4.Project Outcomes4-1. Summary of Outcomes4-1-1 Outcomes from an Academic Perspective

Hiroshi Fujino (Graduate School of Teacher Education, Tokyo Gakugei University)

This paper evaluates the results obtained in this project from an academic perspective. This paper summarizes the problems of introducing ICT into school education that were revealed in the preliminary survey and the results of the project's efforts to address them, and discusses the results with reference to research findings in Scandinavia, where ICT-based education is advanced.

[Problem 1]

There is a negative reaction to ICT in school organizations.

[Result 1]

The teacher's motivation was increased by setting up a tablet environment for each fifth grader.

[Consideration 1]

In Scandinavia, the use of ICT in school education has been conducted under the philosophy of "digital inclusion," and ICT resources are equally maintained in every school (Rohatgi et al., 2020). In the course of this project, the creation of a situation where one tablet device



1 to 1

can be used by each student, even in one grade, is an achievement that should be evaluated first as a first step toward the realization of digital inclusion.

[Problem 2]

The ICT environment for teachers is not ready, and the applications they use are limited.

[Result 2]

When Flipgrid was introduced as an application to be used in this project, it started to be used in other situations as well.

[Consideration 2]

It has been shown that teachers' usage levels are higher for digital tools that can be used universally in the classroom than for advanced digital learning tools (Fraillon et al., 2019). Flipgrid, the application used in this project, is not specific to any particular learning content but is a general-purpose application and is widely used in school education. The fact that it was introduced as one of the platforms for ICT education was also an important factor in promoting the use of ICT.

[Problem 3]

The place and opportunity for teachers to acquire ICT skills are dependent on individuals. [Result 3]

By holding online seminars and giving teachers opportunities to make presentations, they were able to gain confidence in using ICT and acquire skills.

[Consideration 3]

It has been pointed out that although the use of ICTs for communication and information sharing can enhance teachers' skills and knowledge, it is not enough to integrate ICTs into educational practice, and that ICTs need to be integrated into teacher training and professional development (Hatlevik, 2017). The online seminar provided an opportunity for professional development and increased awareness of the use of ICT in educational practice. In addition, the core members of this project regularly participated in the ATAC conference, which is a forum to discuss support for people with disabilities using assistive technologies, and expanded exchanges with practitioners and experts in special needs education, and shared the information obtained there within the school. It can be inferred that this led to the enhancement of teachers' professional skills in ICT utilization.

The increase in teachers' self-confidence, i.e., self-efficacy, can be regarded as a very important outcome. A Nordic study has also shown that teachers who have reached a sufficient level of self-efficacy in ICT use are more likely to adopt ICT in their teaching practices (Hatlevik, 2017). It has also been noted that teachers who have negative opinions about ICT use or low self-efficacy regarding ICTs find it difficult to work with colleagues who use ICTs at a high level (Rohatgi et al., 2020). In light of the findings that increasing the selfefficacy of individual teachers can promote collaboration among teachers, this project has achieved a very important result in this regard.

It has been suggested that addressing learner diversity should begin with collaboration among staff and sharing of



The online seminar provided an opportunity for professional development

practices (Ainscow et al., 2016). How to promote collaboration among teachers will be an important issue to be further examined in the future.

[Problem 4]

In schools where there is a place to consult about ICT, the effectiveness of ICT is recognized and its use is promoted, while in schools where there is no place to consult about ICT, its use is not promoted.

[Result 4]

In grade 5, where there is one teacher with strong ICT skills in each grade, the use of ICT has increased dramatically.

[Consideration 4]

There is a finding that teachers who frequently use ICT in the classroom are more positive about inter-teacher collaboration (Fraillon et al., 2019), and the fact that the use of ICT expanded in the first grade where there is a teacher with strong ICT skills supports this finding. Holding the aforementioned seminars may promote the spread of ICT use beyond the grade level to the entire school, but it is important to share information and practices from the immediate surroundings.

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4-1-2 Outcomes from an Educational Implementation Perspective

Interactive activities were implemented between year 5 and 6 children in Koganei Elementary School and children in three schools in Denmark. For the year 5 children, class teachers led the activities during the time allocated for general learning; for the year 6 children, a specialist teacher led the activities within the scope of English language learning. The Japanese teachers pursued this project in collaboration with the teachers in Denmark, communicating with them via online meetings, Flipgrid, email, and other means to facilitate interaction among the children.

