p. 140, translation and emphases ours)*

Upon closer examinations of ministry documents, the teachers noticed emphases on international understanding and learning about the differences and similarities between Japanese and foreign languages, customs, and cultures. Combining this understanding with the above advice, they sought to implement *Gengo Bunka* as “language education inclusive of the national language” (Otani, 2014, p.137).

The present head of *Gengo Bunka*, and co-author, Kana Irisawa, a self-described monolingual reticent to introduce foreign language (English) education, recalls attending a meeting organized by the university:

*[...] Someone said, “learning a foreign language is for peace. We learn about diversity through learning about other countries’ languages and cultures. And that connects to building a better society. Learning a foreign language doesn’t mean just being able*

Figure 1. Worksheet for “The World’s Languages and Japanese”

「言語・文化」 No. 1

“Gengo Bunka” No. 1

名前 \_\_\_\_\_

(Student’s Name)

のお札

Banknote of ~



*to speak English, it’s about personal identity development, social development.” I thought, “hey, that really fits with what we want to do!” (Kana-sensei, Zoom interview, May 2020, translated from Japanese)*

What differentiates *Gengo Bunka* from traditional English classes is not only its inclusion of multiple languages and cultures, but that there is a conscious effort not to essentialize ‘the foreigner’ (which in English materials, is often represented as a white, North American native speaker). Rather, it has been designed to use Japanese (the language and subject) as a springboard to examine things in Japan that differ from, or are similar to, foreign countries. In other words, the children engage in activities that involve ‘otherness’ in their daily lives (relevant to their contexts),

and the world at large. To this end, the teachers have collected and put into practice Language Awareness materials developed in Japan, and in collaboration with two of the coauthors, developed and implemented materials of the pluralistic approach, *Awakening to Languages* (Oyama, 2016). In the next section, we will examine examples of this practice selected from the beginning and end of the two-year data collection.

## Engaging with Plurality

The very first practice, conducted in the 5<sup>th</sup> grade, was entitled “The World’s Languages and Japanese,” with the aim to learn that there are more than 6,000 languages in the world, and that Japanese and English are each one of those languages.

The material was simple; a worksheet showing both sides of a 10-rupee banknote (see Figure 1). Kana-sensei began by having the children examine the banknotes to look for people or animals, and if they could recognize any words or numerals. Based on their observations, the children attempted to identify the country to which the banknote belonged (observational analysis of real-world phenomena and hypothesizing based upon their prior knowledge of languages). The children were also asked to examine how many languages were represented on the banknote, and hypothesize about their status (e.g., why English and Hindi are displayed prominently, and the 15 other languages are in smaller font).

What did the children learn from this observation? Japan is extremely linguistically homogenous (although its variety of dialects were covered in a later lesson), but here, the children discovered that not all nations are – India, for instance, is extremely multilingual, a phenomenon about which several students commented upon in reflective journaling:

*On the Indian note, ‘10 Rupees’ was written in 15 languages, and I thought, ‘isn’t the most commonly used Hindi enough?’ I want to know why they had to include so many. I wondered why Indian people use more than 15 languages. Because, it’s confusing with so many, you don’t know what language to use where. I thought that they should choose one language for everyone to speak. But it’s impossible to change everyone[’s language] now, so maybe if they just taught it to elementary students, then the next generation could use that language, I think.*

As represented in these reflections, the opinion that, like Japan, countries should decide on a common language was prevalent early in the project. The discussion expanded into questions of why linguistic diversity exists, or what would be needed to achieve a common language. The children were encouraged to question beyond simple refusal or ignoring of different situations, but towards deeper consideration of why these situations exist.

After examining the banknote, the lesson turned to a discussion of world languages, and the fact that there are countries like India that are extremely multilingual, as well as languages that are spoken in many different countries (Arabic, English, Spanish, etc.), and languages widely spoken in only one country, such as Japanese. The lesson



concluded with the students discussing the number of languages in the world, and those with the greatest number of speakers.

In many *Gengo Bunka* lessons, several languages are introduced simultaneously, while others focus on one language, although the common thread is awareness of plurality. In the next section, we examine how plurality is incorporated in a lesson on mathematics and Roman numerals.

## Investigating Roman Numerals as a STEAM Approach in *Gengo Bunka*

This 6<sup>th</sup> grade lesson occurred after a previous session on Mayan numerals (based on Koizumi, 2011). Here, we focus on Kana-sensei's practice, which is conducted dialogically. Her children are consistently required to vocalize hypotheses about language, to listen to their classmates' hypotheses, and express their opinions.

Beginning with a reflection, Kana-sensei asks if they have used the Mayan numerals. This resulted in the interaction in Extract (1), which, although brief, may have helped to draw attention to plurality in mathematics, potentially facilitating one child's comparison between Roman and Arabic numerals later in the lesson (see the end of this section).

