

Tokyo University of the Arts COI Site

Disabilities and Expressions

Publication of the book:
“One Finger Nocturne
— the journey of students in wheelchairs
and the Tokyo University of the Arts”

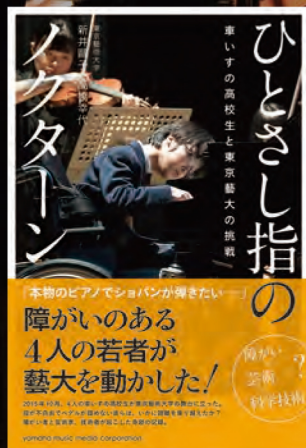
At the end of last year, a book titled “One Finger Nocturne — the journey of students in wheelchairs and the Tokyo University of the Arts” (written by Oko Arai / Yukiyo Takahashi, Yamaha Music Entertainment Holdings, Inc.) was published. This book records the journey of four high school students with disabilities who gave piano performances on the Sogakudo stage at the “Geidai Arts Special – Disability and Arts 2015”.

“I really want to play the piano!” , “I want to play Chopin that I love so much!” – each of the students’ passion led them to practice hard with one finger. Moved by their passion, the “Research on disabilities and expressions” group and the researchers at Yamaha’s Research & Development Division supported the four students. The students were taught musical expression, and given advice on how to play well with one hand. In addition, together with Yamaha, we developed two systems for this performance, one that plays the accompanying music to the melody, and another that automatically moves the piano pedals in time with the music.

This book portrays the challenges faced by all those involved in the project – the students who devoted themselves to practice, the teachers at the special support school trying to convey knowledge about music and how fun it can be, the researchers at Yamaha and TUA trying to improve the technology, and many others who supported the students.

Since publication, this book has been featured in the media, including newspapers, magazines and television. We received feedback from many readers with comments such as “how can I tell my class about this moving story?” , “I want to play the piano too!” and “this book made me realize how the students felt; that they welcomed the revolutionary support from the researchers” .

For what purpose does music, art and technology exist? How should they evolve in future? We hope that this book provides one answer to such an “unanswerable” question.



“One Finger Nocturne — the journey of students in wheelchairs and the Tokyo University of the Arts” (written by Oko Arai / Yukiyo Takahashi, Yamaha Music Entertainment Holdings, Inc.)

Arts & Science LAB. COI news

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”Study of BABEL” exhibition @Arts & Science LAB.

Culture Sharing

We have simultaneously opened a “Study of BABEL” exhibition on 1F of the Arts & Science LAB., as a project associated with the “Tower of Babel” exhibition at the Tokyo Metropolitan Art Museum. The reproduction we have on display not only uses the same oak board and completely recreates the visual image, it also uses the same paint as the original such as smalt and vermilion, reflecting the results of our collaborative scientific research with the Delft University of Technology in the Netherlands.

In the same venue, we have created a 3D model of the tower which is over 3 meters high, making the most of the high ceiling,

to make it look as if it had jumped out of the painting. This model tower incorporates a popular device called “let’s work at Babel” – the visitors are invited to take photos of themselves on an iPad and their faces are then reflected onto the animation of people working inside the tower. Also, a projection mapping technology is used to show the flow of time and emotions of the people as the tower was being built.

These attractions highlight the many interesting aspects of the “Tower of Babel” painted by Bruegel, and they also open the door to infinite possibilities to give the visitors a rich experience by creating a variety of contents inspired by just one painting.



Special Cooperation to the Tokyo Metropolitan Art Museum @“Tower of Babel” Exhibition

Culture Sharing

The original “Tower of Babel” painted by Pieter Bruegel is currently displayed in the Main exhibition hall of the Tokyo Metropolitan Art Museum. In the same space, there is also on display the COI Site’s reproduction of the artwork (Clone Cultural Property) which enlarged the painting at around nine times the area ratio, and recreates the brushstrokes as well as the texture of the oil paint on an oak board. This showcases to the visitors Bruegel’s remarkable gift to paint the smallest detail. In addition, there is a video work that revolves around the “Tower of Babel” which integrates the artists’ imagination with 2D and 3DCG audiovisual technology. This invites the visitors into the story of the painting, providing an unprecedented experience.