Each individual teacher learned a great deal during this process. Some learned from the Danish teachers, while others gained new knowledge regarding the use of ICT as a result of the technical aspects of the interaction.

Learning during the Coronavirus Crisis Hideki Suzuki

Among the various videos that we received during the interaction via Flipgrid, one was particularly gut-wrenching. It was just before the Christmas holidays, when the number of coronavirus infections in Denmark soared, and the country was placed back in lockdown. The children we were interacting with via the interaction project could only access the platform

from home, and one of the messages we received during that time was really moving. Roughly translated, it was as follows: "So, they've told us we have to stay at home again. It's really terrible. We've been sent back home, and we have to do our school work here. Using the computer at home. We have to stay at home until 2021. I'm looking forward to Christmas, though. At Christmas, on December 24, we get presents. Corona's the worst. Even though I can go to school using the computer, I can't meet my friends. See you!"



A game made from scratch that I sent to Denmark.

These words, combined with the child's gloomy expression, resulted in a video that conveyed a sense of overwhelming resentment, grief, and sadness about the coronavirus crisis. When I showed the video in the classroom, the children too were reduced to silence. After seeing the video, they came up with things they wanted to do, such as sending a message back, or creating games on Scratch to cheer up the children in Denmark who had to stay at home. I supported their suggestions, and when we sent the messages and games, we received lots of friendly responses from Denmark.

During this interaction, I communicated constantly with the teachers in Denmark, and what impressed me most of all was their vitality. Japan too faced an almost lockdown-like situation in April and May 2020, and when I think back to that time, I found it really difficult to feel cheerful, and I remember that trying to think positively required considerable energy. But, despite their challenging situation, the teachers in Denmark were very positive about this project and quick to come back with responses such as, "Since we're in this situation, let's just do whatever we can," "Time and place are irrelevant if you have ICT, so let's just push ahead with the interactive activities," and "What shall we do next?" One reason for this may be that levels of ICT proficiency differ between Japan and Denmark, but I really felt that their enthusiasm indicated a difference in the fundamental level of positivity toward education itself.

Having learned from the Danish teachers while cooperating with them to implement this interaction between the children, we definitely need to find ways of using what we learned in our future teaching. Personally, I want to carry on implementing the sort of cutting-edge education that can lead the way for Japan's public schools to take advantage of ICT and make the concept of inclusive education a reality.

Online Interaction Makes the World Feel Closer

Kishio Kako (Koganei Elementary School)

For this project, we used Flipgrid to interact as a year group with elementary school students in Denmark. Watching the videos sent by the Danish elementary school students enabled our students to learn about how children living outside Japan were feeling as they experienced the coronavirus crisis. Although the Flipgrid app is asynchronous, the experience of using it to interact with children of the same age living overseas is sure to have been valuable. Becoming acquainted with the feelings of other children, not only in their immediate vicinity, but also elsewhere in the world, would have expanded our students' horizons.

The videos we received from Denmark included some that expressed negative feelings about the coronavirus crisis. In Japan too, there were some children who were feeling negative like these children in Denmark. But we noticed that hearing about the Danish children's negative feelings enabled our students to appreciate that children all over the world were feeling the same way, and they appeared to become more positive as a result. In fact, a number of our children communicated several times with children in Denmark, and some started trying to actively project positive feelings.

Across the year group as a whole, many of the children were enthusiastic about using Flipgrid to engage in interaction, but some were reluctant to send videos of themselves to strangers. Actual Flipgrid videos can be viewed only by the specified recipients, but it would be possible to film or photograph the screen during viewing. That was the reason for the children's reluctance, and it is commendable from an information ethics perspective. Accordingly, I did not insist upon such children interacting with the children in Denmark.

I had a real sense that our children's horizons were expanding naturally through engaging in this interaction with the elementary school students in Denmark. When children remain in Japan, the outside world feels incredibly far away; it is likely that many of our students believed children living outside Japan were different from themselves. However, the interaction with the students in Denmark would have enabled them to sense that the Danish children have the same worries and feel the same way about things as they do. Engaging in online interaction with elementary school students overseas helped to make the outside world feel closer. It made me personally want to continue creating opportunities for online interaction with elementary school students overseas.