### Extract (1)

*KANA: Yes, we did Mayan numerals. Since then, have you been using them?*

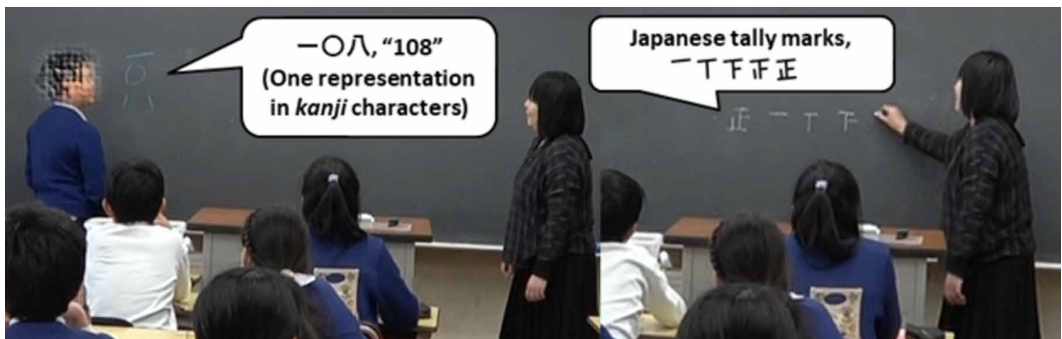
*LL: Noooooo!*

*L1: We couldn't use them for maths class!*

This is followed by Kana-sensei asking the class, “do you know any numerals other than the ones you use in maths class?” Answers included two systems using *kanji*<sup>7</sup> (Chinese characters), and the Japanese tallying system (Figure 2).

Here, Kana-sensei draws attention to plurality in the Japanese language<sup>8</sup>, while activating the repertoires of the students – potentially priming them to apply their resources to deciphering Roman numerals.

### Figure 2. Sharing numerical systems



Following this interaction, Kana-sensei writes I through III on the blackboard and asks the children if they have seen them before. Several reply in the affirmative, to which she asks, “where?” Responses included “part two in movies,” “somewhere in *Harry Potter*,” and “clocks.” When one child offered “*Dragon Quest*,” a popular video game series that numbers entries with Roman numerals, the class responded with an enthusiastic “aaah!” Here, Kana-sensei introduces a potentially new semiotic resource (the numerals), and connects it with students’ prior knowledge, rather than delivering answers herself. The children are accustomed to this teaching style and constantly add their own knowledge to the overall learning space. Speech is free flowing, and the custom of raising hands and being nominated is almost entirely non-existent. Kana-sensei’s children are co-constructors of knowledge.

Kana-sensei then stated that the characters are much older than the Arabic numerals used today. As she wrote on the blackboard, one child noted a similarity between the Roman numerals I, II, and III, and the Mayan numerals. Kana-sensei then wrote IV through X on the blackboard and gave their numerical value, before asking “what rules do you think they have?” The children constructed preliminary hypotheses on their worksheets, while Kana-sensei walked around and asked questions of their work. After about 10 minutes, the students began to share their hypotheses, prompted by Kana-sensei in the following manner:

## Extract (2)

*KANA: Some are struggling. (Points at I). This is one. Can you say why?*

*LL: Me!*

*KANA: Who can tell me?*

*L1: Me!*

*KANA: Ok [student], why is this one?*

*L1: Because there’s only one line.*

*KANA: Ok, there’s only one line. (Points at II). This is two. Why?*

*L1: Because there are two vertical lines.*

*KANA: OK, two vertical lines (points at III). And this?*

*LL: Three.*

*L1: Three vertical lines.*

*KANA: (Points at IV) And this?*

*LL: Me!*

*KANA: We want to write it like this, right (draws four vertical lines).*

*L2: What a pain!*

*KANA So, I’ll ask what you noticed.*

As can be seen in extract (2), the children are required to vocalize the reasoning behind every answer they provide, even when they appear obvious. When more in-depth reasoning is required (hypothesizing how the numeral IV works), Kana-sensei asks the children to share what they have noticed, and removes herself to the side of

the classroom. By relinquishing the space (and crucially, the blackboard), Kana-sensei allows the children to employ a range of expression, such as thinking aloud, and using visual aids. Here, they share several hypotheses, questioning, criticizing, and refining them, in an intensely collaborative process of knowledge construction (see Figure 3, in which one child has come to assist another who was struggling with her explanation).

The object of the lesson being a numerical system also allowed the children to employ their mathematical knowledge in their explanations; one child used simple equations to demonstrate his hypothesis (Figure 4).

After around 15 minutes of sharing and debating hypotheses, the children engaged in their worksheet, applying their hypotheses by attempting to write the Roman numerals XI through XX. After this second round of individual work, they were prompted to give their answers. Several came forth, and conflicting answers engendered another round of debate, including the use of arithmetic to argue for different possible representations of real numbers. This second round culminated in a near consensus in the final minutes of class, to which Kana-sensei confirmed the correct answers.

