

A Comparison of Three Approaches to Teaching English Spelling and Pronunciation: The Case of 5th Graders in a Japanese Elementary School

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1. Introduction

Amid ongoing globalization, English language teaching in Japanese school education is facing a turning point. One such evidence is found in the announcement of the documents titled “English Education Reform Plan corresponding to Globalization” (MEXT, 2013) and “Report on the Future Improvement and Enhancement of English Education: Five Recommendations on the English Education Reform Plan Responding to the Rapid Globalization.” (MEXT, 2014a). In these documents, it is stated that, in the soon-to-be-revised Course of Study, elementary school students will start learning Foreign Language Activities from the third grade, and from the fifth grade they will start learning Foreign Languages, virtually English, as one of the school subjects. Under these reform plans, fifth-graders will learn reading and writing, as the introduction of these language skills is expected to help them develop their motivation and enhance their ability to express themselves and understand others (MEXT, 2014b).

In order to develop reading and writing skills, understanding the relationship between sounds and spellings is the key, as seen in the attempt to teach such relationship in the supplementary materials titled “Hi, friends! Plus” (MEXT, 2015). Under these circumstances, we think that it behooves us to investigate how to teach the relationship between sounds and spellings in English at elementary school levels.

2. Literature review

Generally speaking, there are two types of approach for teaching and learning the relationship between sounds and spellings: one type is the “top-to-down” approach (e.g., whole language approach) and the other is “bottom-to-top” approach (e.g., phonics approach). In the learning context of Japan, the latter approach is considered to be more feasible, given the fact that, unlike

native-English speaking children, Japanese young learners are not exposed to English in their daily lives and that, with an insufficient amount of input, it will be difficult for them to get to notice the relationship on their own.

With regard to the use of phonics instruction in teaching elementary schools in Japan, a certain amount of research has already been conducted (e.g., Allen-Tamai, 2013; Fukuoka, 2010; Hatae, Nagakura, Shimada, and Danmoto, 2014; Imura, 2012, Yamami, 2016; Yoshikawa, 2014). Of these studies, Allen-Tamai (2013) implemented the practice of synthetic phonics for two fifth-grade classes in an elementary school in order to examine the effects of the bottom-up instruction for developing reading skills. She first conducted activities to teach the English alphabet and then tried to develop a phonemic awareness before introducing phonics instruction per se. She conducted her lessons for the whole academic year of the fifth grade, and gave three types of tests both at the beginning and the end of the year: (1) a test for the knowledge of the alphabet (both capital and small letters), (2) a test for recognition of phonemes (an open oddity test and an end oddity test), and (3) a test for vocabulary (orthographic knowledge). In addition to these tests, the students were asked at the end of the academic year whether the lessons were interesting, useful, or neither. The result of this study shows that synthetic phonics instruction promotes students' awareness of the spelling system of English even in a short time and it was clear that pupils' skills for converting letters into sounds and for combining them to form recognizable words were gradually developed through the lessons. The research also revealed that the students found the lessons useful rather than interesting.

As for another study on phonics instruction, Hatae, Nagakura, Shimada, and Danmoto (2014) implemented the bottom-up instruction, which aimed to develop the phonemic awareness in the mind of the fifth and sixth graders. They taught a total of 11 lessons consisting of 10 minutes each as part of the Foreign Language Activities, and conducted a pre- and a post- survey to examine the effects of the instruction and the students' perceptions toward the instruction, particularly in regard to their interest in and motivation toward the instruction. In their research, students started watching a DVD containing phonics songs in advance, and continued watching it during the lessons. In the first lesson, pupils learned the capital and small letters of the alphabet, and then two phonemes were introduced in each lesson from the second lesson. The result showed an improvement in their listening and pronouncing ability, but it was also found that there remained a strong influence from their Japanese mora pronouncing habit and also from their accustomed way of pronouncing Roman letters as applied in the Japanese writing system (i.e., the 'romaji' writing system). In addition, the research pointed out that the pupils confusingly replaced words with sounds unknown to them with

the sounds of Japanese (e.g., ‘that’ as *zatt* or *dat*, ‘rub’ as *lab*). Furthermore, Hatae, Nagakura, Shimada, and Danmoto (2014) imply that learning Roman letters as part of the Japanese writing system (i.e., so-called Romaji) before they learn English could be an interference for them in learning the relationship between letters and sounds in English. As for their perceptions of the instruction, the fifth graders said they were motivated to learn something even more difficult, and the sixth graders found the instruction useful.