The Involvement of Teachers Who Play a Supporting Role in Children's Learning

Makiko Sato (Koganei Elementary School) About a month after the interactive activities under this project started, Danish children in year 5 and above were restricted to online classes at home due to increasing COVID-19 infections. This was in response to a policy announced at the national level. As a result, we were unfortunately unable to proceed with the interactive activities using WizeFloor that we had planned. In Japan too, schools had been closed temporarily throughout the country in March 2020 following increased COVID-19 infections. At that time, it appeared that the



WizeFloor

majority of schools were dealing with the situation mostly by distributing texts and other study materials by hand or via postal mail, and delivering information about assignments via emails sent to all students at once, or via their websites. The school closure in Denmark made me appreciate the major differences between the Japanese and Danish responses to the same sort of temporary closure. In Denmark, ICT infrastructure is well developed, and even before the coronavirus, children had mastered skills such as logging into their personal accounts on a regular basis at school and at home to look at daily class schedules or check for homework assignments. It is assumed that these differences in terms of ICT accessibility such as welldeveloped infrastructure and widespread day-to-day use of ICT must have had a positive impact during the shift to online classes.

During this interaction using Flipgrid, the Danish schools taught us specific ways of dealing with the switch to online classes following school closure in terms of adjustments and care for the children. In Denmark, the children's learning assignments were changed from the usual school-based class approach to setting large assignments on a monthly basis and making adjustments to allow each child to proceed at their own pace. Some children undertook the assignments on their own, but the teachers encouraged them to work in small groups. During aroup activities in Japan, it is usual to organize students into aroups according to strictly objective criteria and have them work on projects in line with their level of ability. However, we found big differences at our partner schools in terms of, for instance, the extent to which they allowed the children themselves to choose who they would work with on their assignments. The teachers explained that they would keep an eye on what the groups and individuals were doing, and would intervene only when the students' work ground to a halt or they could not cope. Meanwhile, for children requiring educational support, it was regarded as important to go beyond one-on-one assistance and take an inclusive approach by enabling them to learn alongside others. As they dealt individually with children requiring support, for instance, teachers would gradually shift them toward small-group activities. The key difference between Denmark and Japan was that in Denmark the main role of teachers was to set learning assignments, then play a supporting role in the children's learning as a coordinator.

The Potential of School Education Using Flipgrid

Kaori Nakamura (Koganei Elementary School)

Like other schools in Japan, Koganei Elementary School was closed for three months (from March 1 to the end of May 2020) following the declaration of a state of emergency due to the novel coronavirus. Nothing like this had ever happened before, even when I myself was a child. When the school reopened, the children were uncharacteristically quiet, and spoke little. In addition, there were rules restricting chatting among the children during class, as well as group activities, to prevent infection. Nonetheless, use of Flipgrid in my English classes enabled mutual learning that transcended time and place.

First, we implemented interaction using Flipgrid for years 6 and 5. The year 6 students made videos introducing themselves and giving presentations on the topic "This is my hero," which we planned in March. The year 5 students made videos simply introducing themselves. The two year-groups sent messages back to the students who had sent them videos. They included messages from the year 5 students to the year 6 students saying, "It's amazing you can speak English so fluently. I want to learn to speak English like you." Messages from the year 6 students to the year 5 my English wasn't very fluent, so I think it's great you can speak English that well. It made me think that I need to work hard to keep up with the year 5 students." There was evidence of mutual learning through this interaction between different year groups that transcended time and place.