As seen in this practice, the children are consistently engaging in investigative inquiries, involving hypothesis-making, testing, and debate. This investigative approach

Figure 3. Co-construction of knowledge



Figure 4. Arithmetic as an explanatory aid

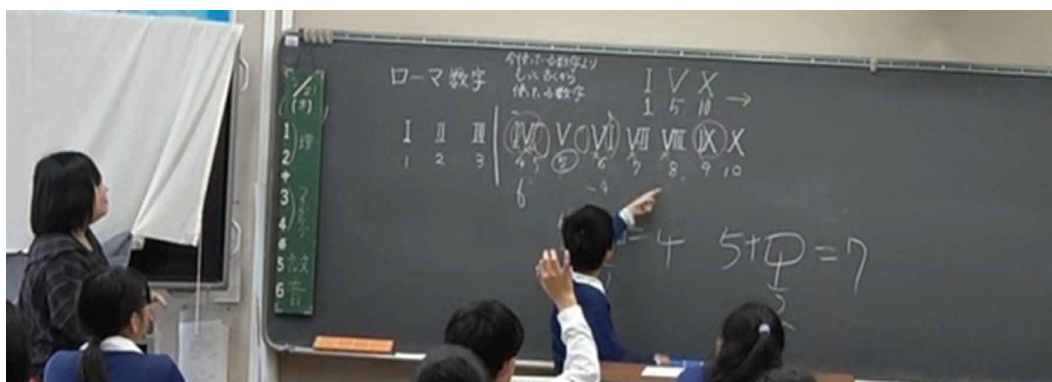
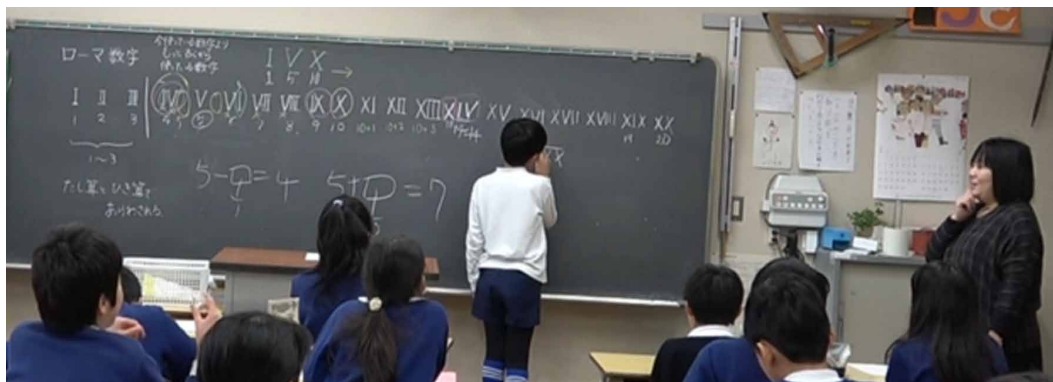


Figure 5. Debating hypotheses



is central to the learning process taking place here, one that Kana-sensei remobilizes in peace learning (below). Examining and hypothesizing is the foundation of the scientific method, a fundamental component of STEAM, and becomes a fundamental component of plurilingual education as well.

Even after the bell rang, the children continued to think and question. While Kana-sensei prepared for the next lesson, several children could be heard continuing to converse, with one raising the question, “what happens at 50?” The children were not only engaged in the lesson content itself, but actively sought the next ‘mystery.’ This lies in stark contrast to drill-based language lessons, about which Kana-sensei laments, “there is no time in English classes to do any *thinking*” (Kana-sensei, Zoom interview, May 2020). Kana-sensei’s strategy is to create multiple encounters with otherness, to encourage thought and engagement through hypothesis-making, and thus inculcate an openness to the unknown, thereby preparing the children for such encounters in the future.

Of interest also is how the children’s comments have changed. In evaluating the 10-rupee note, many compared the multilingualism of India with the monolingualism of Japan, by remarking that having multiple languages must be “inconvenient.” In contrast, regarding the Roman numerals, the following remark could be heard in comparison with Arabic numerals:

*They don’t have place values [位, kurai], but it’s like arithmetic, so using them might help you get better at adding and subtracting.*

Similar remarks had been made in the lesson on Mayan numerals (not discussed here). The children were no longer making simple value judgements such as ‘X is better,’ ‘or Y is better,’ but engaging in critical evaluations of their subject material. They actively problematise the material, and seek new, potentially useful information. For instance, early in the hypothesizing stage, one child asked, “what is zero in Roman numerals?” The children do not shy from debate. This is promoted by Kana-sensei’s stance of not interfering in the children’s hypothesizing – rather, when they falter, she

encourages them to look for more clues. In this way, she is cultivating in the children the ability to manage ambiguity and uncertainty when confronted with what they do not yet know.