As discussed above, many researchers have proved that the phonics instruction plays an important role with upper graders at elementary schools in Japan and that it is possible to give pupils an early literacy education. However, although phonics instruction appears to have a great potential for English education at Japanese elementary schools, there is yet only a limited amount of research which compares the instructional effectiveness between ‘explicit’ instructions (e.g., phonics) and ‘implicit’ instructions (e.g., unconscious acquisition of the letter-sound relationship by means of extensive vocal reading of words). Not only that, while some phonics curricula were designed specifically for Japanese learners (e.g., Wakabayashi, 1986; Teshima, 1997 and 2004), there are almost no studies which compare these curricula and the effects which they produce on students’ understanding of the relationship.

3. Research design

3.1 Research questions

With the above-mentioned issues in mind, this study sets the following research questions:

- (1) How does the ‘explicit’ teaching of the relationship between letters and sounds affect the fifth graders’ performance of vocal reading of one-syllable words in comparison with the ‘implicit’ teaching (i.e., unconscious acquisition of the relationship through extensive vocal reading of words)?
- (2) How do two ‘explicit’ teaching approaches differ in their effects on the fifth graders’ performance in the vocal reading of one-syllable words?

3.2 Participants

This study was conducted at an elementary school in Akita. A total of 88 pupils in three fifth-grade classes participated in the study: 29 members of Class A, 30 members of Class B, and 29 members of Class C. These fifth-graders were selected under the assumption that “English as a subject” would start with fifth graders when the new Course of Study is implemented.

According to the survey that investigated the participants’ background, the selected

participants lived in an environment ideal for learning English: About two thirds of the participants are currently going or have gone to private English schools, and more than one third have been abroad. This implies that their parents have positive attitudes toward their children's learning English and feel the necessity of the knowledge of English in the globalized society. This could, in turn, affect the pupils' attitudes toward English and, when one of the authors observed their classes, they looked quite motivated to learn English.

3.3 Teaching experiments

In order to answer the research questions by examining the effects of phonics instruction, we conducted teaching experiments in which three approaches were adopted. Of the three, two approaches adopted phonics based on two teaching materials designed for Japanese learners: the consonant-focused approach and the vowel-focused approach (Teshima, 1997 and 2004). The consonant-focused approach for Class A is based on *Surasura-Yomikaki-Eitango (Smooth-Read and Write-English Words)* (Teshima, 1997). The vowel-focused approach for Class B is based on *Eitango no Hatsuson – Rule Book (Rule Book of English Pronunciation)* (Teshima, 2004). The third approach adopted repetition as a method of learning target words.

In the lessons for Class A and Class B, new learning items (i.e., target letters) were introduced first. After pupils pronounced them several times, six English words using those letters were presented to them. The participants read them phoneme by phoneme, and then they constructed a word. At the end of the lesson, the introduced letters were reviewed.

In the lessons for Class C, new learning items of English words were introduced with pictures. First, the participants guessed as to what they were called in English following oral clues given by the instructor, who is one of the authors of this study. Second, they repeated the words following ALT while looking at the pictures. Third, they repeated again, but this time not only the pictures but also the words on the flash cards. This meant they looked at the two cards: one with a picture and the other with letters. Fourth, they repeated the words only by looking at the card with letters. At the end, they repeated the words, looking only at the pictures.

As for the target language items and the word lists for the lessons, they are shown in Table 1. These items and lists were selected based on the above-mentioned books. To teach the sounds of these letters within a limited time period, only six words were picked up from the materials. Moreover, for the purpose of comparison, the same words were learned in Class B and Class C.

The words taught in the classes involve the basic pronunciation rules of consonants and vowels, and the rule of the "Magic E": the letter E at the end of a word affects the pronunciation of

Table 1

Target Letters and Word List for Lessons

Lesson	Class (Approach)	A (Consonant-focused)	B (Vowel-focused)	C (Repetition-based)
1	Target letters	a, e, i, t, d, n	a	N/A ¹
	Word list	TEN, NET, NED, DAD, DEN, TIN	MAP, SAD, BAD, PAN, TAG, FAX	
2	Target letters	p, b, m	e	N/A
	Word list	MAP, MAN, PEN, PET, BED, BAT	TEN, DEN, PET, BED, NEST, LEFT	
3	Target letters	o, u, s, z	l	N/A
	Word list	TOP, POT, SAD, SUN, ZEN, ZIP	LIP, TIP, PIN, WIN, SIT, MILK	
4	Target letters	k, h	o	N/A
	Word list	KID, SKIP, DESK, HOT, HAT, HUNT	HOT, POT, TOP, MOP, STOP, POND	
5	Target letters	f, v	u	N/A
	Word list	FIN, FUN, FAN, VAN, VET, VEST	CUT, NUT, BUD, BUS, MUG, HUNT	
6	Target letters	w, y	a[]e	N/A
	Word list	WIN, WEB, WET, YES, YEN, YAM	TAPE, SAFE, NAME, MAKE, LATE, SKATE	
7	Target letters	r, l	i[]e	N/A
	Word list	RUN, RAT, RED, LIP, LEFT, LAND	TIME, LINE, BIKE, WIDE, FIVE, PIPE	
8	Target letters	x	o[]e	N/A
	Word list	SIX, BOX, FOX, TAX, TEXT, NEXT	BONE, JOKE, ROPE, HOME, DOME, SMOKE	
9	Target letters	a[] ² e, i[]e, o[]e, u[]e	u[]e	N/A
	Word list	TAPE, NAME, TIME, BIKE, HOME, TUBE	CUTE, CUBE, TUBE, MULE, RULE, FLUTE	

Note. 1. “N/A” shows that the sounds of the letters were not the target items for the class.

