

Japanese University Students' Order of Morpheme Acquisition

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Abstract

The purpose of this paper is to answer the following three research questions: First, if a learner of L2 is able to produce the target grammatical morpheme correctly in a given production test, is it safe to say that the learner has acquired the item? Second, to what extent is morpheme acquisition sequence, proposed by Krashen (1977), applicable to Japanese learners of English in a given context? Third, can the accuracy rate of morpheme acquisition improve if the pre-test is done at home rather than in class or if the feedback is provided after the pre-test? Grounded in the results, the author contends that a learner's use of the correct form in one production test does not mean that the student has acquired its grammatical item. It has also become evident that the natural order of morpheme acquisition proposed by Krashen (1982) does not seem to hold for Japanese EFL students in question. An answer to the third question appears to be indeterminate since each group's proficiency was not checked before the surveys were conducted, and thus there is a possibility that the differences in accuracy rates, and the degrees of improvement might be triggered by other reasons which have not been originally contemplated in framing the study.

Key words: grammatical morphemes, acquisition order, Krashen, Japanese learners of English

1. Introduction

The American psychologist, Roger Brown (1973)⁽¹⁾, made a longitudinal study of English grammatical morpheme acquisition order by observing three young children who were exposed to English as their first language. He found that 14 morphemes were acquired in a predictable order. Table 1 shows nine of the 14 morphemes which have been referred to in a number of studies.

Table 1 Some of the 14 morphemes acquired by the three children

1	present progressive <i>-ing</i>
2	plural <i>-s</i>*
3	irregular past forms
4	possessive <i>'s</i>
5	copula
6	articles <i>the</i> and <i>a</i>*
7	regular past <i>-ed</i>*
8	third person singular simple present <i>-s</i>*
9	auxiliary <i>be</i>

(*The morphemes in bold letters are those dealt with in this study.)

Brown (1973) suggests that the acquisition order of the morphemes listed in his study is fixed so that if we know that a child has acquired the morpheme, e.g. (9) auxiliary *be*, we can assume that the child has learned all the other morphemes (1-8) preceding (9). Based on the

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notion of morpheme acquisition order, Lightbown and Spada (2013)⁽²⁾ suggest that this idea of fixed order of morpheme acquisition can be applied to L2 (second language) learners' situation. That is, they say that "[s]econd language learners, like first language learners, pass through sequences of development: what is learned early by one is learned early by others."

Referring to the acquisition order of L2 learners' morphemes, Krashen (1982)⁽³⁾ introduces the following diagram (Fig. 1) to show that L2 learners demonstrate their decreasing degrees of accuracy as their acquisition of morphemes progresses from Group 1 to Group 4. Unlike the order of the morphemes listed in a vertical manner (Table 1), some of the grammatical items that L2 learners acquire are grouped together. That is, among the morphemes in Fig. 1, Krashen claims that those in Group 1 are acquired earlier than those in Group 2. To be more exact, those in Group 1, for example, attain higher accuracy rates than those in Group 2, and never the other way round. Here, Krashen seems to equate accuracy with acquisition. In this paper, this seemingly obscure distinction is used because it is assumed that accuracy is probably one index that can tell us the degree of mastery of grammatical features.

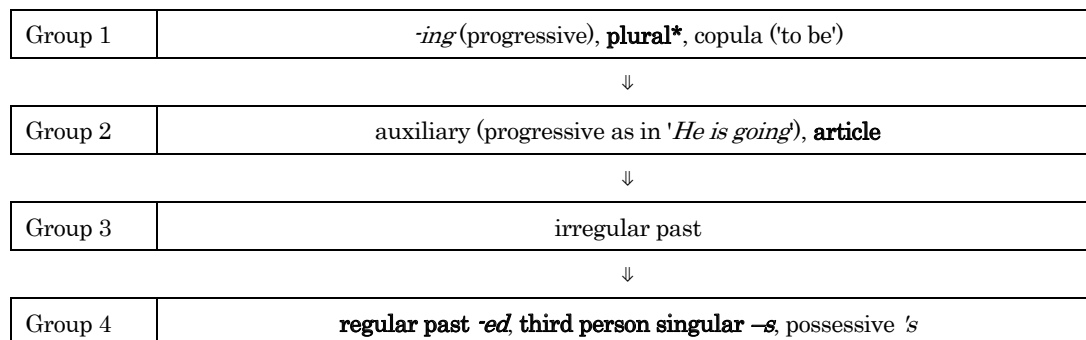


Fig. 1 Morpheme acquisition order of L2 learners (adapted from Krashen's (1977) list)
 (*The morphemes in bold letters are those dealt with in this study.)