### **Interlinking Experiences of Plurilingualism and Critical Understanding of Peace within a STEAM framework**

As mentioned above, the school has a strong focus on peace learning through fostering understanding of historical events and of others' perspectives through dialogue and engagement with local communities. One central element of this is the school trip to Hiroshima<sup>9</sup> in the 6<sup>th</sup> grade, when the children visit a lesser-known atomic bomb site, *Hifukushisho*<sup>10</sup>:

*Nearly 20 years ago [...] Hifukushisho became a must-visit destination for us. Because it is the only place where you can hear the stories from the Hibakusha. Many were exposed near the Atomic Bomb Dome of course, but they have all since passed away [...] So, the social studies teachers said, "we have to visit Hifukushisho, because it's the only place left." (Kana-sensei, Zoom interview, May 2020)*

After meeting with the *Hibakusha*, the children engage in reflective journaling, in more or less complex ways. Observation shows that they are hesitant to make claims that simply "sharing the *Hibakusha*'s voices should [necessarily] lead to peace." On the other hand, they show awareness that experience and storying are stronger ways for sharing voices. As one child expresses:

*The two thoughts that left an impression on me were, "As a survivor, I feel guilt about those who died," and, "those who died had their futures taken away, and those who survived, had their futures upturned." I think if I had survived some horrible air raid, I would think that I was lucky, I think the feeling of 'guilt' is part of something that only the hibakusha can understand... From these words, I can understand how wars that steal futures, or mess them up, are horrifying. Like, there are some things we can understand when they tell us their stories, and some things that we can't, even if we listen. But, if each of us makes a little effort to understand what we might not, to understanding each other, to connect our thoughts to the future, then I think peace will spread. (6<sup>th</sup> grader's reflective journaling)*

The child's reflection resonates with the story that began this paper. In a reflective journaling session, Kana-sensei had reported that she thought the children's discussion on what 'life' meant was inspired by their experience of learning in *Gengo Bunka*:

*They've become very particular about words [pause] Gengo Bunka is a class in which students consciously engage with language itself, so I think it makes them more conscious [of meaning] [...] I think the class plays a big role in shaping the children*

*at a time when they are becoming aware of the differences between themselves and others, and how they are seen by others. (Kana-sensei, Zoom interview, May 2020)*

## Unfolding The Paper Crane of Peace as A Visual Narrative for Multi-Perspectival Learning

For the children, peace learning does not end in Hiroshima. After returning, they share their experiences with other children who have not yet experienced the trip. This is conducted in *multiclass groups* – each comprised of one 6<sup>th</sup> grader joining one student from each of the 1<sup>st</sup> to 5<sup>th</sup> grades. Through this interaction, the older children must take into account the experiences and knowledge of the younger, and frame and retell their and others' experiences and stories in ways that will be comprehensible to all, using a variety of transmission mediums.

Figure 6 is an example of one group's recrafting the story of the ICAN movement and their peace project learning using *kamishibai*, a form of Japanese street theatre and storytelling traditionally created for younger children.

Each page of the *kamishibai* was accompanied by a script produced by the children to convey, alongside their illustrations, their understanding of four key visions of the ICAN movement: A desire to stop the spread of nuclear weapons (①), nuclear disarmament (②), antiproliferation treaties (③), and the movement itself (④). Of particular interest is the students' clear cognizance of diversity; the people in images ① through ④ represent a diversity of ethnicities, nationalities, gender, skin and hair colours, and dress. The flags and the bomb, hanging above the heads of unhappy people intimate the children's understandings of the power of nuclear-armed nations; here, France, the U.K., U.S., Russia, and China, nuclear-armed signatories to the Treaty on the Non-Proliferation of Nuclear Weapons.