In the second semester, the year 6 students used Flipgrid to conduct interaction with international students at Tokyo Gakugei University. The year 6 students worked in groups to devise quizzes about Japanese culture, which they made into videos and sent to the international students, who sent back replies. Being keen to convey an impression of Japanese culture, our students thought hard about what they included, and improved not only their English ability, but also their presentation skills by making use of photos, music, PowerPoints, and so on. Reflecting on the project, the children wrote that they felt a sense of joy and accomplishment at getting their ideas across to someone else, and that they wanted to interact more with people from other countries using English. They had become capable of interaction transcending time and place with people outside the school. In December, interaction with the children in Denmark started. Our students were successful in using Flipgrid to transcend time and place, connecting with elementary school students in another

country far away. The children were bursting with anticipation about using video to communicate with elementary school students overseas about life during the coronavirus crisis, and they were very excited from the time they made their self-introduction videos. But the videos made by the Danish children who could no longer go to school due to lockdown showed little excitement. Viewing messages such as "I want to see my friends" and "Homeschooling's boring" made our students acutely aware that they should not take their own ability to go to school for granted. The videos conveyed to our students what Denmark was like: gardens like small parks in Japan, the attractively decorated bedrooms of the elementary school students, the forests and snowscapes right next to their houses, and so on. As a result, the interaction gave them direct experience of a foreign culture without leaving Japan. As the interaction went on, there were more messages showing mutual consideration, such as "Have a good day, "Please be safe," and "Take care," and we sensed that the communication via Flipgrid was becoming increasingly meaningful.

The main focus of this project was interaction among the children, but if the teachers continue to interact using Flipgrid, it should be possible to continue exploring the possibilities for education now and in the future from a diverse range of perspectives.

Using ICT to Generate the Motivation to Connect

Toshiya Mitsui (Koganei Elementary School)

Even before this project I was using Flipgrid to support learning in English classes. The students would use Flipgrid to film as they introduced themselves in English, then play back the videos and review their performance. I used the ability to do this to conduct activities that allowed the children to learn from their friends' self-introductions as they improved the accuracy of their own pronunciation. Flipgrid uses AI to automatically convert the spoken word into text and display it as subtitles when the pronunciation is correct. Of course, incorrect pronunciation results in the wrong words being displayed. The children began to pay attention to their pronunciation and refilm their videos repeatedly, trying to get Flipgrid to display the right English subtitles. I used activities such as these as a creative strategy to help the children lose their resistance to speaking in English by having fun speaking out loud.

It was within that context that I set up opportunities for interaction with children overseas, implementing activities to boost my students' readiness and motivation to speak English. When I showed the children video messages from the elementary school students in Denmark, they were somewhat apprehensive, saying, "What are the children in Denmark talking about?" and "How should we reply?" At the same time, however, they were highly motivated to make contact with them.

We started by using machine translation to turn the video subtitles into Japanese and understand their meaning. Then we created replies in Japanese using Word and translated them to make our Englishlanguage replies. The children learned from each other what to do and how to use Flipgrid, Word, and so on, and were pleased when they managed to create replies



on their own. Next, they practiced by reading the replies they had made out loud over and over, then they filmed themselves. Their tenacity was apparent when they repeatedly refilmed their videos until their own English displayed correctly as subtitles. When the videos were uploaded, they appeared nervous. But, once "likes" arrived from the children in Denmark, they were reassured. Then they would want to send another message. The children appeared to have overcome the barrier that separated them from the rest of the world by realizing that a single "like" emoji is an amazing symbol shared worldwide that has the power to reassure people.

This is an age in which children in Japan can use ICT to connect with children living far away who speak a different language. They can transform a world that was previously far away and unrelated to their own lives into something familiar. If children are motivated to make connections and they have access to ICT, they can forge new connections through their own efforts and by collaborating with their classmates to help and learn from each other, even without any input from a teacher. Meanwhile, teachers should focus on taking steps to keep increasing motivation even further and on devising creative strategies to enable children to experience a sense of accomplishment. It is the dawn of a new form of education.

4-1-3 Outcomes from a Combined Academic and Educational Implementation Perspective In order to combine the outcomes of this project described in relation to 4-1-1 and 4-1-2 above and put forward recommendations in a form that can be utilized henceforth in educational settings within Japan, it is important to organize these outcomes from two perspectives—use of ICT and inclusive education. Moreover, as the GIGA School Project has already started throughout Japan, any recommendations should probably be presaged on the assumption that each child will be in possession of a tablet device.

In line with these approaches, the outcomes of the project are as summarized below.

Use of ICT

It is crucial to establish a structure that supports teachers in a diverse range of ways.