In this paper, we would like to investigate to what extent this order can be applicable to Japanese learners of English, focusing especially on the four grammatical items (plural, article, regular past *-ed*, and third person singular *-s*).

2. The Present Study

2.1 Research Questions

In this paper an attempt has been made to answer the following three research questions.

Question 1 If a learner is able to produce the target grammatical morpheme correctly in a given production test, is it safe to say that the learner has acquired the item?

Question 2 To what extent is Krashen's morpheme acquisition sequence applicable to Japanese learners of English as L2 in one given context?

Question 3 Can the accuracy rate of morpheme acquisition improve if the pre-test is done at home rather than in class or the feedback is provided after the pre-test?

2.2 Participants

The participants in these surveys were ninety three first-year college female students majoring in English at a Japanese university. Four different groups of students participated in the surveys at different times (Table 2). Table 2 shows four different surveys, each of which had pre- and post- tests. For example, Type 1 survey was conducted in a first-year college grammar course in 2014 and the number of students was 36. As a pre-test, the students were given a production test (Appendix) in which they were asked to translate four Japanese sentences into English. As a post-test, the learners were given a recognition test (Appendix) where they were asked to choose the most appropriate English sentences to match the Japanese sentences given. What the participants in the four surveys did between the pre-test and post-test was a regular course work designed by their respective syllabus. In other words, they were not assigned to do any particular practices or tasks designed to strengthen the use and knowledge of the morphemes in question.

Table 2 Types of surveys used and the number of participants

Survey Type	1st year Course	The times and forms of the Pre-test and Post-test	No. of students
Type 1	Grammar	The pre-test (production test,) was administered in the middle of the term (June 13, 2014). The post-test (recognition test) was given at the end of the term (August 1, 2014).	36
Type 2a	Writing	The pre-test and post-test were the same production test and given at the beginning (September 19, 2013) and end (January 9, 2014) of the term.	13
Type 2b	Writing	The pre-test (production test) was given to the students who submitted their answers the following week (September 25, 2015). The students did the same production test as their post-test at the end of the term (January 15, 2016).	22
Type 2c	Writing	The pre-test (production test) was given and their answers were given in the following week (April 15, 2016). The students did the same production test as their post-test at the end of the term (July 15, 2016).	20

In the Type 2(a-c) surveys, the same production test was given as pre- and post- tests. However, they were slightly different from each other. That is, in Type 2a the same production test was simply given at the beginning and end of the same term. However, in Type 2b the students were allowed to take home a production test (a pre-test) and then brought their translation the following week. As a post-test, the same production test was given in class at the end of the term. In Type 2c survey, a week after the first production test was given, their answers were checked in class. If their translations were not appropriate, the teacher explained why they were so. The number of the participants in Table 2 was varied partly because the class size of each

course was different and also only those who took both the pre- and post- tests were included in this study.

2.3 Method

In L1 (first language) morpheme acquisition researches, a test called the ‘wug test’ which was coined by Gleason (1958)⁽⁴⁾ is often used. In determining whether children have acquired the English rule of making plural, they are given contexts like the following: “Here is a wug. Now there are two of them. There are two ____.” where they are asked to supply an appropriate word to go in the blank part. In this paper, however, since the learners already have the knowledge of the Japanese language, they are asked to provide English sentences that match the meanings of Japanese sentences.

One of the problems with the use of Japanese sentences as cues is that the learners produce a wide variety of expressions. For example, for the Japanese sentence ‘*Kore ga kono ie ni aru yuitsu no kitchen desu*’, which means literally ‘This is the only kitchen in this house.’, the students gave varied translations which match the part ‘the only kitchen’ such as (1) *only kitchen*, (2) *kitchen*, (3) *only one kitchen*, (4) *the just kitchen*, (5) *an only kitchen*, (6) *only a kitchen*, and (7) *the only kitchen*. To make comparisons easier, the participants were grouped in three levels which we call ‘stages’ whether it is a production test or recognition test. If we take the Japanese sentence mentioned above, the first three were categorized as Stage 1, the wrong use of articles Stage 2, and the correct use of the definite article Stage 3. Spelling errors such as *kitchin* and *kitchine* were ignored.