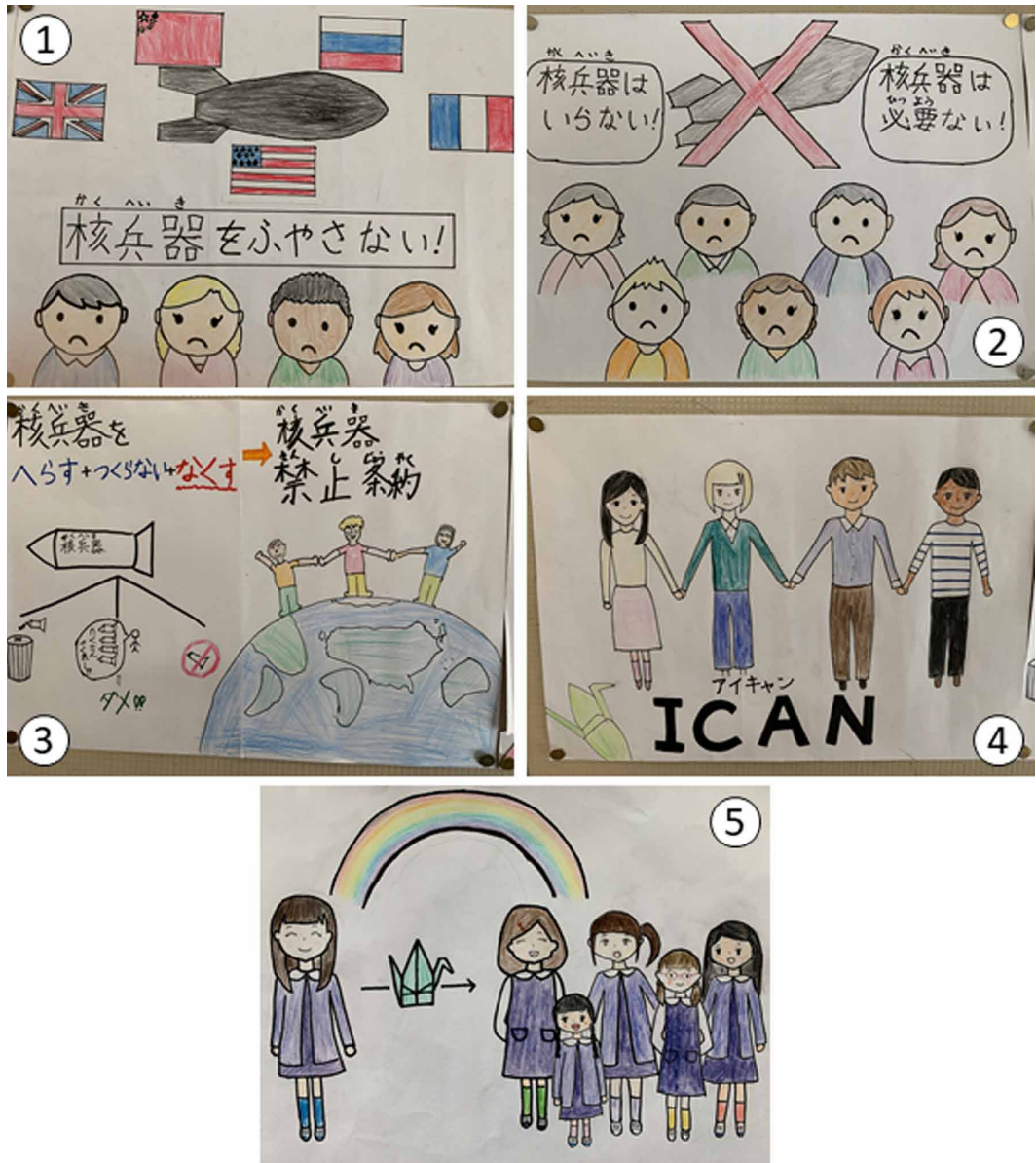
Image ③ is a powerful message. On the left, a three-fold injunction (reduce, stop making, and eliminate nuclear weapons) is repeated twice through different visual means; in writing, and as an iconographic representation. The right side is the children's vision: three people of apparently different nations holding hands standing on the globe. The depiction of the globe is an inclusive representation, employing artistic license to portray all of the world's continents in one image, rather than a realistic depiction of planet Earth. The message reads "Treaty on the Non-proliferation of Nuclear Weapons," a direct quote of what they have learned from ICAN.

Finally, the children are cognizant of their agency as peacebuilders, as image ⑤ is a representation of the very work they do in their groups; the 6<sup>th</sup> grader (to the left) sharing what she has learned about peace to the younger members of her group. The motif chosen to represent peace here is the paper crane, an important symbol in Japan (also appearing at the bottom left of image ④).

The paper crane is a traditional symbol in Japan, one that has come to represent peace, popularized in the west by the fictionalized account of atomic bomb victim, Sadako Sasaki, written by Eleanor Coerr (1977), and her folding of 1,000 paper cranes (千羽鶴, *senbazuru*), a statue of whom can be seen in the Hiroshima Peace Memorial Park. This motif also adorns another piece of the children's artwork (Figure 7).

