Reading Picture Books Using ICT in EFL: Preparation for Letter Learning

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In all Japanese public elementary schools, fifth and sixth graders have learned English in the period of foreign language activities once a week since 2011. The Ministry of Education, Culture, Sports, Science & Technology（MEXT, 2009）proposed that the overall objectives of foreign language activities would be "to form the foundation of pupils' communication abilities through foreign languages"（p. 1）and that "teachers should focus on the foreign language sounds and use letters of the alphabet and words as supplementary tools for oral communication, in effort not to give too much burden to pupils"（p. 3）. In other words, MEXT suggested that weight should be attached to sound but little weight to letters. Its suggestion may be appropriate from the point of view of the order of learning；the introduction of sounds of English to elementary school students who are supposed to be beginners in English learning is given priority and letters are seen as subsidiary because such a way of starting language learning is the same way in which children acquire their first language（L1）first by hearing a large amount of its sounds and then by learning how to read letters.

There are, however, differences between children who acquire English as their L1 and students who learn English in elementary schools in Japan. The first difference is the starting age of direct contact with English. Native English-speaking children are exposed to English sounds as soon as or before they are born, while Japanese students in the fifth and sixth grades begin to hear English sounds when they start learning English at the age of ten or eleven. The second difference is the amount of English sounds provided as input. Native English-speaking children grow up hearing a wide range of English sounds from when they are born, spoken by their caregivers, which they absorb unconsciously. On the other hand, Japanese students in the fifth and sixth grades can be exposed to a small amount of English sounds, which are spoken to them by instructors or played on CD players for forty-five minutes a week. Considering these two differences, it is not supposed to be easy for Japanese elementary school students to learn English through foreign language activities in the same way as children acquire English as their L1.

MEXT（2009）proposed in the curriculum guidelines that foreign language activities in elementary schools should be conducted mainly with oral instruction and that letters be used as supplementary tools. This seems to be interpreted in the way that the treatment of letters in foreign language activities is left to each instructor in each class. In other words, even if an instructor is a homeroom teacher or an assistant language teacher, s/he can decide whether s/he introduces letters in foreign language activities and can use them in the way which s/he thinks appropriate. In actual classroom teaching of foreign language activities in Japan, the treatment of letters is different among instructors. Some instructors do not use any letters, others use letters with pictures on flashcards without referring to the letters, and others show target sentences to them and have them read the sentences, pointing to each letter in them.

Some researchers have proposed that letters should be incorporated into foreign language activities in elementary schools in Japan（e.g., Allen, 2007; Arakawa et al., 1999）. Firstly, learning letters is an effective means to become aware of knowing the relation between sounds and letters（Allen, 2007; Arakawa et al., 1999; Menyuk & Brisk, 2005）, which makes students grasp sounds of English more accurately（Allen, 2007; Arakawa et al., 1999）. Knowing the relation between sounds and letters can also cause words to be retained in the memory（Arakawa et al.1999; Jones, 2003; Wells, 1986; Wilkinson, 1980）. Secondly, the introduction of letters into oral instruction leads to an increase in vocabulary. Increasing vocabulary is crucial for language learning（Cameron, 2001, Krashen, 1989）. Thirdly, seeing letters in foreign language activities satisfies the intellectual craving of fifth and sixth graders as seeing letters leads to the growth of the ability of analysis and the development of abstract concepts（Arakawa et al., 1999）. In this way, introducing letters into oral instruction in foreign language activities seems to play an important role for fifth and sixth graders.

One of the ways to show letters to children is reading books. Especially, reading picture books to children is said to be an important means to develop their reading ability in their native language（Menyuk & Brisk, 2005）. Children look at a picture in a book and sometimes follow letters by hearing sounds which are read aloud. All of these three factors（i.e. letters, sounds, and pictures,）are integrated and contextualized, which supports children's understanding of the text（Jones, 2003; Kost, Foss & Lensini, 1999; Oxford & Crookall, 1990; Plass, Chun, Mayer, & Leuther, 1998; Terrell, 1986）. In this way, children can recognize some letters making up a word or words while hearing sounds and pondering their meaning from a picture.

Reading English picture books can also provide Japanese elementary school students with three important factors in reading ability（i.e., letters, sounds, and pictures as visual aids）. On hearing sounds, they can guess the meaning of a word from a picture, so that they can connect

the sounds with the meaning, connect the letters with the meaning, and connect the sounds with the letters. These three factors are supposed to help them get to know and remember words which they encounter in books.

