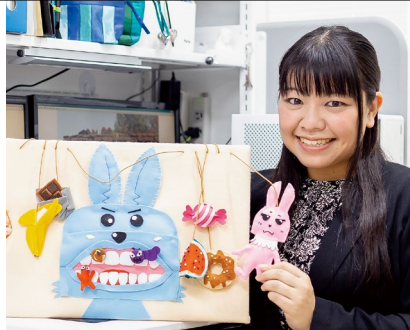




Prof. Iwamoto's hand-made panel theater enables children to learn about how tooth decay occurs and how to choose teeth-friendly snacks.

A scene from an oral health education workshop aimed at students training to become primary school teachers. By enabling them to practice in the primary schools where they are assigned, the program is expected to have a ripple effect across the entire state.



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Research interests

Pediatric dentistry,
regional dental healthcare

Do you remember the first time you brushed your teeth on your own? I suppose many people don't because toothbrushing is usually well-established already in children's daily routines when they first begin to understand the world around them.

My area of specialization is pediatric dentistry, and my research focuses on how to spread effective oral health education in countries and regions where such instruction is not well established. I first became interested in this theme during my residency, after completing my undergraduate studies, when I participated in a dental aid mission to Cambodia. Due to its historical background, the healthcare and educational systems in Cambodia have not yet been fully rebuilt, and dental hygiene habits, such as brushing teeth, are not widespread. For example, reports indicate that 44% of six-year-olds in Cambodia have never brushed their teeth. Consequently, as the country's economy began growing, with increased sugar consumption, more and more children started suffering from tooth decay, and this trend seemed to accelerate. To address this issue, the dental aid mission was launched, which involved dispatching dentists from Japan and providing dental care and education.



Instruction in dental care mainly by Cambodian dental students; they continued the activity during COVID-19 pandemic, which prevented travel from Japan.

I have participated in the mission several times and have gradually taken on a leading role in its operation. To make it more effective, I have begun providing support from a research perspective as well. At first, our efforts mainly involved providing treatment and education directly to children, but these were only temporary measures. To address the root of the problem, we began, in cooperation with local governments and universities, providing primary school teachers with tools and training in oral health education. We keep track of the program's effectiveness through statistical data from the results of school children's dental checkups. Initially, our educational efforts did not go smoothly because we didn't fully understand Cambodia's cultural and social background. For example, we used a picture-story show (kamishibai) featuring a hippopotamus to teach children about oral health, but many of them didn't know what it was because they had never seen this animal in media such as TV and books or in the zoo, all of which are not easily accessible to Cambodian children anyway. With guidance from local teachers, we made improvements and were able to better connect with the children. This experience taught us the importance of adapting our teaching methods to the local culture, rather than simply applying Japanese techniques. This was a vital lesson for us because we are aiming for lasting change, not just one-off efforts.

Our activities have also involved working with local dental professionals and students, sharing knowledge and expertise on oral health education. By gradually shifting the responsibility to local leaders, we hope to empower them to train even more educators, ultimately contributing to the development of a self-sustaining dental care and oral health education system in



Dental checkups are often conducted outdoors or in naturally lit hallways because some school buildings have no indoor lighting, which can be challenging with the exterior temperature reaching 35 to 40°C sometimes.

Cambodia. We are also hoping that by proceeding this way these efforts can spread on a broader scale, involving even neighboring countries.

Today, even within Japan, there are regional disparities in access to pediatric dental care. To address this issue, we have started a research project to develop a system that uses artificial intelligence (AI) for diagnosing and screening pediatric dental conditions. This system uses intraoral photos, which can be taken with a smartphone, and X-ray images, which any dental clinic can capture. By creating a low-cost system that young ones can access, regardless of where they live, we hope to support the oral health and growth of even more children, both in Japan and around the world.



Assistant Professor Iwamoto along with Cambodian school teachers, pupils, and parents. The pictures held by the children in the front row are from the picture-story show (kamishibai) set developed by the dental aid mission members for the school's oral health education.

Network-type Research Center

Network for Education and Research on Peace and Sustainability (NERPS)

The Network for Education and Research on Peace and Sustainability (NERPS) is an international network of educators, researchers, and practitioners collaborating towards the advancement of peaceful and sustainable societies amidst global challenges. The main objectives of the Network are as follows:

- 1.To identify research priorities and emerging issues related to peace and sustainable development;
- 2.To co-design and co-implement innovative inter- and trans-disciplinary education and research projects on "Peace and Sustainability" in collaboration with a wide range of stakeholders;
- 3.To collaborate with a wide range of local and international stakeholders, so that Hiroshima University, as a comprehensive research university, can contribute to the Sustainable Development Goals (SDGs) and to the creation of peaceful and sustainable societies in the face of increasing global challenges;
- 4.To establish a one-stop-center for collection and dissemination of information related to university-based research and outreach activities related to the SDGs; and
- 5.To coordinate university-based research activities related to the SDGs.



The logo symbolizes NERPS's priority focus on SDG 4 "Quality education" and SDG 16 "Peace, justice and strong institutions," while contributing to all of the 17 SDGs.

