

Current Status and Issues of ICT Utilization Primary Education in Japan

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<Abstract> This paper is going to describe the status and deployment of teachers/teaching staff who can use Information and Communication Technology (ICT) as of 2016. Currently, the teaching staff situation can be divided into two groups, which are teachers who use computers in class and those who do not. This disparity exists even among teachers who are in charge of the same grade level. In other words, even in the same grade level, there are differences in class teacher competency. This creates a difference between classes that use computers and classes that do not. It is unfair for children to have different knowledge obtained from different teachers. This report examines the status and issues of ICT use in elementary level education to find out why there are differences in ICT use among teaching staff.

<Keywords> elementary education, ICT education, education gap, school education

1. Introduction

Among other countries, many teachers in Japan are not confident in their ability to use computers in the classroom. Many teachers are concerned about achieving perfection that they worry about what will happen if they fail. Many teachers in their 20s and 30s have been using computers on a daily basis since their student days, but many teachers over the age of 40 remarked that they have never learned how to use a computer, not even the basics. This is because many teachers who work outside of Japan have never learned how to use a computer. We wondered if there were similarities between teachers outside and inside of Japan.

2. As a Problem Location

There was a Survey conducted by OECD (TALIS) consisting of 34 Countries in 2013." regarding work hours, that point out Japanese teachers often work 7-8 hours per day. In addition to teaching, many teachers spend time preparing school documents and responding to parents, and many work more than 8 hours a day. The table also shows that teachers have low confidence in their own ability to draw out active learning, and that the percentage of teachers who implement the use of ICT and other methods are low. In the Questionnaire survey conducted with elementary and junior high school teachers, many said that they were not able to conduct ICT-enhanced classes because they lacked the confidence to do so on their own.

3. Purpose and Methods of the Study

3.1. Purpose of the Study

For example, if one class in the same grade in an elementary school has a class that makes use of computers and the other class does not, We can say that an educational disparity has occurred. Opportunities for learning should be treated equally, but they have become more unequal. Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) implemented a four-year plan to improve the environment for the computerization of education, spending about 671.2 billion yen over the four years from 2014 to 2017. According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2014) "Roundtable Meeting on the Promotion of ICT-based Education" report, only 30% of all local governments have plans for the development of ICT educational environments, and according to the "Guide for Promoting ICT Environment Development in Schools for Local Governments" issued by the MEXT (2017), There is such a wide spread that the LAN development rate ranges from 0 to 100%, and the disparities and temperature differences among local governments are extremely large.

We hypothesize that the ICT in education has not progressed as planned over the past four years. The purpose of this study was to verify the current status and issues of ICT utilization by actually entering school sites as ICT support staff and checking the actual status of

ICT utilization in the classroom.

3.2. Research Methods

Interviews were conducted with 32 teachers from 21 elementary and secondary schools. The time frame was conducted in person between June and November 2019.

4. Survey Results

4.1. Results of Interviews

Survey population: 32 elementary and junior high school teachers from across Japan

Survey date: June to November 2019

Survey method: Interviews

Number of schools visited: 21

With ICT support staff: 6 schools

Name of prefecture of employment: Osaka, Aichi, Hyogo, Okinawa, Tottori

The survey was conducted on general teachers, vice principals, principals, and teachers in charge of information.

4.2. Questions

We asked the respondents whether they had an ICT support staff or not, and noted their opinions on ICT education, ICT support, and ICT support staff, then analyzed them by utilizing KH-Coder, a software program that performs quantitative analysis of text-type data.

The total number of extracted words tallied up to 1,845, which were in 101 sentences and 31 paragraphs. The words that appeared most frequently were ICT (57), support (41), teacher (21), being (14), person (13), and need (11) (Table 1).