Recently, there have been various kinds of picture books using Information and Communication Technology（ICT）. They can offer the above-mentioned three factors simultaneously. Also, reading picture books using ICT may be similar to the situation in which an adult reads a picture book to children. One kind of picture books using ICT can work with a pen which contains data downloaded from a computer. They are supposed to be easy and convenient to use in foreign language activities in Japanese elementary schools. Students can read them alone and get to know words. Therefore, this study investigates whether or not reading picture books using ICT would be effective for introducing letters to Japanese elementary school students.

Introducing Letters to Fifth and Sixth Graders in Japanese Elementary Schools

As stated above, MEXT（2009）proposed in the curriculum guidelines that letters should be used as a support for oral instruction. However, Arakawa et al.（1999）pointed out that letters should be taught in foreign language learning in elementary schools in Japan. Arakawa et al. reported that some fifth and sixth graders had anxiety about oral instruction in foreign language activities；others stated that they could easily remember English when letters were shown to them in class. Arakawa et al. explained the significance of using letters in oral foreign language learning, as follows：

1. Using letters in oral foreign language learning satisfies fifth and sixth graders' intellectual craving.
2. Using letters in oral foreign language learning helps fifth and sixth graders grasp the sounds of English consciously and analytically.
3. Using letters in oral foreign language learning helps children remember and acquire the content.

Using letters in oral instruction seems to facilitate cognitively and affectively the development of children's foreign language ability. Furthermore, they reported from their survey that letter learning motivated sixth graders to read books in English.

Therefore, it seems to be significant and effective for Japanese elementary school students to learn letters in foreign language activities. There are both explicit and implicit ways to expose children to letters. However, as MEXT（2009）suggested that letters should be used as a complementary aid to oral instruction, explicit ways should be excluded. One of the implicit ways to help children become familiar with letters is to read picture books to them. They can

be exposed to letters in them, either intentionally or unintentionally. The next section shows how reading picture books to children affects them.

Reading Picture Books to Children

Reading Books to Children and Letter Learning

Reading picture books to children provides them with a stimulus for the start of reading （Menyuk & Brisk, 2005）. While they are listening to stories and looking at letters and pictures in picture books, they come to pay attention to shapes and sounds of letters and gradually to recognize the relationship between them. Sometimes, once they are interested in letters, they may ask the person who is reading a book to them how a word which they are looking at is pronounced. In this way, they begin to read for themselves.

Adams （1990, p. 63） proposed that having familiarity with letters is advantageous for learning to read, as follows：

- A child who can recognize most letters with thorough confidence will have an easier time learning about letter sounds and word spellings than a child who has to work at remembering what is what.
- Children who automatically see the letters as wholes will see the words as patterns of letters. Children who do not, will have to work on the patterns of the individual letters as well.

By having familiarity with the letters, children come to know the relation between letter shapes and sounds clearly and quickly, and then they can automatically recognize the spelling of a word not as a line of individual letters but as a pattern as a whole. Reading books to children can be one of the opportunities to familiarize them with letter shapes and sounds.

Reading Picture Books to Children and Vocabulary

Reading picture books to children can also build vocabulary. Jones （2003） indicated that listening to a text with visual and verbal annotations available was the most effective method of vocabulary acquisition. In the study by Jones, the English-speaking students in a university French course who were allowed to access visual annotations or visual and verbal annotations in listening to the text significantly performed better on the delayed recall vocabulary post-test than those who were not allowed visual or verbal annotations. Kashani, Sajjadi, Sohrabi, and Younespour （2001） also demonstrated in the listening comprehension test that the students who were shown pictures in relation to the text before or during listening to it performed bet-

ter than those who were not shown the pictures at all. Kashani et al. argued that "the inclusion of visual annotations enhanced students' ability to comprehend the listening scores in pictures-before and pictures-during conditions" (p. 81). According to Oxford and Crookall (1990), "the use of visual imagery for vocabulary learning is based on making associations between a picture and a word," (p. 16) and "most learners are capable of associating new information to concepts in memory by means of meaningful visual images, and that visual images make learning more efficient" (p. 16). Therefore, combining listening to text with seeing pictures in relation to it can provide greater cognitive power (Oxford & Crookall, 1990; Terrell, 1986).

Reading picture books to children can simultaneously provide them with letters, sounds, and pictures which are related to texts. Children who don't know how to read can understand the meaning of a word by connecting its sounds to a picture, and then they can recognize a series of letters in the word as its spellings.