2. Square brackets (i.e., []) indicate that a consonant letter comes in.

the vowel before the letter E, as seen in the words such as “take” and “note.”

In this study only the capital letters of the alphabet were used, since at the time when this

study was conducted, the fifth graders had not learned small letters.

3.4 Test materials

For this study, pre- and post-pronunciation tests were developed to answer the research questions as a part of the whole research. As shown in Table 2, in both tests a total of ten words which the participants presumably had never seen before were tested to measure whether they have acquired the rules of pronouncing letters. In order to examine small changes in students' pronunciation, and considering that there was a two-month gap between the two tests and that they had seen the words only in the pre-test, the same items were used for the post-test. In these tests, the participants read those words and recorded them onto IC recorders.

Table 2

Word List for Pronunciation Tests

[1] KEX [keks]	[2] RIM [rim]	[3] FUB [fʌb]	[4] HEN [hen]	[5] LID [lid]
[6] YET [jet]	[7] VAT [væt]	[8] SOP [sɒp]	[9] WAD [wad]	[10] DUNE [du:n]

Note. The IPA was not presented in the test.

3.5 Implementation

This study was conducted from October to December in 2015 after the summer vacation of the school. This timing was decided on since we thought phonics should be taught after the learners had learned the names of the letters on the alphabet, as maintained by Allen-Tamai (2010).

First, the pre-test was conducted in the fourth week of October. One participant was absent, thus only 87 out of 88 respondents were tested. Following the pre-test, nine lessons were taught in each class from the last week of October to the fourth week of December. These lessons were given as warm-ups during the Foreign Language Activities classes, and each lesson took eight to twelve minutes. Finally, the post-test was conducted in the fourth week of December. Two participants out of 88 were absent so the respondents in this test were 86 participants (see also Appendix).

3.6 Data analysis

The effectiveness of the three types of approach was analyzed based on the results of the pre- and post- tests. First, all the recorded audio answers were transcribed by one of the authors with the letters of the alphabet and *katakana*, depending on the pronunciation given by the pupils. The transcribed letters of *katakana* were judged as incorrect pronunciation even though the pupils

seemed to understand how to read those words, which fact may indicate that we had set relatively high standards for their pronunciation. Then the ratios of correct answers were compared between those of the pre-test and the post-test, using descriptive statistics. As for wrong answers, they were further analyzed and categorized into six groups based on the framework of Yoshikawa (2014) and Takeda (2007) in order to examine the small changes in students' pronunciation (see Table 3). The analysis of wrong answers will help us understand how close they were to correct English pronunciation and to what extent the pupils had improved in their pronunciation after they received the instructions.

Table 3

Categories for Wrong Answers of Pronunciation

Categories	Definition	Example
(1) Correct / Some <i>kana</i>	Correctly read, but some parts pronounced in <i>katakana</i> English and other parts pronounced correctly in good English	[<i>rim</i>] for RIM
(2) Correct / All <i>kana</i>	Correctly read, but all items pronounced in <i>katakana</i> English	[<i>rimu</i>] for RIM
(3) Incorrect / English	Incorrectly read, but pronounced in good English	[<i>pim</i>] for RIM
(4) In correct / Some or all <i>kana</i>	Incorrectly read, with some or all items pronounced in <i>katakana</i> English	[<i>raimu</i>] for RIM
(5) Incorrect / Alphabet	Incorrectly read, with all items pronounced as the names of the alphabet letters	[<i>a-ru ai emu</i>] for RIM
(6) Others	Miscellaneous (e.g., unclear answers, non-answers)	

Note. Italicized letters in square brackets in the “Example” column show that their pronunciation sounds like *katakana* in Japanese.

3.7 Ethical issues

This study was approved by the elementary school's vice-principal, the chief teacher in charge of the Foreign Language Activities at the school, as well as the pupils' homeroom teachers. All the material used in this study was provided to them beforehand and checked by these teachers. Then, one of the authors explained the aim of this study along with the privacy protection promise to all participants, and assured them that the results would not be used to affect the pupils' grades. We also took care not to give too much pressure on the pupils so as not to make them dislike

Foreign Language Activities during the lessons. The lessons followed the timetable at the elementary school and in order not to bother their regular schedule for Foreign Language Activities, each lesson time was limited to the first 8-12 minutes within the Foreign Language Activities time.