3. Results

3.1 Research question 1

If a learner is able to produce the target grammatical morpheme correctly in a given production test, is it safe to say that the learner has acquired the item?

In the examination and comparison of the results of the production and recognition tests, it is expected that the learners would probably do better in the recognition test because what they are required to do is to make a selection of the most appropriate sentence, which probably requires less cognitive ability than when they do the production test. In other words, if the production test shows that a learner is at Stage 2, it is assumed that the student’s stage is not likely to fall back on Stage 1 or even they are expected to attain a higher stage, which is Stage 3 in this case.

The result in Fig. 2a shows, however, that twenty five percent of the students, reverted to lower stages, which is shown as ‘Downs.’ Similarly in the case of ‘definite article’ 11% of the learners lowered their stages (Fig. 2b), regular past tense *-ed* 6% (Fig. 2c), and third person singular *-s* 19% (Fig. 2d). The results indicated in Table 1(a-d) support Lightbown and Spada’s (2013) claim that even if the learner produces an appropriate grammatical form in a given context,

it does not mean that he/she has ‘mastered’ its use. It seems that mastery of grammatical morphemes is not as straightforward as it looks as shown in the morpheme acquisition order (Fig. 1), and it never looks like climbing up a ladder one step at a time.

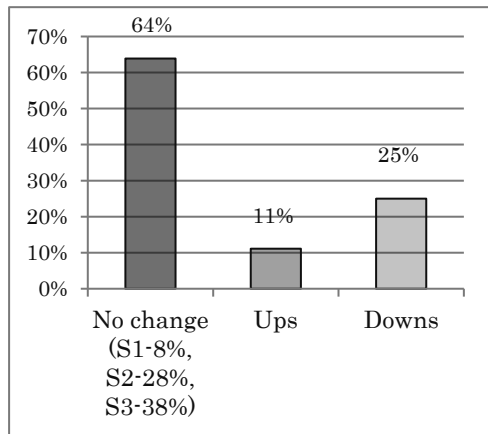


Fig. 2a A comparison of the production and recognition tests: plural *-s*

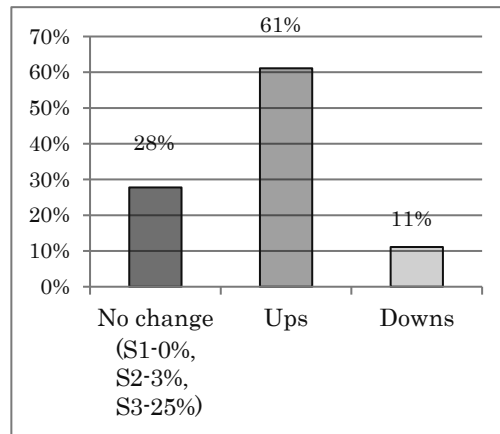


Fig. 2b A comparison of the production and recognition tests: definite article

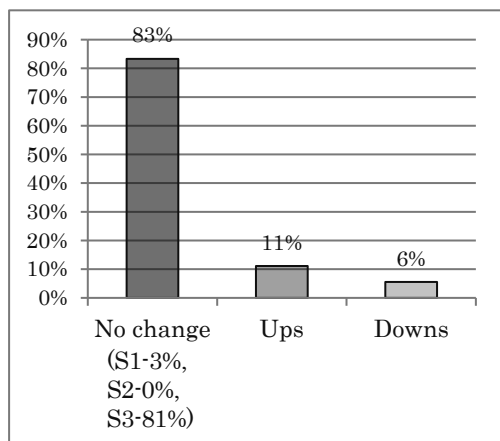


Fig. 2c A comparison of the production and recognition tests: regular past tense *-ed*

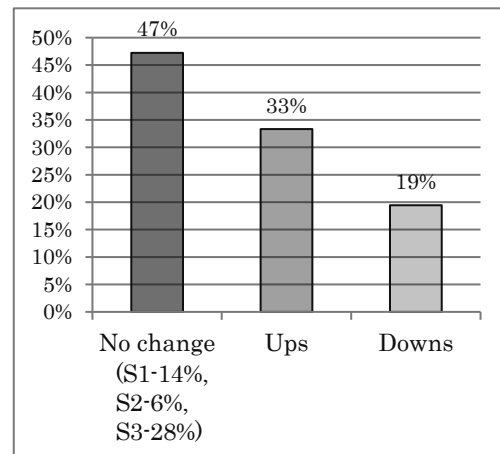


Fig. 2d A comparison of the production and recognition tests: third person singular *-s*

3.2 Research question 2

To what extent is Krashen’s morpheme acquisition sequence applicable to Japanese learners of English as L2 in one given context?