Communication education using robots

Robotics & Performing Arts



The world’s first model class for communication education using robots (Nagi town, Okayama prefecture)

On March 27th, we conducted the world’s first class on communication education using robots, in the town of Nagi in Okayama prefecture. This was a simple class where we would first show the children a standard conversation with the robot, and the children then think of a script and have their own conversation with the robot. The conversation does not necessarily have to be with a robot but undoubtedly the children concentrate better if it is a robot.

Classes using electronic blackboards and tablets are becoming the norm, and soon we can expect to have robots working in schools. We, the COI “Research on Robotics & Performing Arts” group in collaboration with Benesse, are working on creating and packaging state-of-the-art education program using robots.

Our progress report

Synesthetic media

“Research on Synesthetic Media” group has been working on various programs with the goal of becoming “an interface for cultural sharing” and to “share culture through playing and learning”. In 2016, we proactively conducted cross-sectional research with other groups and participating companies, and delivered presentations at various events. To conclude our activities, we presented our progress report in the round dome theater on 4F of the Arts & Science LAB on March 31.

In part one “the dome screening”, we showed “The Planet Cube” (Nahomi Maki), to showcase our research on 4K/8K high resolution CG rendering which increases the floating feeling and a sense of immersion, unique to dome theaters. We also screened an interactive film “Unfamiliar ones” (Ryoya Usuha) which links with the “animation to game” project presented in part two. We set up a system where the film content can be directly screened onto the dome theater from a PC. This made it possible to control the dome screen in an interactive manner using a remote control, making the experience even more immersive.

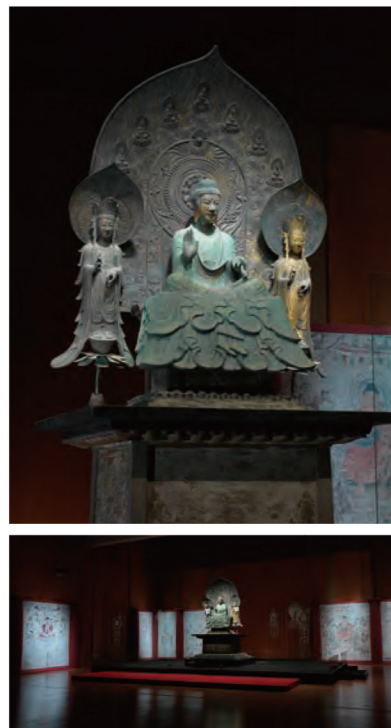
In part two “game reality”, a game using VR etc, jointly developed by the TUA Graduate School of Film and New Media and Square Enix Co., Ltd. was presented as an interim progress report ahead of the game exhibition planned in July this year.

In part three, there were three presentations. A “3D printed animation” and a smartphone “app” that supports people to play music by visualizing the volume of the drums were presented as



“synesthetic media” projects. A visual record that follows the process of developing “participative animation” jointly with Benesse and ADDS was also shown. We also described our activities conducted at events such as concerts where we would create an animation film out of the characters and drawings made by the participants. Furthermore, we recreated our participative contents like “the sandbox of Daidara” where the participants interactively change the shape of the sand in a box, and “3D-AR animation” where animals appear out of onomatopoeic words. The final presentation was then given by Koki Wakunami, a researcher from the National Institute of Information and Communications Technology on the progress of his research on holograms.

Akira Yokota, Visionary Leader, who will fulfil his term at the end of the year, and Seiichi Kimoto, Assistant Visionary Leader, kindly attended the presentation session and gave us warm words of encouragement regarding the use of the dome theater and our activities going forward.



