

2-2-1 Previous Collaboration or Interaction with Educational Institutions in Japan, etc.

Koganei Elementary School (affiliated to Tokyo Gakugei University)

Partly because of its location on the same campus as Tokyo Gakugei University, Koganei Elementary School has a particularly close collaborative relationship with the university compared to the other affiliated schools and kindergartens. The elementary school's collaboration with the university's Department of Special Needs Education has always been tight-knit, and to date the university has achieved excellent outcomes using the elementary school as its designated school to implement and study inclusive education making use of ICT. This has included implementing three previous MEXT projects: the Model Project for Inclusive Education System Development, the Research Project to Assess Use of Learning Support Devices and Other Educational Materials, and the Research Project on Methods of Course Instruction for Schoolchildren and Others Who May Have Developmental Disabilities.

In the 2020 academic year, collaboration between Tokyo Gakugei University and Koganei Elementary School included the following:

- Teaching practice (for approximately 150 teachers)
- Koganei Elementary School teachers taught classes on subject-teaching methods as part-time lecturers at the university
- University faculty members delivered instruction and lectures for Koganei Elementary School's teaching-related study sessions
- University faculty members delivered lectures for Koganei Elementary School's online seminars
- Equipment including an electronic blackboard was installed at Koganei Elementary School

2-2-2 Previous Collaboration or Interaction with Educational Institutions Overseas, etc.

Vestervangsskolen (Aarhus, Denmark)

Vestervangsskolen is a special needs school located in Randers, Denmark. In 2019, teachers from Koganei Elementary School toured the school; they observed classes conducted using WizeFloor and exchanged views on implementation of learning support with Vestervangsskolen's teachers. The elementary school's teachers also toured the Alexandra Institute, one of the companies that developed WizeFloor, where they discussed topics including the possibility of sharing technical information, making WizeFloor available in Japan in future, and jointly developing content.

3.Details of Project

3-1. Background to Implementation of Project

3-1-1 Background to Determining Project Theme (Situation in Japan and Overseas, and Issues)

Tokyo Gakugei University was selected for participation in MEXT's fiscal 2013-2014 Model Project for Inclusive Education System Development, with Koganei Elementary School, one of its affiliated schools, as its designated school. Ever since then, the university has worked continually to address the issue of how ICT can be used to achieve inclusive education by taking action to implement such education, as well as participating in two additional MEXT projects: the 2018-2019 Research Project to Assess Use of Learning Support Devices and Other Educational Materials and the fiscal 2019-2020 Research Project on Methods of Course Instruction for Schoolchildren and Others Who May Have Developmental Disabilities.

In the process, the university has achieved a number of outcomes, including developing tablet-based assessment of reading and writing abilities, and examining a model for identifying reading- and writing-related issues at an early stage and supporting children with learning difficulties. The university also demonstrated the efficacy of using apps that read aloud and digital textbooks for learners to help children who have difficulty reading.

In addition, members of the university traveled overseas to investigate and research the WizeFloor floor projection system developed by companies including OM Interactive of the UK and Denmark's Alexandra Institute. With regard to the Alexandra Institute in particular, the university's investigations included conducting a class using the company's product, observing the product's actual use in a Danish special needs school, and discussing how it can best be used to effectively support children who experience communicative and cognitive difficulties.

As a result of this track record of investigation and research, the university has succeeded in verifying that the actual concept of using ICT to bring about inclusive education is valid; however, it has also become apparent that a number of issues stand in the way of achieving that goal. With regard to access to ICT, plans call for the GIGA School Project to deliver a dramatic improvement in ICT accessibility within schools, so we believe that particular requirement will be largely met. However, considerable thought still needs to be given to changing teachers' awareness of ICT's potential.

The university's designated school, Koganei Elementary School, has studied subject teaching for a long time. As a result, it attains extremely high standards in both its implementation and study of subject teaching, but for that very reason, it has proved difficult for the school to take an innovative approach to considering how new technologies in the form of ICT could be used to change the way children learn. Of course, the school's staff does appreciate the need for the sort of inclusive education that makes use of ICT, but teachers' motivation to actually change their own classes can only be described as sluggish.