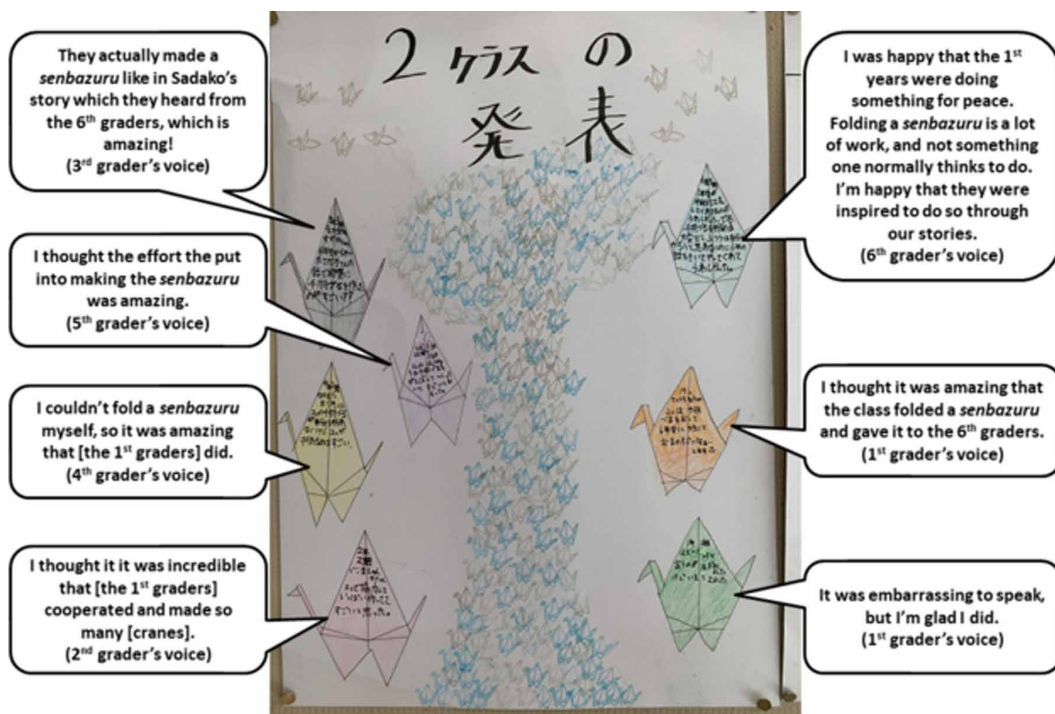


Figure 6. Transmission through kamishibai



This paper crane poster was made by the sixth-grade class, in response to a tremendous effort by first-graders to fold their own thousand-crane origami as a way to bring people together and remember. They later presented to the school their artistic origami storying, which prompted the sixth-graders to interview younger children to better understand how they lived this revocing process (the first-years crafting and presenting of the thousand cranes, and the other children's reflections on the origami). They used all these voices to craft the collective poster that now adorns the wall of the school's main stairwell, for everyone to see and share these stories and

Figure 7. Artistic representation of peace learning through paper cranes



spread awareness and hope. As such, Figure 7 presents a visual story, using multiple paper cranes to voice multiple, intergenerational understandings of peace learning. Using the origami stamps with which Kana-sensei validates their class work, the 6<sup>th</sup> graders multiply the origami image of the peace crane, while creating seven coloured cranes that represent their younger schoolmates' reflective learning about peace, collaboration, and voice ("I couldn't fold a *senbazuru* myself"; "it was incredible that they cooperated and made so many cranes"; "it was embarrassing to speak"). The revoicing origami cranes surround a very large blue and grey *senbazuru*, made up of infinite duplications of much smaller cranes. The recurrence of the crane origami as a visual element gives it symbolic depth and meaning. The shapes are repeated in different ways (colours, words, size). The repeated image thus carries the idea of variation of what is identical, and the ability to evolve and replicate (the persistence of memory). Here it is the multiplication and variation of the same image that creates a new shape. The children did not merely create copies of the same component but changed the copies in fundamental ways; the differences carry different messages to the world, weaving narratives of the National past (through the children's revoicing the survivors' stories and experiences, as well as their resilience, through a process of creating visual art that required patience, perseverance and joint effort), as well as the flow of understanding. The image in its totality creates a new iconological identity. Each component is authored but there is a collective dimension to the visual. It can



undergo indefinite variation without losing its ability to convey a message. You can always add an origami of the peace crane to the thread, and it is ever flowing.

The entire display provides an alternative narrative of an important episode in the history of Japan, distilling children's micro-experiences threaded together into a common story of remembrance. As a visual narrative, the paper crane poster created by the children contextualizes story-based learning, as well as the interpretative multi-perspectival nature of a story, and of History. As Kropman, van Boxtel & van Drie (2020) state: "Multiperspectivity in narratives involves varying spatial and temporal scales, varying agency and plots, and varying types of historiography" (p. 2). Storytelling as revoicing and as a form of narrative learning is also giving older and younger children authority and authorship, and acknowledging their contribution to the social fabric of their school and community. In their teacher's own words:

*It's something we've been trying to do with our peace education, and I think the children have been too, to consider how they can become peacebuilders, how they can put that into their own words [pause] a lot of what they share happens in these groups. In doing so, every individual student has to share, in their own words, what they have learned. If student committees or some representatives presented in front of a school assembly, the others would just be listening. So, they present in these multiclass groups. (Kana-sensei, reflective interview, May 2020)*

## CONCLUSION

In this paper, we examined STEAM learning and plurilingual education within a highly homogenous context. Despite initial trepidation toward the introduction of foreign languages, the elementary school in this study created *Gengo Bunka* as a *pedagogy of resistance* (Bajaj, 2015). While maintaining adherence to the goals of national policy, the implication of plurilingual education allowed the teachers to enrich what would otherwise be English-only classes.