“Debut of Cloned Shaka Triad Statues of Horyuji –The Calling from Asuka for the Future” exhibition @Takaoka city, Toyama prefecture

Culture Sharing / Cultural Diplomacy and Art Business

In June 2014, we started a general examination, including taking 3D measurements, of the Shaka triad statues which are national treasures found in the Main Hall of the Horyuji temple. Since 2015, we have worked with the cities of Takaoka and Nanto to create reproductions (Clone Cultural Property) of the Shaka triad statues and the pedestal, using traditional casting and carving techniques. The first stage of the project has been completed so we organized a public exhibition at Wing Wing Takaoka (Takaoka Lifelong Learning Center). We also displayed the reproductions of the mural paintings of the Main Hall of Horyuji temple before it was burnt down (Clone Cultural Property), so that the venue very much resembled the interior of the actual Horyuji temple. The gallery talks by the young researchers of the COI Site and others all proved popular, and there were demonstrations by a master carver from Nanto city who recreated the pedestal and by the metal carver from Takaoka city who recreated the inscription on the back of kou-hai great halo. For the duration of the exhibition, from March 10th to 20th 2016, we were able to provide a rare experience of being able to stand close and touch the Shaka’s clones, and feel the cultural property with five senses to around 18,000 visitors from both in and out of Toyama prefecture. Going forward, we will reproduce contents including the lost parts of the Shaka triad statue and the canopy to help recreate the Main Hall’s atmosphere.

Towards 2020 : Sports Arts Science (SAS)

Isao Matsushita

COI Sub Project Leader
Vice President, Tokyo University of the Arts

The preparations for the coming 2020 Tokyo Olympic and Paralympic games seem to be making progress around the country. It is a shame that problems about the cost overruns; the stadium; the logo and the bidding team’s scandal have hit the headlines more prominently than any positive news. Moreover, considering the endless sources of concern such as the current political situation in East Asia, and some countries seemingly moving in a direction against globalization, I wonder whether it is indeed possible to hold this celebration of peace in 2020.

The ancient Olympics were held roughly between 9th Century B.C. and 4th Century A.D., and the participating countries used to agree to a ceasefire to carry out this exchange of culture. Each country would send its best athletes for javelin, discus throw, marathon etc, supposedly to avoid unnecessary war by showcasing its strength. There were other popular events at that time, including poetry, music, painting, carving and theater. The Olympic games were indeed a celebration of sport and art.

There is an expectation for the 2020 Tokyo Olympic games to be an event that celebrates sport and culture by implementing Japan’s best scientific technology. Within the “Culture and Education Commission” of the Tokyo 2020 Organizing Committee to which I belong, there is much discussion about what sort of cultural events would be suitable.

Since last year, the TUA COI Site 2020 group has run numerous events with colleagues from the Faculty of Health and Sports Science of Juntendo University; Yamaha; Tokyu Agency Inc. “Sports Arts Science” (SAS), a collaboration of the three areas, namely, Sports, Arts and Science, has come under the spotlight as a new form of culture as we move towards 2020. Last summer, we used the Sogakudo concert hall for an event with athletes, musicians and engineers, using mats and balance beam. A sensor detects the athletes’ movements, which are converted into sound and lights by AI. By adding to music to all of this, it turns into an art work. There were so many nerve-wracking and exciting moments throughout the rehearsal and the actual event, and all those involved felt a sense of “joy to create”. We witnessed the birth of a new form of performing arts.

After that, Brother Industries also joined the project. They used and improved one of their products called AiRScouter, to free musicians from their music stands and let them walk around the stage. This widened the scope of possibility for musical expression, and for the creation of a new type of performing arts. There was also a symposium attended by those prominent in the field of sport, art and science. Even symposia are regarded as artworks at TUA, and such unique programs garnered much interest. Going forward, we plan to add literature to SAS and develop this into a new form of performing arts as “SAS Theater”.