However, the school's inability to take effective action during the period when schools were closed due to the coronavirus crisis in March 2020 spurred it to radically change direction toward making active use of ICT. Specifically, it issued a Microsoft Office 365 A1 account to all children, teachers, and administrative staff. The accounts were employed for educational guidance and other purposes by using Office 365 apps, and in particular Microsoft Teams, to connect school and home in an initiative that attracted a considerable reaction from society at large. The school has subsequently used Teams on multiple occasions, disseminating information about its use.

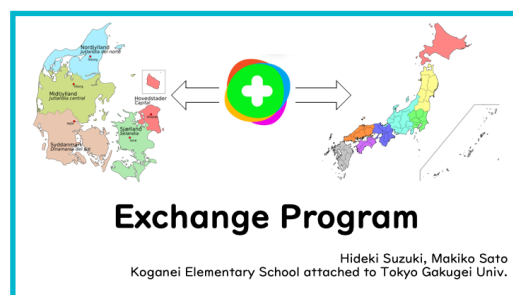
The university planned this project to create an equitable educational environment where everybody's potential for growth is assured, and to highlight its benefits throughout society. Such an environment is created when children's access to ICT radically changes the nature of learning itself and teachers assist children who experience learning difficulties while supporting that process of change, so that children with a variety of different learning disabilities can learn together.

3-1-2 This Project's Approach to the Above Circumstances

Within a group setting such as the classroom, provision of learning support geared to the individual is subject to issues such as potential resignation to disabilities or other difficulties on the part of children and their parents/guardians, or misunderstanding and prejudice among others. Some difficulties remain for which individual attention cannot be provided, even if it is necessary, due to various contextual factors such as surrounding attitudes and the demands of the disability itself. Efforts have been made to promote understanding and awareness among others as a means of addressing such discrimination and prejudice with regard to disabilities, but the extent to which raising awareness alone can secure the understanding of others is limited. It is therefore necessary to provide the right environment and make modifications in terms of design and other aspects of learning provision.

Within this context, the GIGA School Project implemented from April 2020 is set to establish an environment in which use of ICT is commonplace in all schools. Establishing an environment where each child has a tablet device, promises to make it easier to ensure that regular classroom settings throughout Japan facilitate access to educational ICT that is optimized for each individual child and nurtures creativity.

This project compared the Danish schools and the Japanese elementary school, focusing primarily on access to ICT, methods of acquiring ICT skills, and differences in how ICT was used for learning. In addition, a video-based discussion platform was employed to use the interaction among the children themselves as the basis for comparing the support provided to children who need it and weighing up new methods of support and other aspects of teaching.



3-2. Details of Project

3-2-1 Comparative Study

Before the interaction with Denmark commenced, a survey regarding use of ICT in schools was administered to gain an understanding of the relevant issues. The survey targeted teachers involved in the interaction and 100 other teachers working in elementary schools all over Japan. During the interaction itself, the teachers in Denmark were also asked questions based on the results of this survey, and their responses were compared with those obtained in Japan. A partial excerpt of the survey results is reported below.