As shown in Fig. 1, Krashen (1977) claims that if we take the four morphemes (plural, article, regular past tense *-ed*, 3rd person singular *-s*) as an example, plural is acquired earliest, and third person singular *-s* the last. Is it possible, then, to see a similar tendency in Japanese learners’ acquisition order of the grammatical features? As shown in our attempt to find an answer to the first research question (Table 1), the accuracy levels of morpheme acquisition (or

acquisition) cannot be determined simply by carrying out one single production test. The learners' present stages are estimated by using the following way as indicated in Table 3. Table 3 shows that if the results of pre- and post- tests are consistent, a learner's stage stays the same. That is, if a learner attains, for example, Stage 2 level of accuracy in both of their pre- and post- tests, the learner's level stays the same, i.e. Stage 2. However, if the result of the post-test is higher than that of the pre-test, for example, the learner's stage jumps from Stage 1 to Stage 3, an intermediate position, Stage 2, is assigned. If the learner's stage shows Stage 3 in the pre-test, but backslide to Stage 1 in the post-test, Stage 1 is assigned because the person's knowledge of the particular rule appears rather unstable. It should be noted, though, that this way of determining what stage the learners are at in terms of the accuracy rates of morpheme acquisition is not based on any particular theories, but for the present study it seems that this method will suffice.

Table 3 Ways of estimating the students' present acquisition stage

Pre-test stage & Post-test stage	Present stage estimated	Pre-test stage & Post-test stage	Present stage estimated	Pre-test stage & Post-test stage	Present stage estimated
Stages 1→1	→ Stage 1	Stages 2→1	→ Stage 1	Stages 3→1	→ Stage 1
Stages 1→2	→ Stage 1	Stages 2→2	→ Stage 2	Stages 3→2	→ Stage 2
Stages 1→3	→ Stage 2	Stages 2→3	→ Stage 2	Stages 3→3	→ Stage 3

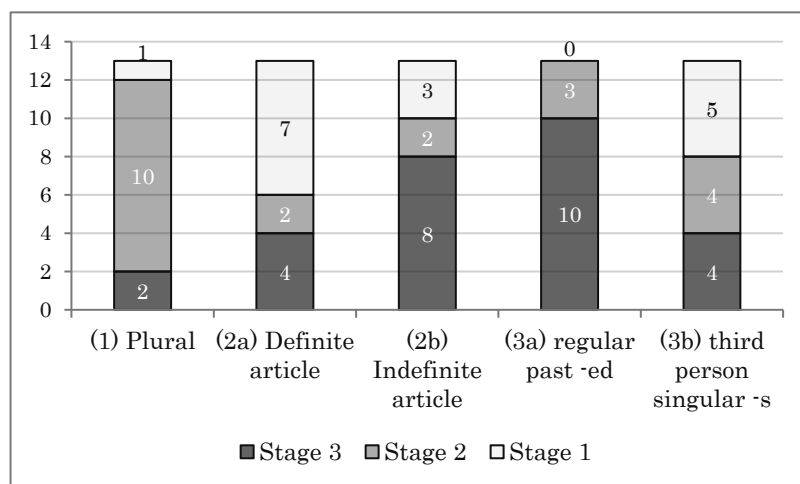


Fig. 3 Type 2a Results of the pre- and post- tests (no. of students)

Fig. 3 shows that the accuracy levels as indicated by Stage 3 increases as you go from (1) plural to (3a) regular past *-ed*, which is rather different from Krashen's morpheme acquisition order as shown in Fig. 4. According to Krashen (1982), the accuracy rate of plural should be ranked highest. However, for the Japanese college students regular past *-ed* ranked highest and plural lowest among the morphemes examined. After the plural, (2b) indefinite article comes next. In Krashen's order, indefinite and definite articles are grouped into the single category of 'article.' From this survey, it appears that the Japanese learners of English do not seem to acquire

indefinite article and indefinite articles around the same time. In fact, an indefinite article seems to be acquired earlier than a definite article. Referring to the English article system, Gass, Behney and Plonsky (2013)⁽⁵⁾ suggests that it is not correct to treat the indefinite article *a* and the definite article *the* as if they are a single grammatical unit.