I hope that the 2020 Olympic and Paralympic games and the legacy will help to create a new world combining art and science. We should nurture children’s “dreams” who hold our future in their hands and Japan should aim to be a disability friendly country where people with any type of disability can live comfortably.

Tokyu Agency
 “2020 Business Development Division”

Kazuhiro KANNO
 Kunihiko OMA
 Gaku TAKAGI
 Mayuko NISHIO



From left; Kazuhiro KANNO, Kunihiko OMA, Gaku TAKAGI and Mayuko NISHIO

– Please tell us about the “2020 Business Development Division” within Tokyu Agency.

This is a Division we created in April 2015 to respond to the needs of Tokyo 2020 within our company. Prior to that, this project was run on a part-time basis by colleagues in other Divisions. But since then, we can devote time and resources to gather and use the necessary information. We are linked to Tokyo 2020 in two ways: we work on marketing issues as a member of the Organizing Committee, and on PR issues linked to Tokyo 2020 that are led by the Organizing Committee and the Tokyo Metropolitan Government. We would like more people to know that Dentsu Inc. is not the only advertising company working on Tokyo 2020!

– In your opinion, what is the value in joining this project?

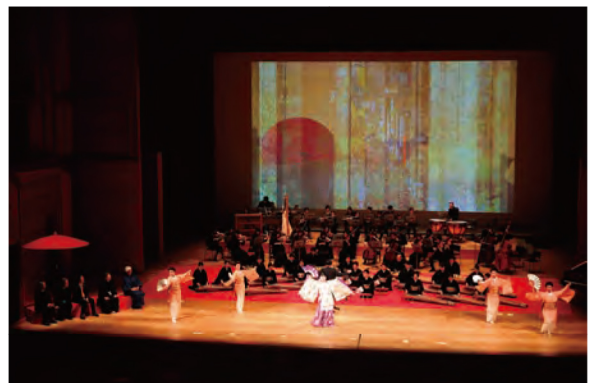
We expect this project to become a platform for building the Cultural Olympiad for Tokyo 2020. Collaborating on the COI platform with a group of experts on culture and art at TUA, and other companies with unique technology and knowledge will allow us to pursue our ideals separately from seeking short-term profits, and it is a shortcut to creating new ways of expression that the world has yet to see. Of course, we look forward to continuing our contribution to COI through the genre of communication.

– We have collaborated with Yamaha, Brother Industries and other companies. Please tell us about your prospects for how this will develop in future and the possibility of collaborating with other companies towards 2020.

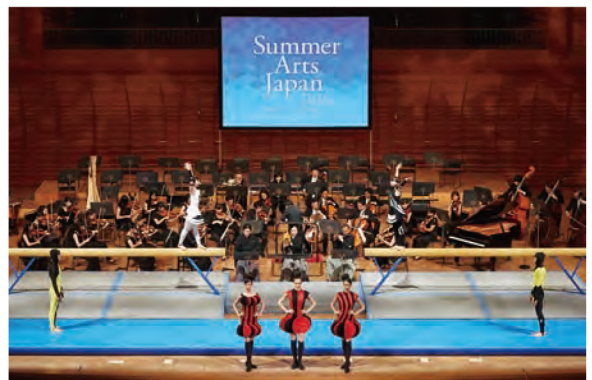
We would like to link up culturally and artistically with the technologies of Yamaha and Brother Industries that we have not seen before. We also hope to invite more partner companies into COI who will be essential in building the Tokyo 2020 Cultural Olympiad. We believe that the technology and knowledge of Yamaha, Brother Industries and other participating companies will contribute to building a new Cultural Olympiad full of excitement and surprise.



Concert & Symposium — ‘Sports Arts Science’, Sogakudo Concert Hall at the Tokyo University of the Arts



Concert & Symposium — ‘Sports Arts Science’, Sogakudo Concert Hall at the Tokyo University of the Arts



“Summer Arts Japan 2016”, Sogakudo Concert Hall at the Tokyo University of the Arts