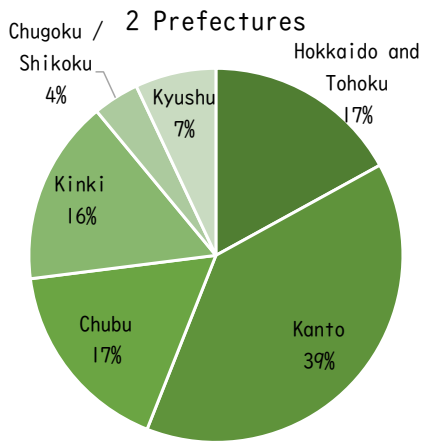
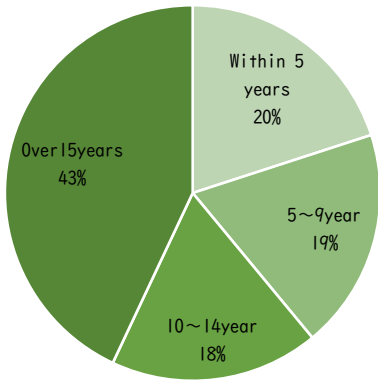
	Results from analysis of pre-project questionnaire	Results of survey conducted in Denmark
Factors facilitating use of ICT in schools	<p>A support system including assignment of ICT specialist staff</p> <ul style="list-style-type: none"> ●Support is provided to every school by establishing the optimal conditions in terms of equipment and staffing. ●Training is planned, and opportunities for training are also assured. ●In schools that take action to promote understanding regarding ICT use, a relationship is observed between higher levels of ICT provision and easily accessible ICT-related consultation, and greater efficacy of learning support tools. 	<p>A system of conducting classes as a team, given that use of ICT is the norm</p> <ul style="list-style-type: none"> ●Many respondents stated that nationwide ICT infrastructure should be provided, and use of ICT devices in class should be the norm. ●Class planning is undertaken as a team. ●Schools receive full support from IT-related companies.
Factors hindering use of ICT in schools	<p>The head of the organization is negative about use of ICT</p> <ul style="list-style-type: none"> ●Provision relating to the school environment, such as equipment and budgets, is inadequate. ●Teachers other than those responsible for ICT have insufficient ICT-related knowledge. ●Opportunities for training are inadequate, making acquisition of the skills necessary to use ICT dependent on individual efforts. ●Issues relating to interpersonal relations include one's boss having a negative attitude to ICT. 	<p>In a situation where the cooperation of families is necessary in encouraging the use of tablet devices, there are differences in the types of cooperation different families can provide.</p> <ul style="list-style-type: none"> ●Infrastructure is provided within the school, but sometimes circumstances within children's homes mean that online classes do not go well. ●There are issues in terms of access to ICT, such as not possessing a tablet or other device, or parents/guardians being unable to cooperate.

The survey started during the coronavirus crisis, and around one month after the start of the interaction itself, Denmark returned to lockdown conditions, causing our partner schools to close, either for the higher year groups, or for all year groups, depending on the school. As a result of this situation, it became impossible for all the teachers to get together online at the same time to hold meetings. The university therefore used an online form-based questionnaire as the primary means to assess the situation, and shared information individually by email and other means.

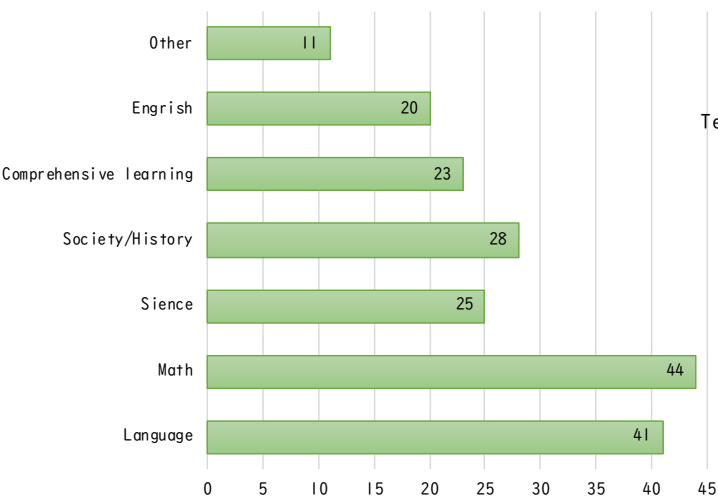
In order to compare the results with those of other countries, a group of Microsoft Innovative Educator Experts in Global conducted a survey by calling for cooperation in a questionnaire form. The results of the survey are reported in the following pages.

Japan

1 Years of experience

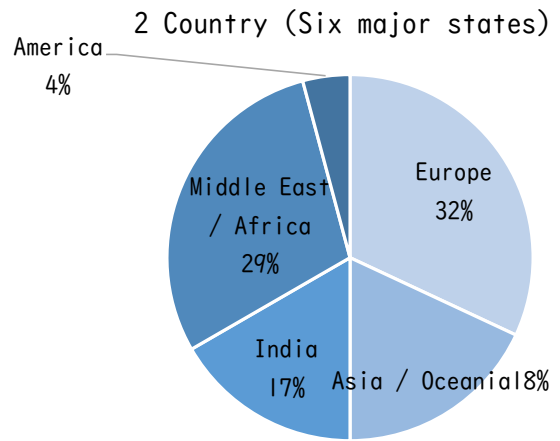
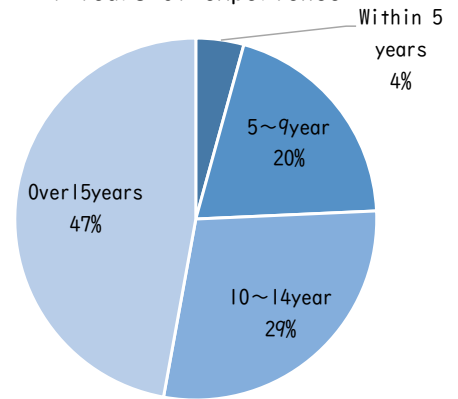