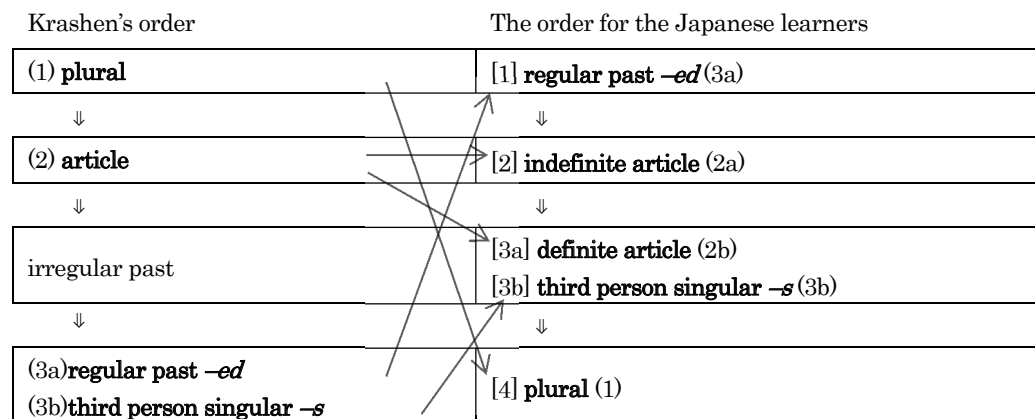


Fig. 4 A comparison of Krashen's (1982) acquisition order and the Japanese learners' order of morpheme acquisition

A number of reasons have been proposed why some morphemes are acquired in a certain order. Introducing researchers' hypotheses, Lightbown and Spada (2013) list three causes that might be playing in determining morpheme acquisition order. One is that the number of times learners are exposed to particular morphemes. Another is the degree of the cognitive difficulty of the morpheme and the third cause is the saliency of the morpheme.

As Shirai (2008)⁽⁶⁾ suggests that a L2 morpheme is easy to learn if the counterpart in L1 exists in a similar context with a similar function. Regular past *-ed* in English does not seem to present much difficulty for the Japanese learners' of English compared with the other four morphemes because the Japanese past tense can be made by simply attaching the past tense marker *-ta* to the end of Japanese verbs, just as English regular past tense is made in a similar way.

The fourth reason may be the order in which particular morphemes are introduced to the learners in their formal instruction. Fig. 5 shows the order in which the five morphemes are presented in the textbooks which many of the students in this study probably used when they were at junior high school. Third person singular *-s* and plural *-s* seem easy, at a glance, to teach and also seem easy to learn the forms because both of them require a simple attachment of *-s* at the end of verbs or nouns. However, when the order of introducing morphemes in the textbooks is compared with the acquisition order for the Japanese learners, those grammatical features in question do not show the same order. In fact, in the textbooks, plural is presented earlier than third person singular, however, the college students' order of acquisition shows that plural seems to present more difficulty than third person singular. Krashen (1987)⁽⁷⁾ says that the morpheme acquisition order does not necessarily have to be reflected in the syllabus of English textbooks, suggesting that what learners acquire is not directly related to the order in which grammatical

structures are presented in formal instruction.

The title of the textbooks	Sample sentences	The order in which the morphemes are taught	The acquisition order for the Japanese learners
New Crown 1	What is this? It is a face. (Lesson 2-1)	indefinite article(2)*	regular past <i>-ed</i> (3)
		↓	↓
New Crown 1	This is the toy. (Lesson 4-1)	definite article(2)	indefinite article(2)
		↓	↓
New Crown 1	I have a book/some books. (Lesson 4-3)	plural(1)	definite article (2) third person singular <i>-s</i> (3)
		↓	↓
New Crown 1	She likes dogs. (Lesson 6)	third person singular <i>-s</i> (3)	
		↓	↓
New Crown 2	I started it last year. (Lesson 1)	regular past <i>-ed</i> (3)	plural (1)

Fig. 5 Comparisons of the order of morphemes which appear in the junior high school textbooks New Crown English Series 1, 2, 3 (2002)⁽⁸⁾ and the acquisition order for Japanese learners in this study
 (*Number = Krashen's natural order of acquisition)

3.3 Research question 3

Can the accuracy rate of morpheme acquisition improve if the pre-test is done at home rather than in class or the feedback is provided after the pre-test?