- •Providing ICT accessibility for teachers that makes the most of each child having a tablet device The GIGA School Project is creating an environment in which each child has a tablet. This will dramatically improve the learning environment for children, but numerous issues remain with regard to ICT accessibility for teachers. It is necessary for teachers to have at least as many devices as the children and to have the time available to try out various initiatives within the new environment, among other conditions. Conversely, if such conditions are assured, use of ICT will make substantial progress.
- •Creating Opportunities to Give Presentations/Be Recognized
 - Modern educational settings are beset by a whole range of challenges; the reality is that just dealing with these challenges is all many teachers can manage and it is difficult for them to feel motivated to take on something new. To address this issue, rather than supervisors and managers giving instructions, it is likely to be more effective if they create opportunities to recognize teachers' efforts in terms of taking on new projects. Establishing an opportunity of some kind to give a presentation—that is to say, an opportunity to be recognized—will support those teachers who want to try something new. During this project, for instance, holding regular online seminars, at which the teachers took turns to give presentations, boosted their motivation considerably.
- •Assigning support staff and ensuring that the support system works effectively Particularly for teachers who feel that they lack ICT skills, it is extremely reassuring to have a setup that enables questions to be asked straight away when a problem arises, and makes staff available to help with preparations for using ICT. As this project required teachers to use mainly Flipgrid, an app many of them had no experience of using, support staff were assigned to provide appropriate assistance, and this system worked extremely effectively.

Inclusive Education

•Providing Guidance That Supports Children's Feelings

Although there were differences between Japan and Denmark in terms of school closures and lockdowns in cities, the fact that coronavirus made it impossible to carry on school life as usual was the same in both countries. The situation was considerably worse in Denmark, but the greatest impression left by this project was the positivity of the Danish teachers and the attentive care this positivity enabled them to provide to the children. With regard to ICT accessibility, as in Japan it appeared to be very difficult to obtain the cooperation of some

families, but there was much to learn from the vitality that inspired the Danish teachers to say, "Let's just do whatever we can." If anything, it was the Japanese teachers who tended to be more negative about being unable to hold the school sports day or residential events; a change of attitude in this regard would be beneficial.

•Trusting the Children

Both countries have children who experience a range of learning difficulties, but in Denmark there were more situations in which choices were left up to the children themselves, and this is worth learning from. There can be a tendency for learning support to involve input that is considered at great length by a teacher and "given" to a child, but in Denmark there were situations in which it was left up to the children to decide who to study with. A lesson worth putting to use in future was that inclusive education should not be something created by adults trying to influence a situation to make it inclusive; instead, the key is to create an atmosphere that empowers the children themselves to create an inclusive environment.

4-2. Dissemination of Outcomes

4-2-1 Outcomes Shared or Disseminated via Conferences and Other Researcher Networks (Including Online)

August 22, 2020

Koganei Elementary School ICT Group online seminar: Using Microsoft Teams to Avoid Stalled Learning, Session 4

Overview: The interaction between children in Japan and Denmark conducted as part of this project was dependent on an environment in which each child has a tablet. Hideki Suzuki (Koganei Elementary School) gave a presentation on how to take advantage of such an environment. The presentation was accompanied by a panel discussion involving Shota Koike (Chiba University Faculty of Education Affiliated Elementary School) and Sayaka Kano (journalist).

Accessed by: Approximately 150 people involved in education

September 4, 2020

<u>15th Cyber Symposium to Share Progress since April in Implementing Remote Classes at</u> <u>Universities, etc., organized by the National Institute of Informatics</u>

Overview: A symposium addressing internet-enabled implementation of education during the coronavirus crisis. Hideki Suzuki gave a presentation about Koganei Elementary School's initiatives using the internet, including the activities undertaken as part of this project.

Accessed by: Approximately 150 people involved in education

September 19, 2020

Koganei Elementary School ICT Group online seminar: Using Microsoft Teams to Avoid Stalled Learning, Session 5

Overview: The main app used for the interaction between children in Japan and Denmark conducted as part of this project was Flipgrid. Hideki Suzuki (Koganei Elementary School) gave a presentation on how to make the most of Flipgrid and a variety of other apps.