4. Results and discussion

4.1 The result of the pre-test

Figure 1 shows the result of the pre-test for each class. As indicated in the figure, Class A tends to gain higher scores and Class C tends to gain lower scores for most of the items, while Class B is situated in the middle between the two. This large gap between each class in the pre-test suggests that the result of the post-test needs to be interpreted with this gap in mind. In addition, the result shows that the participants have relatively higher scores on the words that can be read in the same way as Roman letters are pronounced (e.g., KEX, HEN, LID, and YET). On the other hand, they had difficulty reading the words of which the vowels or the consonants cannot be easily read or pronounced, such as [ʌ] in FUB, [æ] in VAT, and [ɑ] in SOP for vowels, and RIM for the consonant [r], as pointed out by Hatae, Nagakura, Shimada and Danmoto (2014). Also, the participants seemed to be confused about how to read WAD and DUNE in the pre-test.

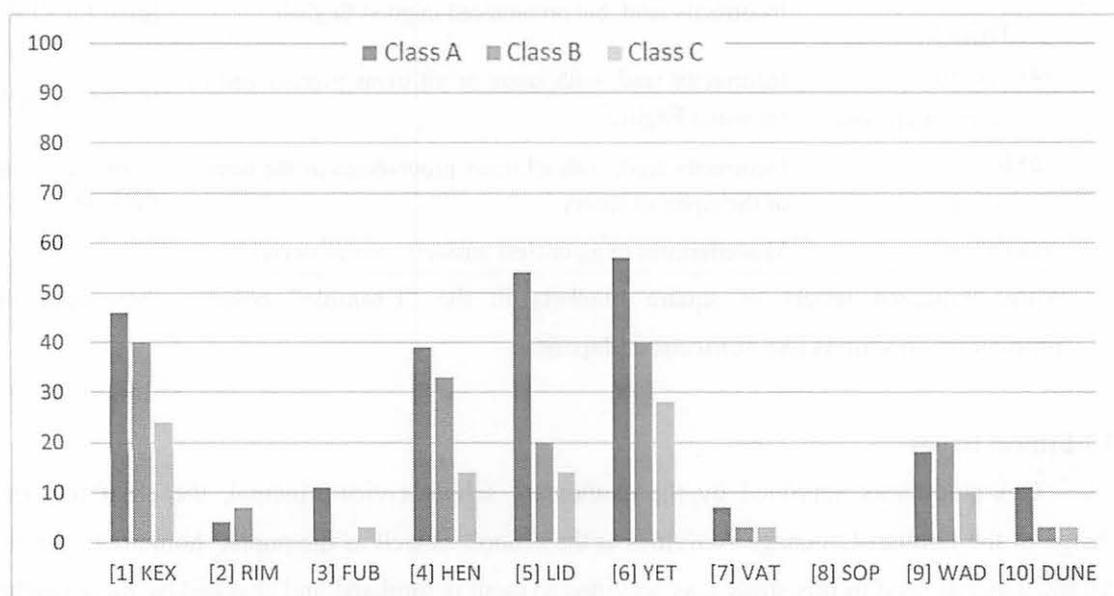


Figure 1 The result of the pre-test

Note. The numbers on the left shows the percentage of correct answers.

4.2 The result of the post-test and the difference between the two tests

Table 4 shows the results of the pre- and post-tests for each class and the differences between the two tests. The results tell us that the improvement rates differ greatly depending on the test items, except for the words DUNE, HEN, and LID, in which the differences among the three classes are less than 10%. With regard to the words RIM, FUB, YET, VAT, SOP, and WAD, there is a large gap in the results between the two classes in which the phonics-based approaches were adopted (i.e., Classes A and B) on the one hand, and the third class adopting the repetition-based approach (i.e., Class C) on the other. In the case of the latter three words (i.e., VAT, SOP and WAD), there are more than 10% of differences even between Class A and Class B.