The interweaving of this practice with the core curriculum, STEAM, and peace, resonates with the key competencies of peace education, by (1) raising consciousness through dialogue, as seen in Kana-sensei's class practice and the *multiclass groups*, (2) imagining nonviolent alternatives (the student's song for peace amongst various other artworks), (3) providing specific modes of empowerment by actively encouraging learner engagement with local and global communities, (4) transformative action (the students' work prompted ICAN to offer lessons at elementary schools), and (5) reflection and re-engagement; the language work by the students in reflecting on their experiences and retelling them to others through various modes, including storying, and engaging with language, plurality, and multiperspectivity in deeper ways.

Throughout their peace learning activities, the children were encouraged to mediate their understandings of the stories they had heard, and cast them into new stories for others; unfolding and folding paper cranes anew and sharing them. For Hanne & Kaal (2019), storytelling and metaphors are powerful tools to capture the

complexities of meaning-making, from multiple perspectives, to communicate human experience, memory, and make sense of the world (see also Kropman, van Boxtel, & van Drie, 2020).

Within the highly homogenous and monolingual context of Japan, the plurilingual practice of *Gengo Bunka* has fostered multiperspectivity, a greater reflexivity and critical awareness around language and diversities. As the young learners voiced themselves, “to resist inequality, all we have is language (不平等に☒抗できるのは言葉しかない!).” (Kana-sensei, letter, May 2020)

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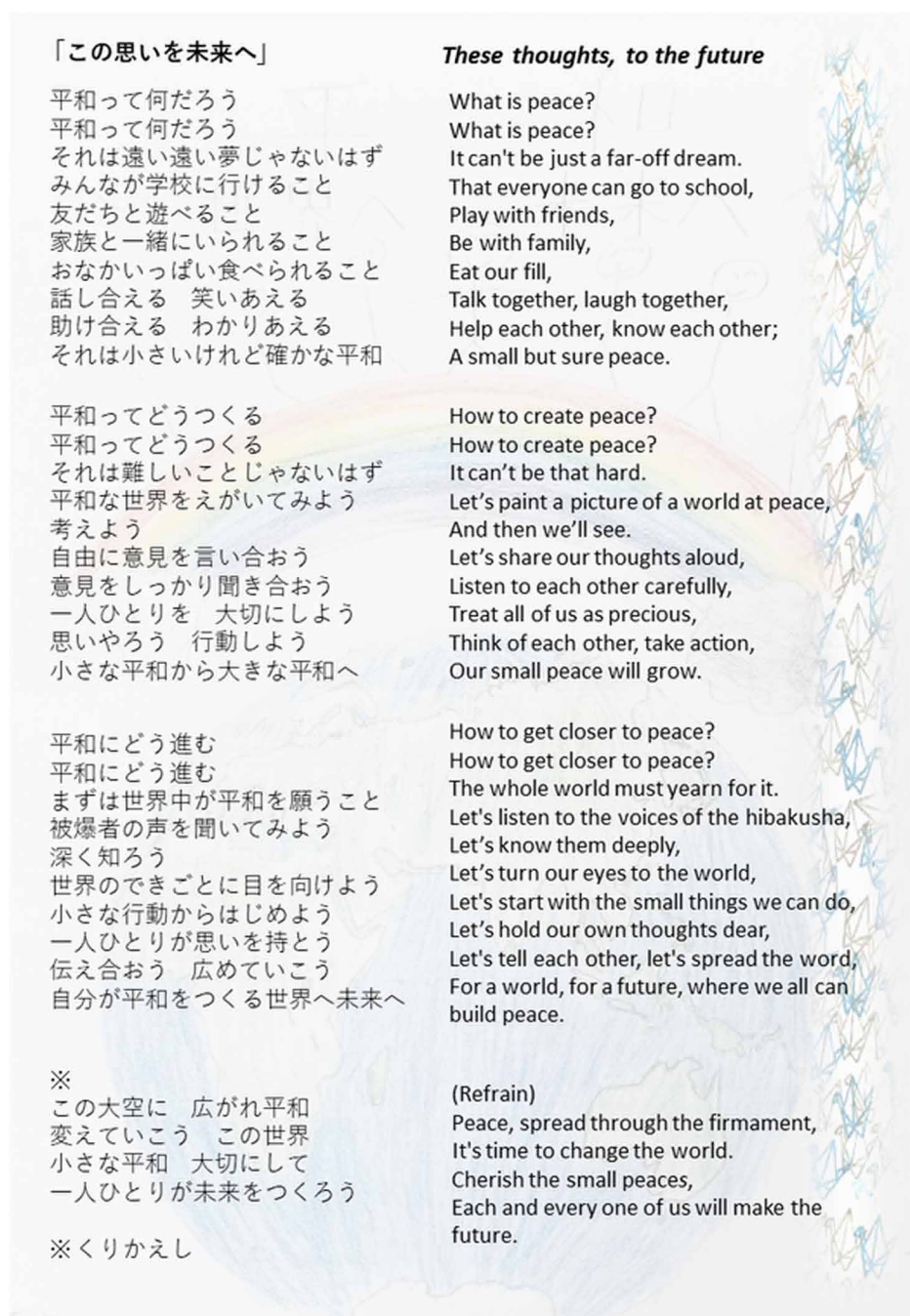
## ENDNOTES

<sup>1</sup> *Hibakusha* (被爆者) is the Japanese term for survivors of the atomic bomb.