Accessed by: Approximately 100 people involved in education

October 20, 2020

<u>68th Fun Science Seminar Online</u>

Overview: In this online science education seminar on the theme of integrating instruction and assessment, Toshiya Mitsui (Koganei Elementary School) gave a presentation on methods of instruction using the internet learned from initiatives implemented during this project. Accessed by: Approximately 50 people involved in education

November 7, 2020

Koganei Elementary School ICT + Inclusive Education Seminar

Overview: A seminar on the theme of achieving inclusive education that makes use of ICT. Hideki Suzuki and Makiko Sato (Koganei Elementary School) held a panel discussion with Hitoshi Nakagawa (The Open University of Japan) and Satoshi Sakai (Kagawa University) at which experiences including actual class scenarios were described. "Children Who Experience Learning Difficulties Are Saved by One Device per Child and Digital Textbooks"—Koganei Elementary School ICT + Inclusive Education Seminar, Session 3, Report 1— Children & IT (impress.co.jp)

<u>—"I Understand, But I Can't Do it': Regaining the Ability to Learn Using ICT"—Koganei</u> <u>Elementary School ICT + Inclusive Education Seminar, Session 3, Report 2—Children & IT</u> (impress.co.jp)

Accessed by: Approximately 200 people involved in education

December 5, 2020

ATAC Conference 2020

Overview: Hideki Suzuki and Makiko Sato gave presentations on support that makes use of ICT for children who experience learning difficulties, focusing on insights acquired through the interactive activities under this project.

Accessed by: 170 people involved in special needs education

December 11, 2020

Japan Academy of Universal Designed Education online workshop

Overview: Hideki Suzuki participated as an instructor in the academy's workshop focused on research into universally designed classes. He gave a presentation on inclusive education that makes use of ICT, drawing on the outcomes of this project.

Accessed by: Approximately 70 academy members

February 6, 2020

Koganei Elementary School ICT Group online seminar: Side-by-Side Use of ICT, Session 1

Overview: Makiko Sato gave a presentation covering topics such as effective ways of using WizeFloor, a projection system widely used in Danish schools, and apps used in the course of technical collaboration with the Alexandra Institute that was conducted as part of this project. Accessed by: Approximately 120 people involved in education

February 7, 2021

Utsunomiya University Educational Implementation Forum

Overview: Hideki Suzuki spoke at a symposium on the theme of learning possibilities for children during the coronavirus crisis. His presentation addressed the international learning making use of the internet that took place as part of the education implemented under the project.

Accessed by: Approximately 150 people involved in education

4-2-2 Outcomes Shared with or Disseminated to Elementary and Secondary Educational Institutions (Including Online)

November 20, 2020

Overview: Koganei Elementary School teachers participated as instructors in a workshop organized by the city of Matsue. Hideki Suzuki gave a presentation on implementing inclusive education making use of ICT, drawing on the outcomes of this project. Makiko Sato gave a presentation on providing mental health care for children harmed by the coronavirus crisis, which has become a serious problem in Denmark, as in Japan.

Venue: Ito Elementary School, Matsue, Shimane Prefecture

Participants: Approximately 50 teachers employed by the city of Matsue

November 30, 2020

A Koganei Elementary School teacher participated as an instructor in a workshop for teachers at Samisato Elementary School, Asahi, Toyama Prefecture. Hideki Suzuki gave a presentation on implementing inclusive education that makes use of ICT, drawing on the outcomes of this project.

Venue: Samisato Elementary School, Asahi, Toyama Prefecture (Hideki Suzuki delivered his lecture online)

Participants: Approximately 30 teachers from Samisato Elementary School and neighboring elementary schools

February 2, 2021

A Koganei Elementary School teacher participated as an instructor in an ICT workshop organized by Atsugi City Board of Education. Hideki Suzuki gave a presentation on implementing inclusive education that makes use of ICT, drawing on the outcomes of this project.

Accessed by: Approximately 50 members of Atsugi City Board of Education and teachers employed by the city of Atsugi

4-2-3 Future Outlook Regarding Dissemination of Outcomes (Including Online)

(1)Regularly hold online Side-by-Side Use of ICT seminars

As it is anticipated that activities will have to be conducted under coronavirus conditions for some time to come, use will be made of the internet to hold regular seminars presenting the outcomes of this project. The seminar content will also be edited as necessary and released on a YouTube channel at a later date in a form designed to appeal broadly to the general public.