Table 1 Extracted words from interviews for teachers

extracted word	number of occurrences
ICT	57
support	41
teachers	21
I'm here (I'm here, I need you)	14
person	13
necessary	11
conjugation	10
school	9
be saved	9
use	8

When the KWIC concordance checked the sentences containing the top frequent words, it said, "I feel that many people and information about ICT education and teachers are needed. Considering the lack of help from teachers in the field, older people, and people who do not have much knowledge, it would be very much appreciated if there were people who could teach us how to use ICT appropriately and provide information. In addition, ICT will be more important for both teachers and students in the future, so I think we need more opportunities to learn and more people to teach us."

"I think ICT support staff are necessary. Teachers have an image that it is difficult to use ICT, so they are not positive about it and do not have time to study. I would like to see support for teachers as well as for students."

"I would like ICT support staff to be assigned by all means. ICT environment has changed a lot in recent years, and the speed of change is fast."

"I feel that a lot of people and information are needed regarding ICT education and teachers. Considering the lack of help from teachers in the field, the elderly, and those with little knowledge, it would be very helpful if there were people who can teach us how to use ICT properly and give us information."

In addition, "ICT will be more important for both teachers and students in the future, so I think we need more opportunities to learn and more people to teach us." I think we need more opportunities to learn and need more people to teach us.

Sumimura et al. (2019) examined the status of ICT support staff duties and the differences in the support duties sought by teachers. They reveal the reality that for teachers in elementary and junior high schools, they need assistance in conducting classes and school duties, and they strongly desire the assignment of ICT support staff. As can be seen from the results of the interviews above, only 6 out of 21 schools have an ICT support staff. Regardless of whether there is a current ICT support person or not, all schools want ICT support. Currently however, only a few schools are working on introducing a support person, indicating that ICT support is necessary and that they want someone who supports in the field of ICT. In addition, it's clear that many teachers in the educational field are too busy with their own work to spend time studying how to use ICT, and lack the

knowledge and confidence in using it.

4.3. Analysis Results

An extracted word cluster analysis was conducted. The unit of aggregation was a paragraph, the method of cluster analysis was

the Ward method, and the minimum number of occurrences was set to 5 with a high drop-off range in reference to the level of annexation.

Figure 1 shows the results from the correspondence analysis of the extracted words.

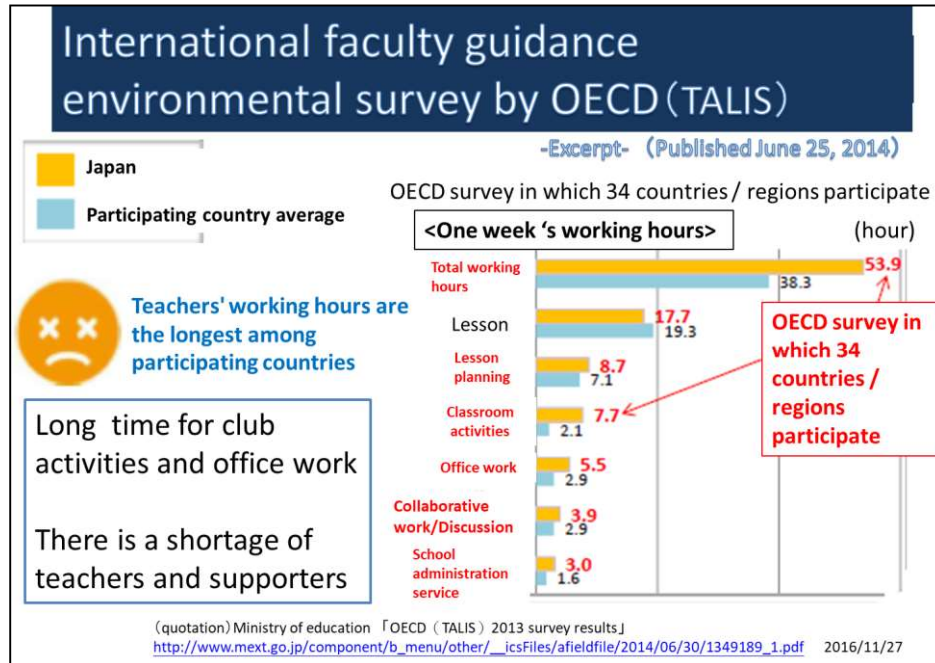


Figure 1 International faculty guidance environmental survey by OECD (TALIS)

We can see the KWIC concordance and consider from the notated sentences, with a group of people who are familiar with PCs and who provide support and advice to the faculty, Although the results differ from school to school, they are closely related to the second group of teachers who are busy and need ICT support staff with specialized knowledge to assist them with ICT support and teaching (Figure 2).