In Type 2a survey (see Fig. 6a and Fig. 6b), thirteen students were given the production test at the beginning of the second term and the same one four months later. Their acquisition order of given morphemes is shown in Fig. 6a. In Type 2b, however, all the students were allowed to take the first production test home and submitted their answers the following week. About four months later, the same test was given. In a comparison of Fig. 7a and Fig. 7b, the accuracy rates (indicated by Stage 3) of the five morphemes both show a similar trend observed in Fig. 4. Since in Type 2b survey the students were allowed to take the pre-test home and brought their answers the following week, it was expected that they would have had more time to do the task and, thus, would have attained higher accuracy rates in their pre-test. However, the accuracy rates of Type 2b (Fig. 7a) were not greatly different from those of Type 2a (Fig. 6a) or Type 2c (Fig. 8a). In fact, the Type 2b accuracy rates were similar to those of Type 2c (Fig. 8a), which also required students to do the same production test at the beginning and end of the term.

The Type 2c was the only one among the three surveys in which the English versions of the Japanese were provided in the following week, expecting that they would do better in their post-test. However, the rate of improvement shown by 'Ups' was prominent only in 'definite article' (60%), which may be a simple reflection of the low accuracy rate in their pre-test. On the other hand, the improvement rate of the third person singular of Type 2c was even lower than that of Type 2b (Fig. 7b) in spite of the fact the accuracy rates in the pre-test in Type 2b and Type 2c were quite similar. The accuracy rates of Type 2b and Type 2c did not differ greatly, which means that

the provision of extra time to do the pre-test at home did not seem to affect their accuracy rates of morpheme. Nor did the provision of the answers have little effect on the degree of improvement in their post-test in a significant way.

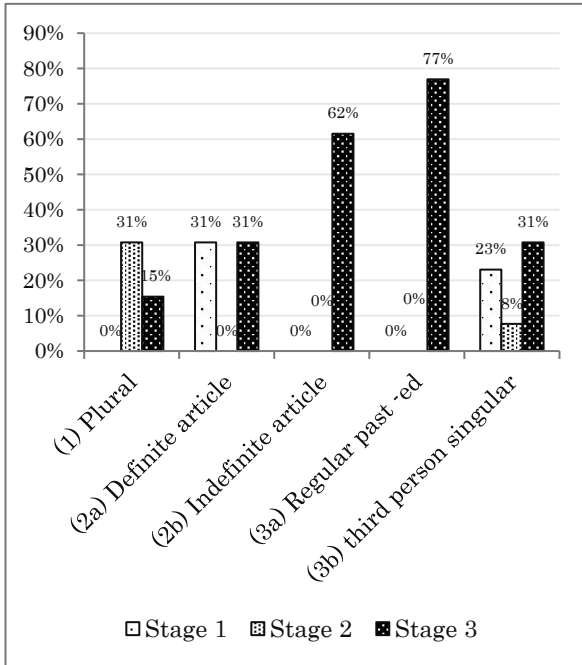


Fig. 6a Type 2a: Students who received the same evaluation in their pre- and post-tests (percent)

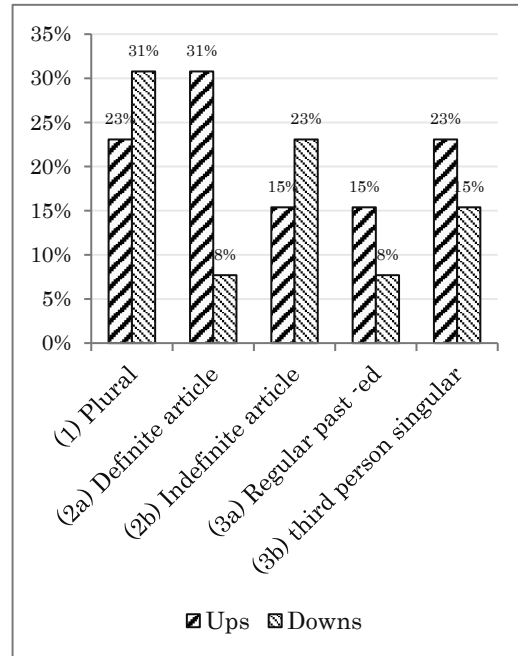


Fig. 6b Type 2a: Students who made some improvement or backslided in their pre- and post-tests (percent)