(2)Hold Session 4 of the ICT + Inclusive Education Seminar

This seminar is held annually, and next time it will incorporate the outcomes of this project. The seminar is planned for fall; if possible, it will be held in a seminar room at the Microsoft Japan Shinagawa headquarters, but if coronavirus



YouTube Channel

restrictions make that impossible, it will be held online instead.

(3) Presentation at PC Conference 2021

An oral presentation of this project's outcomes will be given at PC Conference 2021 (location to be decided), which is organized by the CIEC (Community for Innovation of Education and learning through Computers and communication networks).

(4) Presentation at ATAC Conference 2021

At atacLab's ATAC Conference 2021 (location: Kyoto or online), a seminar session will be led to give a report on insights acquired through this project's outcomes.

4-2-4 Propagation of Benefits to Countries Including the G7 and G20 Nations, and Outlook for Future Collaboration or Interaction (Including Online)

The university believes that by utilizing the global networks of Microsoft Japan Co., Ltd. and Microsoft Corporation, our experience during this project enabled us to establish a route for connecting and conducting interaction with schools that are using ICT at an advanced level. During this project, interaction was conducted only with Denmark, but it would not be out of the question to seek new partners according to individual teachers' research interests.

In fact, when an appeal was sent out to the MIEE (Microsoft Innovative Educator Expert) online community for cooperation in a survey similar to the one administered to the Danish teachers, responses were received from more than 40 countries and regions. In particular, there were responses from teachers in Canada who had worked for Canada's education ministries and departments designing EdTech training for teachers based on the principles of inclusion, while information was received from Finland about implementing education using WizeFloor. The university believes this input can be used to develop further interaction in future.

Turning to Japan itself, it would be feasible for teachers at schools other than Koganei Elementary School who participate in the Japanese Microsoft Innovative Educator Expert program to undertake similar interactive activities. The university will therefore explain the methods used to implement this project to the more than 200 teachers throughout Japan who are participating in the program, and urge them to extend their international cooperation. Nonetheless, it cannot be denied that the depth of the teachers' learning experience would differ considerably depending on whether they traveled overseas to actually observe the type of education provided and talk with local teachers on-site, or whether the interaction was conducted solely online. If the International Collaborative Program for Education in a New Era is implemented again next academic year (and if the coronavirus crisis subsides), the university is determined to apply for it again and ensure that this time we send teachers overseas.

4-3. Project Continuity

4-3-1 Plan for Implementing Future Activities That Draw on the Outcomes of This Project (1)Establishment of examples to serve as models

Above all else, the university regards it as of crucial importance to continue establishing examples of education addressing use of ICT and inclusivity in tandem that can serve as models. As the GIGA School Project will give each child their own tablet device, one particular need is likely to be examples demonstrating how the GIGA School Project could be used to pursue inclusive education. With regard to actual classes, the university will seek to identify as many concrete examples as possible to ascertain which apps or other resources, provided to which children, in which subjects, are effective.

(2)Continual recommendation of examples

Establishing examples of education combining use of ICT and inclusivity is meaningless unless these examples are publicized and recommended. It is of paramount importance to keep making recommendations that publicize the examples widely. Specific efforts in this regard comprise the sorts of initiatives described in 4-2-3 above, but what Japan's public schools are calling for most of all is access to actual classes. The university hopes to be able to offer access to classes once again, keeping a careful watch on the coronavirus situation as we do so. If this proves impossible, we also aim to provide live online streaming of classes.

(3)Continued international interaction and related outreach

There are still few public schools in Japan that have managed to implement any form of international interaction at all. However, there can be no doubt that a global perspective is indispensable for the children who will be the citizens of the future, and it is therefore necessary to give careful thought to how international interaction should be implemented in order to expand children's horizons. From that point of view, the know-how in relation to international interaction acquired through this project could be put into practice at many public schools as well. The university therefore intends to offer relevant recommendations in the form of packages incorporating specific methodologies.

With regard to the fact that teachers themselves can learn a great deal from international interaction, the university acquired know-how that enables collaboration online in one form or another, as described in 4-2-4 above. This could include connecting with an educational institution overseas, implementing a joint project, or conducting teacher training. The university intends Koganei Elementary School to take the lead in establishing examples of such activities that can serve as models.