In addition, the rates of improvement in Class A and B are more than 10% for all the ten English words, whereas, in Class C, the words which showed more than 10% of improvements are limited to four words (i.e., KEX, HEN, LID, and DUNE). Furthermore, in Class C three words (i.e., YET, VAT, SOP) did not show any improvements. If these results and the average ratios of improvements between the two tests (i.e., 28.1% in Class A, 24.5% in Class B, and 12.5% in Class C) are taken into account, it may be said that the phonics-based approach works more effectively

Table 4

The Result of Pronunciation Test in the pre- and post-tests

	Class A			Class B			Class C		
	Pre	Post	Diff.	Pre	Post	Diff.	Pre	Post	Diff.
[1] KEX	46	75	29	40	52	12	24	52	28
[2] RIM	4	32	28	7	38	31	0	7	7
[3] FUB	11	39	28	0	24	24	3	10	7
[4] HEN	39	64	25	33	55	22	14	31	17
[5] LID	54	64	10	20	38	18	14	28	14
[6] YET	57	82	25	40	66	26	28	28	0
[7] VAT	7	21	14	3	28	25	3	3	0
[8] SOP	0	29	29	0	10	10	0	0	0
[9] WAD	18	61	43	20	45	25	10	17	7
[10] DUNE	11	61	50	3	55	52	3	48	45
Average	24.7	52.8	28.1	16.6	41.1	24.5	9.9	22.4	12.5

Note. The numbers in the “Pre” and “Post” columns for each class show the percentage of correct answers for each test, and the numbers in the “Diff.” column for each class show the difference between the two tests.

for the participants than the repetition-based approach.

The analysis of question items with relatively high ratio of improvements in Class C revealed that, of the four words, the pronunciations of KEX, HEN, and LID share a feature such that they can be read in the same way as Roman letters are pronounced. Therefore, even in the pre-test, the participants were relatively more able to read without the knowledge of phonics, although in the pre-test most of their answers sounded like *katakana* English. After finishing nine lessons, the participants became aware of the differences between English pronunciation and Japanese pronunciation, and these three words sounded more like English in the post-test. As for the word DUNE, which requires the knowledge of the rule of the Magic E, there was no explicit instruction given to Class C. However, since the pattern of “u[je” was taught on the day when the post-test was given, it is likely that the participants remembered it better than they did others. The fact that the participants learned the pattern on the day when the post-test was implemented may also explain the high ratio of improvements for Class A where the rule of the “Magic E” was introduced, and also for Class B where the rule of “u[je” was taught. This suggests that these higher scores may not necessarily prove that the participants have fully acquired the knowledge of the rule or the pattern: The scores might not have been so high if the post-test had been conducted with a certain time gap.

4.3 The analysis of pupils’ wrong answers

As shown in 3.6, wrong answers in the pre- and post-tests were classified into the following six categories: (1) Correctly read, but some parts pronounced in *katakana* English and other parts pronounced correctly in good English (Correct/Some *kana*); (2) Correctly read, but all items pronounced in *katakana* English (Correct/All *kana*); (3) Incorrectly read, but pronounced in good English (Incorrect/English); (4) Incorrectly read, with some or all items pronounced in *katakana* English (Incorrect/Some or all *kana*); (5) Incorrectly read, with all items pronounced as the names of the alphabet letters (Incorrect/Alphabet); and (6) Miscellaneous (e.g., unclear answers, non-answers) (Others).

Figure 2 shows the results of the analysis of wrong answers in the pre-test. As shown in the figure, the percentage of Category Four (Incorrect/Some or all *kana*) is the highest for all the classes, making up nearly 40% of the wrong answers. The ratios of other categories differ depending on the classes: In Class A, Category One (Correct/Some *kana*) exceeds 20%, while in Classes B and C, Category Five (Incorrect/Alphabet) is the second highest.

Figure 3 shows the results of the analysis of wrong answers in the post-test. As shown in the figure, the percentage of Category Three (Incorrect/English) is the highest for all the classes, making up around 70% of the wrong answers in Classes A and B and over 50% in Class C. The

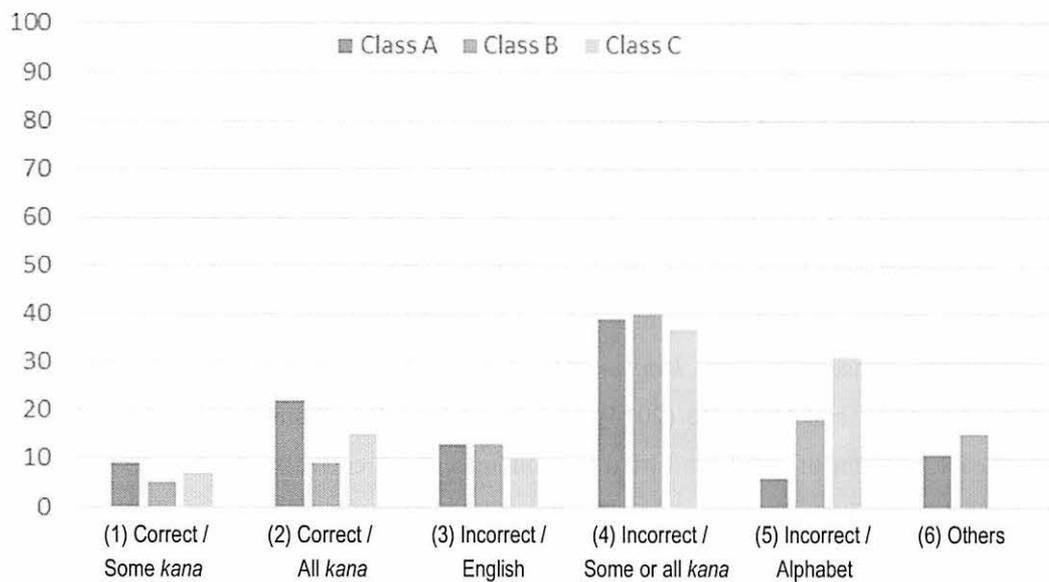


Figure 2 The classification of wrong answers in the pre-test

Note. The numbers on the left shows the percentage of each category.