Reading Picture Books using ICT

Recently, there have been some studies to investigate the effectiveness of books using ICT in learning both L1 and second language (L2) (e.g., Jones & Brown, 2011; Verhallen, Bus, & de Jong, 2006). Verhallen et al. (2006) investigated the effects of books using ICT on comprehension of 5-year-old children who learned Dutch as an L2. The results showed that reading books using ICT had a greater effect on children's comprehension than hearing books read by adults. In addition, Jones and Brown (2011) surveyed the effects of reading books using ICT on comprehension of third graders. According Jones and Brown, there was no difference in comprehension between reading books using ICT and reading print books, while their observation indicated that "children clearly displayed an interest in the interactive features such as having the books read to them, having words pronounced for them, viewing various pictures, and sound effects" (p. 18).

Furthermore, Zucker, Moody, and McKenna (2009) suggested that books using ICT would be helpful in developing vocabulary. Moody (2010) also stated that children can "allow children to explore storybook reading mediums without adult assistance which can result in language and comprehension gains" (p. 31) and "enjoy books independently" (p. 27). Thus, the activity of reading picture books using ICT might be effective for introducing letters to Japanese elementary school students because it can give them access to letters and develop their English vocabulary as an adult reads a picture book to them.

The Purpose of This Study

The purpose of this study is to explore whether or not reading picture books using ICT would be effective for introducing letters to Japanese elementary school students by analyzing the development of their vocabulary and by analyzing their feelings about reading picture books using ICT. The following research questions are proposed.

1. Did the participating students think that they had learned words during the reading session of reading picture books using ICT?

2. What words did the participating students think that they had learned during the reading session of reading picture books using ICT?

3. How did the participating students feel reading picture books using ICT?

Method

Participants

The participants were 63 fifth graders at an elementary school in Tokyo. They already had 15 English classes of 45 minutes per year in the first and second grades, 25 in the third and fourth grades, and 35 in the fifth grade. In total, they had received 115 English classes, which were conducted in the content-based or theme-based programs. However, they had not yet learned how to read formally.

Materials

The materials were electronic books and wireless, battery-operated pens. Words, sentences, and pictures on the books are read or sung in English, when the reader touches them with the pens. The titles of books used in this study were *1-2-3 Dora!*, *The Opposites*, *ABC Animal Orchestra, Pooh Loves To…, Curious George Color Fun, National Geographic Kids: Activity Cards - Land Animals, National Geographic Kids: Activity Cards - Birds and Sea Animals*, and *Super Speller*. Some of them are available in Japanese translations, but whether the participants had read them in Japanese was not surveyed.

Procedure

In the present study, the students attended the reading session and read the books for 10 to 15 minutes per day for ten days in February and March, 2010, during which there were no English classes. During the reading session, each student chose a different book which s/he preferred. Every student had the pen which could output sounds and songs with the synthesized voice in all the eight books.

Data Collection

The questionnaire with two questions was carried out in the students' classrooms three days after the reading session. Firstly, the students answered the questions as to what words they thought they had learned from the books, which can reveal what cannot be examined by multiple-choice questions. They described their answers either in katakana（sounds of English）or translation on the sheets. Secondly, the students answered how they felt reading the picture books using ICT. The form of the questionnaire was open-ended, and the students described their answers on the sheets. The questions which were asked to the students were as follows:

1. If you got to know words by reading picture books using ICT during the reading session, please write them.
2. How did you feel reading the picture books using ICT?

Results

Description of Words the Students Thought They Had Learned

The participating students wrote the words they thought they had learned. There were 58 students（92.1%）who mentioned what they thought they had learned during the reading session. Fifty-five students（87.3%）wrote the concrete words which they thought they had learned. Thirty-four students（54.0%）wrote more than five words on the questionnaire sheets, and one student（2.0%）wrote thirteen words. Three students（5%）wrote not concrete words, but the superordinate words referring to the categorization. Five students（8.0%）responded that they did not remember any words（see Figure 1）. The average of the number of the words was over 4.29 words.

The most frequent words in the students' answers were the names of animals: *giraffe, Tasmanian devil, owl, gorilla, sloth, tiger, zebra, octopus, pig, snail, hawk, sea lion, frog, whale, elephant, bear, monkey, snake, butterfly, rabbit, cat, dog, lion, flamingo, orangutan, king cobra,* and *kangaroo*. The number of the students who mentioned them was 32（60.8%）. Twelve boys（19.0%）mentioned the word, *king cobra*.