3 Subject in charge

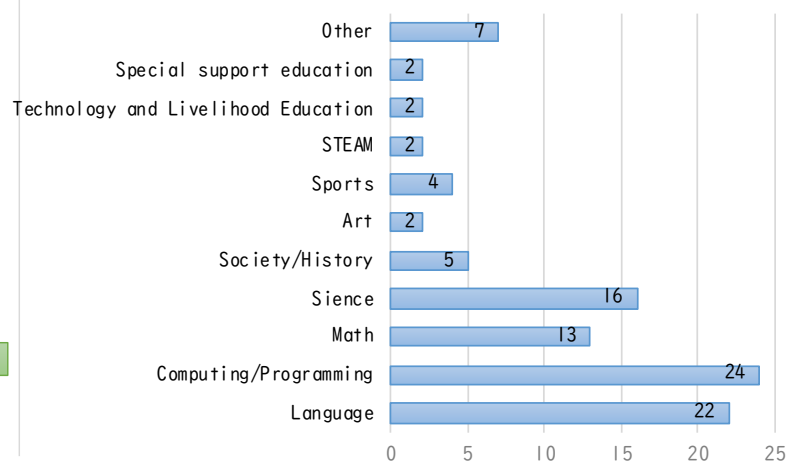


Global

1 Years of experience



3 Subject in charge

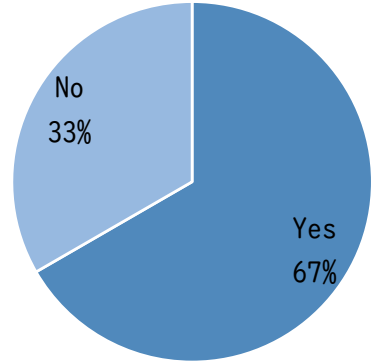
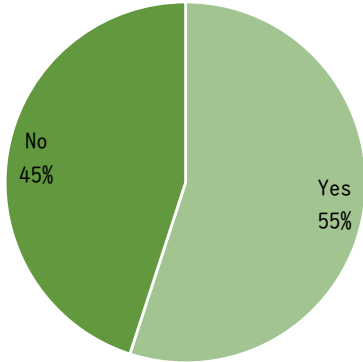


Japan

Global

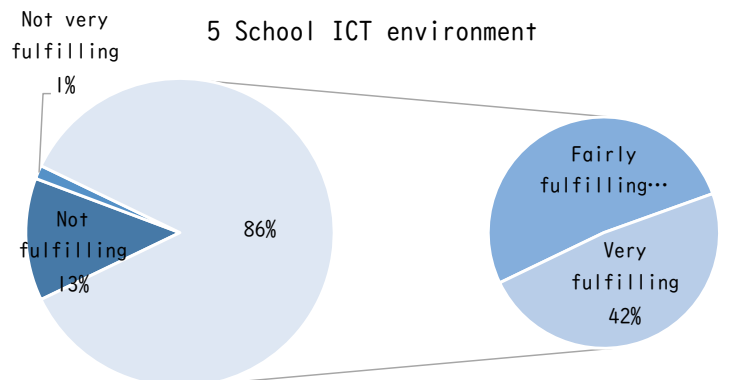
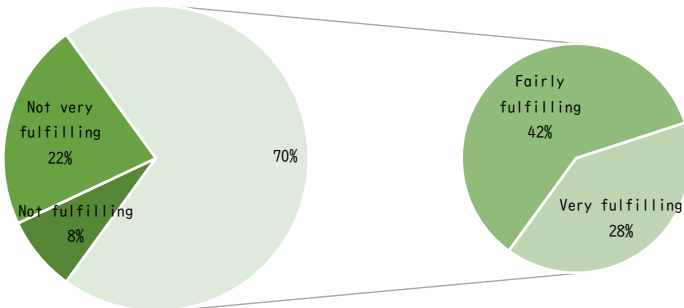
4 Are you in a position to lead ICT in the school?