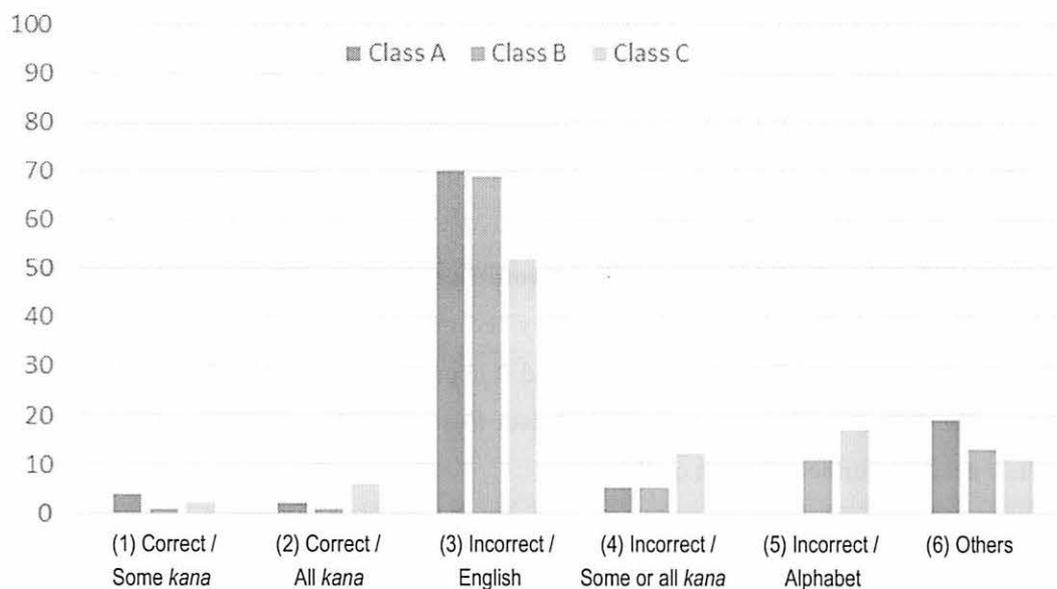


Figure 3 The classification of wrong answers in the post-test

Note. The numbers on the left shows the percentage of each category.

ratios of other categories differ depending on the classes: In Classes A and B, Category Six (Others) is the second highest, nearly 20% in Class A and over 10% in Class B, while in Class C, Category Five (Incorrect/Alphabet) is the second highest. These results suggest that, although the pupils still have problems in recognizing the sounds of letters, their pronunciation sounds more English-like, and this tendency is more salient in Classes A and B.

4.4 Effects of phonics-based instruction

In summary, the comparison of the phonics-based approaches with the repetition-based approach indicated that the phonics-based approaches brought about the following two effects: (1) correct pronunciation of consonants such as [r] in RIM and [v] in VAT; and (2) correct pronunciation of vowels such as [ʌ] in FUB and [ɑ] in SOP. In the first case, some participants pronounced the consonants with *katakana* English in the pre-test, as pointed out by Hatae, Nagakura, Shimada, and Danmoto (2014), yet after taking the phonics instruction, they became aware of each element of words and tried to pronounce them correctly. In the second case, in the pre-test the participants pronounced vowel letters U and O in the same way as Roman letters are pronounced (e.g., [u] for U and [o] for O), as indicated by Hatae, Nagakura, Shimada, and Danmoto (2014), yet the post-test showed their improvements on these vowel letters. These effects from the phonics approach agree with those pointed out by previous studies (e.g., Allen-Tamai, 2013; Ehri, 2003; Hatae, Nagakura, Shimada, and Danmoto, 2014; Takeda, 2006, 2007). In these studies too, the participants became able to recognize each element of words and its sound.

Furthermore, the instructor's observation of the participants in Classes A and B during the pre- and post-tests revealed that there was a change in the participants' attitudes towards reading unfamiliar words aloud. For instance, at the time of the pre-test, the participants tended to mispronounce unfamiliar words as if they were the words with similar spellings which they already knew (e.g., YET as "yes", WAD as "wood" or "word") or else they did not even try to think how to read them. However, after taking the lessons, they became able to recognize each letter and read it aloud correctly, or at least they attempted to read it apparently using their knowledge of phonics. Unfortunately, however, there is no empirical data to support this change in their attitude. This suggests a need for further research on this issue.