The second most frequent words included the names of colors: *red, blue, yellow, green, orange, black, purple, light blue, white*, and *brown*. One girl wrote that she had memorized all the names of colors and all the colored things that were included in the picture book, *Curious George Color Fun*.

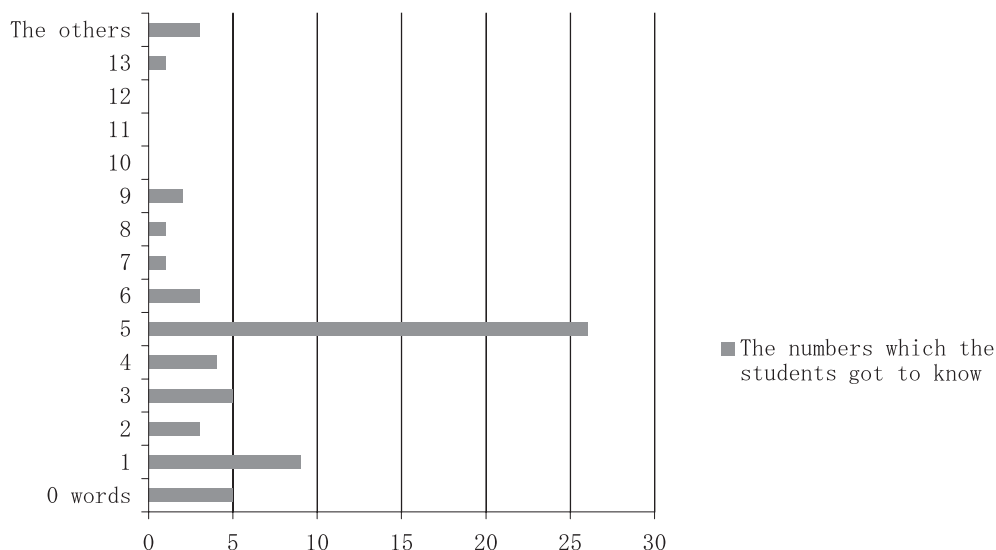Eight students（12.7%）mentioned not just the words referring to things but the words

Figure 1. The numbers of the words in the students' answers

referring to categories of things: *colors, rainbow colors, fruit, numbers, animals, musical instruments, the alphabet, shapes, self-introduction,* and *greetings.*

In addition, most students picked up nouns, while six（10%）wrote verbs, adjectives, adverbs, and interrogatives: *touch, run, dry, wet, slow, where*, and *what*. On the other hand, there were nine words which the students wrote but which did not appear in the books: *summit, bridge, rocket, road, puddle, rectangle, hexagon, oval,* and *bucket.*

Description of the Students' Feelings about Reading Picture Books using ICT

The students wrote how they felt reading picture books using ICT. These answers can be mainly divided into seven categories according to their contents.

Pleasure. Forty-five students（71.4%）described reading picture books using ICT as fun or pleasant. Three students wrote that they pleasantly read the English picture books. Two students wrote that they enjoyed reading in itself because they could read various kinds of books. Two students wrote the titles or kinds of their favorite books. Two students mentioned that they enjoyed the games included in the books. Seven students wrote that they enjoyed touching with the pens and listening to the sounds and songs. Four students wrote that they enjoyed reading picture books using ICT because they understood the content of the books. Four students wrote that they enjoyed the background music or the sound effects which were emited when they touched some parts of the pictures with the pens. One student wrote that she became more and more interested in reading.

Examples

- I could pleasantly read the English books.

- I enjoyed listening to the words by touching the book with the pen.

Understanding. Six students（10%）wrote that they could remember some English words. Fourteen students wrote that they could understand what was written in English in the books.

Examples

- I could remember various English words.

- I understood various words by reading picture books using ICT.

Positive motivation. Eight students（12.7%）stated that they wanted to read more.

Examples

- I want to continue reading picture books using ICT.

- I want to remember other words by reading these books using ICT

About ICT devices. There are comments referring to the ICT devices in the books and the pens. Six students（9.5%）wrote that they were interested in the ICT devices or surprised at the speaking pen.

Examples

- I was surprised to hear the pen speaking when I touched the books.

- The books were interesting because they included some riddles in touching them twice.

Pronunciation. Four students（6.3%）analyzed the differences in pronunciation between what the books said and what they usually hear in the ordinary foreign language activities.