Figure 3 shows the correspondence analysis of the extracted words (scatter diagram), and the classification is clarified by the bubble notation as shown in Figure 2. Among them, the words "teacher," "need," and "support" are superimposed on the word "ICT".

The KWIC concordance confirms that "As an ICT support person, I would appreciate it if you could provide regular support to help teachers learn to use ICT easily in the classroom."

"ICT support staff are very helpful because they are able to respond immediately to any problems we have. I really need them."

"ICT support staff are necessary. We need ICT

support staff. We need consultation on where to use ICT and how to use it. We need support in preparing and operating content and tools." As mentioned above, there are opinions that ICT support staff is necessary and that they should be available for class support and consultation.

On the other hand, "We have ICT support staff, but we don't need people who only do what they are told. It takes a lot of time and effort to tell them what to do. We want someone who understands the position of the teachers and their movements, and who will do things on their own."

"ICT support staff should be experienced and able to give advice. Someone at the level of a supervisor is good. If you have someone who is only there for six months or one year, or someone with a low level, it's useless if it's not ongoing. Some said that ICT support staff should also have the knowledge of education and communication skills."

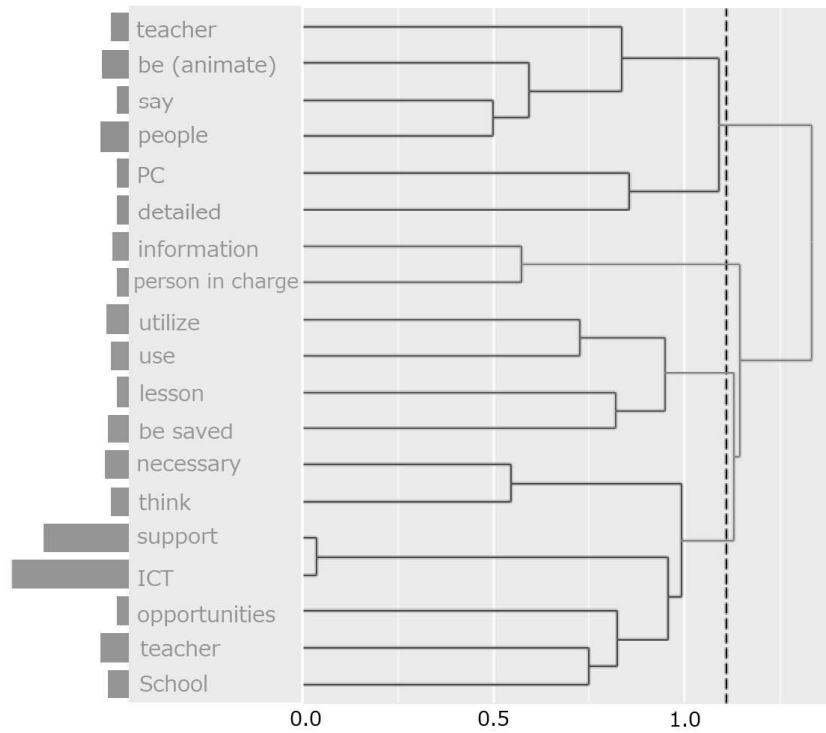


Figure 2 Extracted words Correspondence analysis table

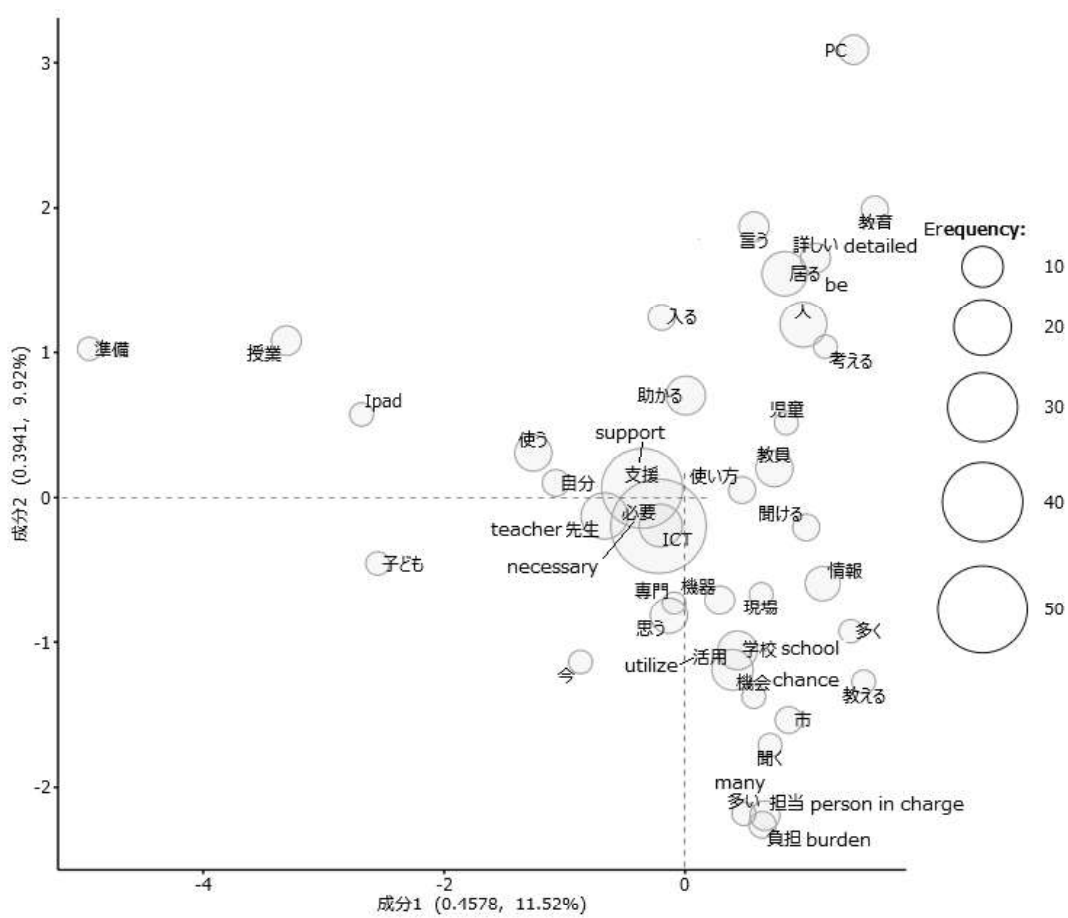


Figure 3 Extracted words Correspondence analysis (scatter plots)

5. Summary and Discussion

It was found that ICT support personnel are necessary in schools, and that all the teachers strongly desired to have someone supporting them, given their heavy workloads, limited knowledge of ICT use in the classroom, and difficulty in finding time to study. Although the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has instructed that one ICT support staff member should be assigned to every four schools, the current situation is that some schools have not assigned even one ICT support staff member. ICT support staff schools only once a week or a few times a month. Despite this, it was clear that the skills of the ICT support staff required to be highly skilled. Lead managers who can give advice on how to use ICT in the classroom, communication skills are desirable. Not only are ICT support personnel needed in the future, but we also need to improve the awareness of each municipality to increase the number of required personnel. Improving the treatment of ICT support personnel is a challenge for the future.

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