4.5 Differences between the two types of phonics-based approach

The analysis of the results between the pre- and post-tests (see Table 4) and the analysis of the participants' wrong answers (see Figures 2 and 3) appeared to suggest that there are no major

differences between the two types of phonics-based approach (i.e., the consonant-focused approach and the vowel-focused approach), though on the average the consonant-focused approach showed slightly better results than the vowel-focused approach. This might be partly because the test items did not include words related to the rules of the “Magic E”: the former approach taught the rule in only one lesson out of the nine lessons, while the latter approach dealt with it in four lessons.

Surprisingly, the consonant-focused approach showed less improvement than the vowel-focused approach with regard to words of which many participants had difficulty pronouncing the consonants (e.g., RIM and VAT), while the vowel-focused approach showed less improvement than the consonant-focused approach with regard to words of which many participants had difficulty pronouncing the vowels (e.g., FUB and SOP). Further research will be required to explore what caused these results.

5. Conclusion

With the aim of investigating how to teach the relationship between sounds and spellings in English at elementary school levels, we reviewed past studies in the area and found that there is only a limited amount of research which compared explicit instructions (e.g., phonics) and implicit instructions (i.e., learn as one reads). We also found that there are even fewer studies which compared between the two types of phonics instructions (i.e., consonant-focused vs vowel-focused phonics). With these issues taken into account, this study started with the following research questions: (1) How does the ‘explicit’ teaching of the relationship between letters and sounds affect the fifth graders’ performance of vocal reading of one-syllable words in comparison with the ‘implicit’ teaching (i.e., unconscious acquisition of the relationship through extensive vocal reading of words)?; (2) How do two ‘explicit’ teaching approaches differ in their effects on the fifth graders’ performance in the vocal reading of one-syllable words?

To answer the research questions, we implemented teaching experiments to three classes of fifth-graders using three different approaches (i.e., the consonant-focused approach, the vowel-focused approach, and the repetition-based approach) and conducted the pre- and post-tests on the pronunciation of ten words considered unfamiliar to the participants. The results of the pronunciation tests and the analysis of the participants’ wrong answers showed that, generally speaking, the phonics-based instructions worked more effectively than the repetition-based instruction. This was supported by the average ratios of improvements between the two tests and also by the fact that the pupils in the two classes where the phonics-based instructions were adopted (i.e., Classes A and B) achieved more than 10% of improvements for all the ten English words,

while in the third class where the repetition-based instruction was adopted (i.e., Class C), they achieved more than 10% of improvements for only four words. It is also worth noting that, after taking the phonics-based instructions, the participants' pronunciation of wrong answers came to sound more like English than that of the participants who took the repetition-based instruction. As for the comparison of the two types of phonics-based instruction, there were no major differences between them.

Unfortunately, we have to admit here that there are some limitations to this study, two of them being (1) limitation due to time factors and (2) limitation due to methodological factors. The former limitation led to some insufficiency in the teaching experiments. At the time of the research we were not directly involved in teaching the classes of Foreign Language Activities, and so it was difficult for us to use a long span of time—long enough to cover the whole set of phonics rules. Thus, the fact that the participants achieved relatively high scores in pronouncing the words involving the rule of the “Magic E” was probably caused by the timing of the post-test. This limitation may indicate that some results should be viewed as tentative. Therefore, in order to examine the full effects of phonics instruction, we need to conduct a longitudinal study. In addition, the experiment teaching was implemented for only ten minutes at a time, which made us virtually impossible to deal with the problems that individual participants had in pronunciation. With more time for the lessons, the results of the post-test might have been different.

The other major limitation is a methodological one. In this study, considering the burden on the participants, we decided to skip both the placement test of the pupils and our interviews to them, which prevented us from getting the necessary information for accurately evaluating the effects of phonics-based instructions and for ascertaining the problems the pupils had during the lessons as well as the tests. Furthermore, the test items in this study did not fully reflect the learning contents relevant to the vowel-focused approach and the repetition-based approach, since there was only one word in the test which required the knowledge of the rule of the “Magic E.” Also, some letters appeared only once or twice in the tests, which made it difficult for us to say whether the participants had really acquired the knowledge and the skills for correct pronunciation. Moreover, while the research involved a relatively small number of participants, we used only descriptive statistics for analyzing the data, which prevented us from making a stronger claim on the results we gained than when inferential statistics are used.