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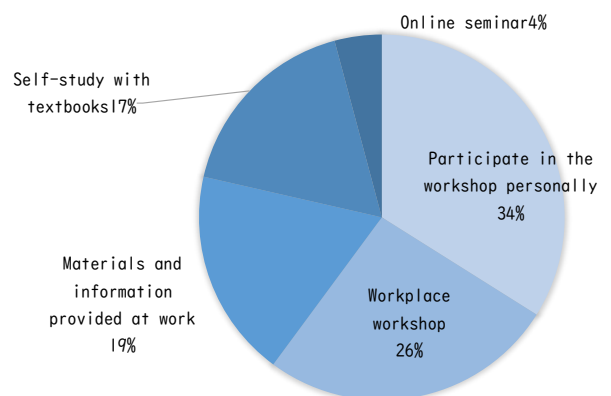
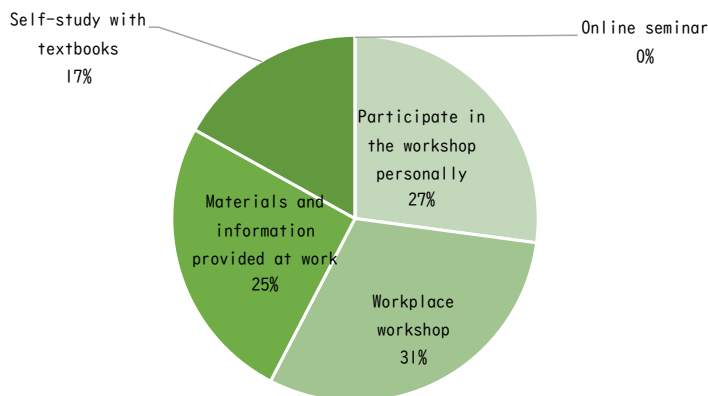
5 School ICT environment

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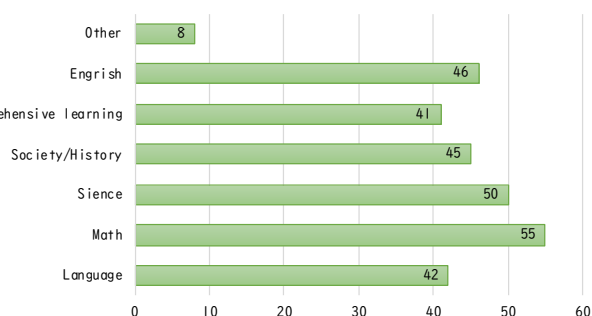
6 Acquire ICT skills

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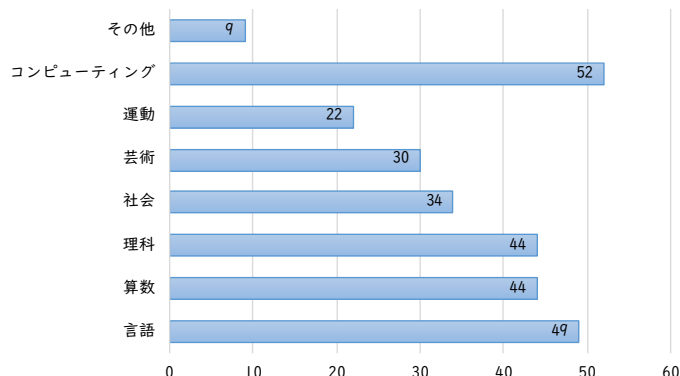
Japan

7 Subjects using ICT



Global

7 ICTを使用している教科



Analysis

(1) ICT environment in the workplace

There was no difference between the responses of 70% in Japan and 86% in the six major states as a whole for "well-developed". In Japan, the factors of a well-developed environment were the budget and the availability of Wi-Fi environment in the staff room. Lack of facilities for internet environment and security concerns were found to be the main factors affecting the lag in maintenance. In the six major states, the level of satisfaction with the ICT environment in the workplace was high in India, while in Europe and some parts of Asia and the Middle East, the response was "not well developed at all," indicating differences by region.