Examples

- As the pronunciations sounded strange, it was hard to comprehend what was said.

Negative comments. There were 13 students（20.6%）who wrote negative comments. Four students wrote that they did not enjoy reading or gradually lost their interest in reading picture books using ICT. Seven students wrote that they did not understand what was said in the books. Two students did not understand it because there were some differences in pronunciation between what the books said and what they usually hear in the ordinary foreign language activities and the speed with which sentences were read was so fast that they could not keep up with them. One student wrote that as he did not understand the meaning of what the books said, he could not remember words and he thought that Japanese translation should be added for understanding them. Another one wrote that the pen was not easy to handle.

Examples

- It was not much fun reading picture books using ICT.

- At first I was surprised and interested in picture books using ICT, but I got bored with them.

Others. One girl wrote that she easily understood various words and phrases which she read in the books using ICT, and they helped her learn English at "juku," an English institute for kids. Another girl, who was a returnee, wrote that she understood Spanish words in the picture book, *1-2-3 Dora!*, which was spoken in both English and Spanish.

Discussion

Research Question 1: Did the Students Think that They Had Learned Words?

The results show that most students mentioned some words which they thought they had learned. More than half the students wrote over five words on the questionnaire sheets, and one student wrote thirteen words. Only a few students responded that they did not remember any words. That is, most of the participating students thought that they had learned words during the reading session of reading picture books using ICT. Therefore, it can be said that picture books using ICT would be helpful in developing vocabulary (Zucker et al., 2009).

Research Question 2: What Words did the Students Think that They Had Learned?

First, most of the words which they wrote on their answer sheets are approximately categorized into animals and colors. This is because the books which were used during the reading session of the present study were almost all concerned with animals and colors. Interestingly, several boys mentioned the word, *king cobra*, which might be because they were at the age when a person is interested in such a mysterious animal as king cobras.

Then, most students wrote the concrete words, hyponyms, such as *owl, gorilla, red,* and *blue*, while some students wrote the category of things, hypernyms: *colors, rainbow colors, fruit, numbers, animas, musical instruments, the alphabet, shapes, self-introduction*, and *greetings*. As they are ten or eleven years old and thus they can naturally classify things into categories, they may have transferred their knowledge of categorization in Japanese to English.

Furthermore, most students used noun substantives to represent the words which they thought they had learned, while six students used other parts of speech like verbs, adjectives, adverbs, and interrogatives, or forms of explanation: *touch, run, dry, slow, where, what*, and *the state of being wet*. Nouns were easier for the students to pick up than other parts of speech because the former refer to a substantial thing which could be represented by pictures. On the other hand, as verbs, adjectives, adverbs, and interrogatives do not refer to substantial things but to the action or the state, the students needed to grasp the situation or to guess the context

from the picture or the other words which they already knew.　The remarkable expression in their description is the phrase which expresses the state of being wet in Japanese, which is "ぬ れていること". The student who wrote it might not have been able to find a word in Japanese which was equivalent for the English word, wet, but explained the wet state. That the students wrote verbs, adjectives, adverbs, interrogatives, and the forms of explanation means that they understood the contexts or the states which were described in the books, and that they tried to find the words explaining the states or referring to the contexts. In addition, the word, *touch*, was heard in the explanation of the book operation, not in the content. It is surprising that the students could pay attention to and understand it. They must have listened to what was said very carefully.

On the other hand, some of the words which were described in their responses had been already introduced in the foreign language activities before the reading session of the present study. The students who wrote these words might have thought that they had learned them just when they met them in the books during the reading session.　In other words, those words may not be recognized until the learner wants to know their meaning voluntarily and notices it consciously. Furthermore, six students wrote words which were not included in the books. These words might have been inferred from pictures on the pages. The students who wrote them might have guessed their meanings only from pictures without being able to catch sounds. Such misunderstandings may be caused by not enough exposure to input, and they may be avoided by continuing reading picture books using ICT. However, it is not clear that the reason is that they failed to hear the words. This is an issue to be considered for future studies.

To sum up, most of the words which the students wrote on the sheets are concrete words which are included in the books, while some students wrote not every word they thought they had learned, but hypernyms which could cover the words which they caught. In addition, some students used verbs, adjectives, adverbs, and interrogatives, or forms of explanation to express the states, while most students used noun substantives. From the descriptions of the students, the words which they thought they had learned are varied. This is because their interests and their ability to catch English words may be different, and moreover their ability of expression in Japanese may be different.