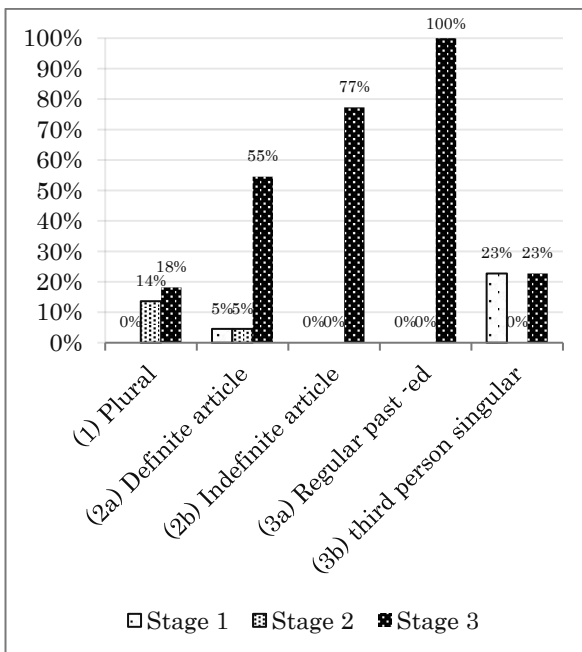


Fig. 7a Type 2b: Students who received the same evaluation in their pre- and post-tests (percent)

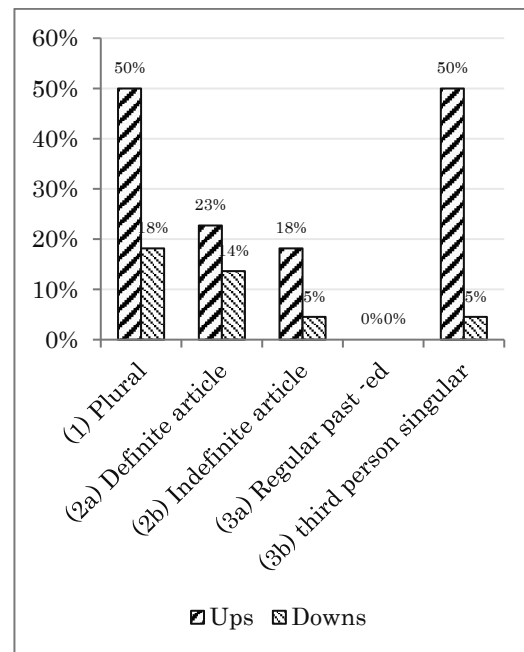


Fig. 7b Type 2b: Students who made some improvement or backslided in their pre- and post-tests (percent)

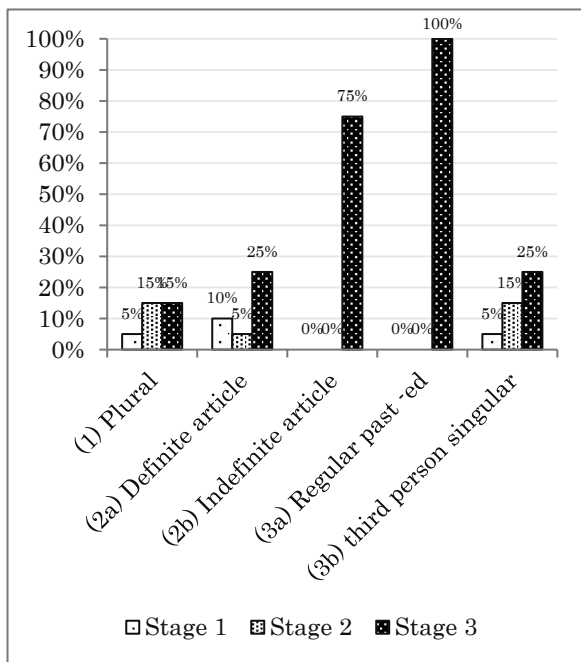


Fig. 8a Type 2c: Students who received the same evaluation in their pre- and post-tests (percent)