(2) ICT used in the classroom

There were differences in the devices and applications used. In Japan, items that can be used even without an Internet environment, such as DVDs and picture cameras, were mentioned, while in the six major states, online applications were often mentioned, suggesting that the environment has an impact on what is used.

(3) How ICT skills are acquired

There was no difference in the way they acquired ICT skills, but in the six major states, online seminars and social networking services, which were not mentioned in the answers in Japan, were used as learning opportunities.

4) People's understanding of the use of ICT

In terms of "understanding of the people around me about the use of ICT" in the workplace, 10% of the respondents in Japan answered "do not understand", while 8% of the respondents in the six major states answered "do not understand", showing no difference. In Japan, 10% of respondents answered that they did not understand, while 8% of respondents in the six major states answered that they did not understand. In order to promote the use of ICT, it is necessary to improve the environment in terms of equipment and personnel, training opportunities, and implementation plans.

3-2-2 Discussion Sessions Held to Enable Interaction among Teachers

July 18, 2020	Online meeting: The overall approach to conducting the interaction and the pre-project survey were discussed.
August 12, 2020	Online meeting: The overall approach to conducting the interaction was discussed with the involvement of relevant personnel at Microsoft Denmark ApS.
October 9, 2020	Online meeting: The practicalities of conducting the interaction, including the design of Flipgrid, were discussed with the involvement of relevant personnel at Microsoft Denmark ApS and teachers from the partner schools.
October 2, 2020	Briefing and first training session for teachers involved in interaction
October 30, 2020	Briefing and second training session for teachers involved in interaction
November 6, 2020	Discussion session held to coincide with the ICT + Inclusive Education Seminar The interim appraisal of the project was discussed.
February 8, 2021	Briefing and third training session for teachers involved in interaction: Information on outcomes was shared and the preparation of the report was discussed.

3-2-3 Process (Schedule) of Teacher Interaction Program

October 2, 2020	First training session for teachers involved in interaction
October 13, 2020	Start of interaction with Hendriskholm skole
October 30, 2020	Second training session for teachers involved in interaction
November 15, 2020	Start of interaction with Tinderhøj skole and Rødovre skole
November 17, 2020	Start of "Covid 19" Project with Hendriskholm skole
December 7, 2020	Start of "Covid 19" Project with Tinderhøj skole and Rødovre skole
February 8, 2021	Third training session for teachers involved in interaction

3-2-4 Investigation and Research Activities at Overseas Educational Institutions, etc.

3-2-5 Educational Implementation Activities at Overseas Educational Institutions, etc.

Within this project, investigation and research activities are inseparable from educational implementation activities, so the two are described together.

As teachers could not be sent overseas, it was impossible to undertake investigation and research activities or educational implementation activities in Denmark. The university therefore started by administering the online pre-project survey within Japan. During the course of the interaction with teachers in Denmark, it then examined issues that emerged through the comparative study from the perspective of combining ICT with inclusive education.

Although the teachers interacted with each other, it proved impossible for them to achieve meaningful interaction simply by holding meetings, primarily because they had to do so online. The university addressed this situation by planning a project involving online interaction between the children in the Japanese and Danish schools. The aim was for the Japanese teachers to learn through discussion and other interaction in the course of implementing this project jointly with the teachers in the Danish schools.

When planning the interaction between the children, it was considered too difficult for them to engage in meaningful discussion through questions and answers in an online meeting format due to the challenges posed by the time difference and the requirement for English speaking ability. A decision was therefore made to conduct the interactive activities using an asynchronous video discussion platform (Flipgrid).

As they implemented this interaction project, the teachers communicated with each other and conducted discussions using the most appropriate means in each situation, including online meetings, Flipgrid, and email. By collaborating to implement activities in this way, the teachers were able to share information about the relevant issues, and take an action research-based approach to resolving those issues.

(For details of the survey, see Comparative Study in section 3-2-1 above. For information on the online educational implementation activities, refer to Outcomes from an Educational Implementation Perspective in section 4-1-2 below)