Research Question 3 : How did the Students Feel Reading Picture Books using ICT?

Firstly, there are a lot of comments that the students positively accepted reading picture books using ICT. Over 70% students found it to be fun or pleasant. They enjoyed it in various ways ; some students felt the reading session pleasant, some liked reading the English books in itself, some liked a certain book the best, some enjoyed touching and listening to the books,

and others liked understanding what was said in the books. Especially, touching anywhere in the books with the pens seemed to be enjoyable for several students, which means that reading picture books using ICT may make reading in itself enjoyable. Moreover, understanding the content or the words in the books made four students pleased. This means that understanding or getting to know the contents or words caused pleasure（Arakawa et. al, 1999）. Furthermore, similar to Jones and Brown（2011）, some students enjoyed the background music or the sound effect which could be heard when they touched some pictures with the pen. That is, it can be said that they enjoyed reading the books more by listening to the background music or the sound effects.

Secondly, 20 students wrote that they remembered or understood new words in the books. Eight students wrote that they would like to continue the activity of reading picture books using ICT. Four students of them answered that they could remember/get to know the words in the books simultaneously. Therefore, reading, which accompanied understanding, might motivate them to read more（Arakawa et al., 1999）.

Thirdly, seven students were interested in the ICT devices of the books and the pens which were used in the present study. Some of them wrote that they were surprised, and some wrote that it was fine. The other described that she could listen to the pronunciation of a word when touching it once, and the letters' names when touching it twice. In this way, reading the books used in the present study can relate a text with the sound referring to it, which means that it can make the similar situation where an adult reads a picture book to a child, pointing out letters and saying their names and sounds. Therefore, children can develop vocabulary by reading picture books using ICT in the same way as adults read picture books to children（Moody, 2010）. The devices of the books might interest the students and then make them want to read the books more（Jones & Brown, 2011）.

In addition, some students mentioned the differences between the pronunciation of what the books said and that of what they usually heard in the ordinary foreign language activities. Because an assistant language teacher usually pronounces each word very clearly and slowly in foreign language activities in order to make the students understand it, the students might not have been familiar with the rhythm and the intonation which are peculiar to English language when native English speakers speak or read aloud naturally. Therefore, in the present study, the students might have had difficulty in understanding words, phrases, and sentences which were spoken in the books naturally. However, it is very important for them to listen to authentic English, so they may have had a very good opportunity to do it in the present reading session.

On the other hand, 13 students did not feel reading picture books using ICT interesting. Four of them wrote that they had lost their interest. The reason why they lost their interest in reading the books using ICT may be that as there were only eight titles of the books which were prepared for the ten-day reading session and they were bored with reading the same books repeatedly. One student felt reading picture books using ICT uninteresting because of the difficulty in handling the pen. Furthermore, seven of them wrote that they could not understand what the books said, and others wrote that they wanted to listen to Japanese because it may be hard for them as beginners in English to understand a series of utterances at the speed with which native English speakers speak to native English children. On this point, it is important to consider that some students tend to tolerate ambiguity, while others do not（Brown, 2007）. The students who enjoyed reading picture books using ICT might have been fond of guessing the meaning of words from the context and tended to tolerate ambiguity. On the other hand, those who did not enjoy reading picture books using ICT might have preferred not to guess the meaning of words from the context, but to be taught the precise meanings of words through the vocabulary instruction of teaching the definite meaning；they did not tend to be tolerant of ambiguity.

To sum up, during the reading session of the present study, the students read in their own ways, and most of them felt reading picture books using ICT interesting or enjoyable and thought they had learned some words. This supports the theory that reading picture books using ICT can be substituted for an adult's reading to children for L2 learners（Moody, 2010; Verhallen et al., 2006）. It can be said that reading picture books using ICT could make the students feel reading fun/pleasant and motivate them to read（Arakawa et al., 1999）.

Conclusion

The present study examines whether the participating students think that they had learned words during the reading session of reading picture books using ICT and how they felt reading picture books using ICT. As a result, most students could get to know various kinds of words during the reading session and they felt reading the books using ICT positive.

Building vocabulary is indispensable for communication ability. However, 35 foreign language activities in a year are not enough to expose students to contextualized input or to allow them to build their vocabulary. Additional ways should be considered to build vocabulary in order to cultivate their communication ability in foreign language activities. Reading picture books using ICT will be one of the effective ways to provide children with valuable input.

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