- <sup>2</sup> Defined as “those aspects of culture, the symbolic sphere of our existence – exemplified by religion and ideology, language and art, empirical science and formal science (logic, mathematics) – that can be used to justify or legitimize direct or structural violence.” (Galtung, 1990, p. 291)
- <sup>3</sup> See, for instance, a rare example of *peace linguistics* pedagogy that incorporated important local historical artifacts (American dolls gifted to Japan in the 1920s) in an elementary English class (Ishihara, Orihashi & Clark, 2019).
- <sup>4</sup> See <https://peaceboat.org/english/about-peace-boat>.
- <sup>5</sup> See <https://www.icanw.org/about>.
- <sup>6</sup> A Ministry of Education curriculum document that all schools must adhere to.
- <sup>7</sup> Discrete figures may be expressed in *kanji* characters in several ways. For instance, 108 may be written 一〇八 (Figure 1), but also 百八、百八 etc.
- <sup>8</sup> The term plurality here may engender some confusion, due to our description of Japan as a highly monolingual and monocultural society. The plurality here refers to the hybrid nature of Japanese written script, with incorporates *kanji* characters originally imported from China around the 5<sup>th</sup> century C.E. Since their importation, however, uniquely Japanese phonetic readings have been applied to the characters, and entirely original characters have also been introduced (for instance, 駅, *eki*, meaning train station, a character that does not exist in Chinese). The Japanese language also incorporates Arabic numerals, and to a degree the Roman alphabet, yet all exist within one named language system, Japanese, which is the native language of more than 98% of citizens and residents in Japan, and the only official language of schooling. Space precludes a full explanation of the plurality in the Japanese language, which is covered in detail in Moore et al. (2020).
- <sup>9</sup> While space precludes full coverage of social studies lesson content, it should be noted that peace learning at this school is not centered on the atomic bombings and ‘Japan-as-victim’ rhetoric. The curriculum covers expansionist policies of the Meiji government, the Sino-Japanese and Russo-Japanese wars, and the annexation of Korea, giving “the children an important opportunity to think about what language and culture might mean to the Korean people,” and “[we make] time to think about how [the Asia-Pacific war] was for the Chinese and other Asian people. Through this study, we foster understanding of the relationship between Japan and the other Asian countries.” (Otani, 2014, p. 139, translation ours)
- <sup>10</sup> A wartime production facility for military uniforms.

## APPENDIX

Figure 8. Song for peace



「この思いを未来へ」	<i>These thoughts, to the future</i>
平和って何だろう 平和って何だろう それは遠い遠い夢じゃないはず みんなが学校に行けること 友だちと遊べること 家族と一緒にいられること おなかいっぱい食べられること 話し合える 笑いあえる 助け合える わかりあえる それは小さいけれど確かな平和	What is peace? What is peace? It can't be just a far-off dream. That everyone can go to school, Play with friends, Be with family, Eat our fill, Talk together, laugh together, Help each other, know each other; A small but sure peace.
平和ってどうつくる 平和ってどうつくる それは難しいことじゃないはず 平和な世界をえがいてみよう 考えよう 自由に意見を言い合おう 意見をしっかり聞き合おう 一人ひとりを大切にしよう 思いやろう 行動しよう 小さな平和から大きな平和へ	How to create peace? How to create peace? It can't be that hard. Let's paint a picture of a world at peace, And then we'll see. Let's share our thoughts aloud, Listen to each other carefully, Treat all of us as precious, Think of each other, take action, Our small peace will grow.
平和にどう進む 平和にどう進む まずは世界中が平和を願うこと 被爆者の声を聞いてみよう 深く知ろう 世界のできごとに目を向けよう 小さな行動からはじめよう 一人ひとりが思いを持とう 伝え合おう 広めていこう 自分が平和をつくる世界へ未来へ	How to get closer to peace? How to get closer to peace? The whole world must yearn for it. Let's listen to the voices of the hibakusha, Let's know them deeply, Let's turn our eyes to the world, Let's start with the small things we can do, Let's hold our own thoughts dear, Let's tell each other, let's spread the word, For a world, for a future, where we all can build peace.
※ この大空に 広がれ平和 変えていこう この世界 小さな平和 大切に 一人ひとりが未来をつくろう	(Refrain) Peace, spread through the firmament, It's time to change the world. Cherish the small peaces, Each and every one of us will make the future.
※くりかえし	

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