The existence of these limitations suggests that, for the sake of future research on the comparison among various approaches, the selection of test items needs to be made so as to balance the learning contents between the approaches. Additionally, there is a need for a longitudinal study

equipped with personal interviews to participants. And, ideally, in making tests we need to make sure that target letters appear several times so as to be able to evaluate the participants' performances accurately.

In spite of these limitations, however, the comparison of approaches implemented in this study highlights some important issues in this area, which we think can be considered as a contribution of this study to future studies of a similar nature. Also, the framework suggested by the study for analyzing wrong answers can be used in pronunciation tests, which may help motivate those who make mistakes in pronunciation.

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References

- Allen-Tamai, M. (2010). *小学校英語の教育法 理論と実践*. 東京：大修館書店.
- Allen-Tamai, M. (2013). The Practice of Synthetic Phonics in a Japanese Public Elementary School. *ARCLE REVIEW*, 7, 68-78.
- Ehri, L. C. (2003). Systematic Phonics Instruction: Findings of the National Panel. Retrieved November 22, 2015, from <http://files.eric.ed.gov/fulltext/ED479646.pdf>.
- Fukuoka, K. (2010). 小学校の外国語活動を踏まえた中学校での英語指導の在り方—発音と綴りに関連付けた指導の工夫を通して—. *香川県教育センター平成21年度研修員報告書*, 1-12.
- Hatae, M., Nagakura, W, Shimada, S., & Danmoto, M. (2014). 「読み書き」能力の素地作りのために小学校からできること—Phonemic Awareness を促す外国語活動の実践—. *鳴門教育大学小学校英語教育センター紀要*, 第5号, 11-20.
- Imura, A. (2012). 小学校におけるフォニックスの指導—音にする力を楽しくつけるために—. *Teaching English Now*, 22, 19-20.
- Takeda, C. (2006). The Application of Phonics Teaching in Junior High School English Classes in Japan. *JACET Chugoku-Shikoku Chapter Research Bulletin*, 3, 99-111.
- Takeda, C. (2007). The Application of Phonics Instruction in Junior High School English Classes in Japan. *ARELE*, 18, 243-252
- Teshima, M. (1997). *スラすら・読み書き・英単語*. 東京：日本放送出版協会.
- Teshima, M. (2004). *英語の発音・ルールブック*. 東京：日本放送出版協会.

- Wakabayashi, S. (1986). *英語の単語一つづりと発音*[1]. 東京: 三省堂教材システム.
- Yamami, Y. (2016). 小学校へのフォニックス指導の有効性: 小学校 5, 6 年生へのフォニックス指導の実践 (アクションリサーチ). *中部地区英語教育学会紀要*, 45, 251-256.
- Yoshikawa, K. (2014). 小学校外国語活動における聞く力・読む力の育成に関する研究～フォニックスを活用した実践を通して～. *四日市市教育委員会教育支援課研究調査報告*, 392, 1-43.
- 文部科学省. (2013). グローバル化に対応した英語教育改革実施計画. Retrieved October 5, 2015, from http://www.mext.go.jp/a_menu/kokusai/gaikokugo/_icsFiles/afieldfile/2014/01/31/1343704_01.pdf
- 文部科学省. (2014a). 今後の英語教育の改善・充実方策について 報告～グローバル化に対応した英語教育改革の五つの提言～. Retrieved January 18, 2017, from http://www.mext.go.jp/b_menu/shingi/chousa/shotou/102/houkoku/attach/1352464.htm
- 文部科学省. (2014b). 英語教育の在り方に関する有識者会議における審議の詳細. Retrieved January 18, 2017, from http://www.mext.go.jp/b_menu/shingi/chousa/shotou/102/shiryu/attach/1352352.htm
- 文部科学省. (2015). Hi, friends! Plus. Retrieved January 18, 2017, from http://www.mext.go.jp/component/a_menu/education/detail/_icsFiles/afieldfile/2015/04/02/1356176_04.pdf

Appendix

Schedule for Teaching Experiments and Attendances of Participants

Contents	Date	Participants		
		Class A	Class B	Class C
Pre-test	2015. 10. 23	28 (1)	30	29
Lesson 1	2015. 10. 26	28 (1)	29 (1)	29
Lesson 2	2015. 11. 2	29	30	29
Lesson 3	2015. 11. 6	29	27 (3)	29
Lesson 4	2015. 11. 16	27 (2)	27 (3)	29
Lesson 5	2015. 11. 30	28 (1)	28 (2)	28 (1)
Lesson 6	2015. 12. 11	29	30	29
Lesson 7	2015. 12. 14	29	30	28 (1)
Lesson 8	2015. 12. 18	29	30	29
Lesson 9	2015. 12. 21	28 (1)	29 (1)	29
Post-test	2015. 12. 21	28 (1)	29	29 (1)

Note. Numbers in round brackets (i.e., ()) refers to the number of absences.