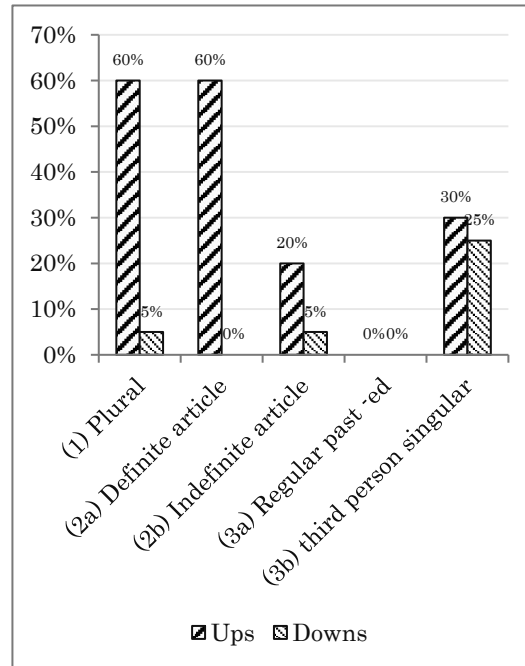


Fig. 8b Type 2c: Students who made some improvement or backslided in their pre- and post-tests (percent)

4. Conclusion

In the present investigation, we found some answers to the three research questions. One is that the fact that a learner can produce a morpheme in the correct form does not mean that the student has acquired its grammatical items. In fact, students often fall back on the premature patterns. This finding would be important particularly for teachers of English in that it needs a careful observation of the learner's performance for some period of time before they can judge whether the learner has acquired a particular morpheme.

Another finding is that the natural order of morpheme acquisition proposed by Krashen (1982) does not hold for these Japanese students learning English as a second language. It was surprising to see that all the three groups of learners (Types 2a, 2b, and 2c) showed the same trend, which was different from Krashen's order. In Krashen's order, 'plural' was learned earliest among the morphemes (Fig. 4). However, in the Japanese learners' order, 'regular past -ed' was learned earliest. The next morpheme in Krashen's order is 'article.' Krashen's order does not differentiate definite article from indefinite article. However, in Japanese learners' order, 'indefinite article' seems to be learned earlier than 'definite article.' A possible reason for the difference may lie in the way the Japanese sentence was given. That is, in Japanese the following cue '*hitotsu*' (one) was inserted after the word '*dorama*.' This hint may have helped the learners to produce an appropriate indefinite article.

An answer to the third question (Can the accuracy rate of morpheme acquisition improve if

the pre-test is done at home rather than in class or the feedback is provided after the pre-test?) seems to be indeterminate since each group's proficiency was not checked before these surveys were conducted and therefore the differences in accuracy rates and the degrees of improvement might be triggered by reasons such as the inherent differences in their proficiency levels in the first place.

The shortcomings of this research are two-fold. One is the way the learners' acquisition levels were measured. They used Japanese sentences as cues and translated them into English. Instead of speaking the sentences orally, they wrote them on the paper. If their spontaneous speech in English had been recorded, the result might have been different. This way of measuring the degree of accuracy of morpheme acquisition is different from tests where compulsory contexts are provided and where learners have to supply appropriate items to fit into the contexts. And if the use of different verbs and nouns in different sentence structures had been observed, we might have obtained different accuracy rates.

Another problem is that only the two tests were given to the learners with the interval of about four months between the two tests. As we have found that their accuracy rates do not develop in a linear order, the period of an investigation of this kind should be extended to more than four months, possibly one year and should be done more frequently, for example, every month.

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Appendix The production and recognition tests used in the surveys

A. The production test used for Type 1, Type 2a, Type 2b, and Type 2c surveys

クラス____ 番号____

次の日本語を英語に直しなさい。

- (1) 私はリンゴが好きだ。 _____
- (2) これがこの家にある唯一のキッチンです。 _____
- (3) 私は昨日面白いドラマ(1つ)を見た。 _____
- (4) 彼は朝起きるとすぐ歯ブラシをする。 _____

B. The recognition test used for Type 1 survey

クラス____ 番号____

次の日本語をもっとも適切に表している英文を1つ選びなさい。

- (1) 私はリンゴが好きだ。
1. I like apple.
 2. I like an apple.
 3. I like apples.
 4. I like to eat apple.
- (2) これがこの家にある唯一のキッチンです。
1. This is the kitchen that there is only in this house.
 2. This is only kitchen which is in this house.
 3. This is the only kitchen in this house.
 4. This is the kitchen in this house.
- (3) 私は昨日面白いドラマ(1つ)を見ました。
1. I saw the interesting drama yesterday.
 2. I saw a interesting drama yesterday.
 3. I watched an interesting drama yesterday.
 4. I was watching the drama yesterday.
- (4) 彼は朝起きるとすぐ歯ブラシをする。
1. He brushes his teeth as soon as he gets up in the morning.
 2. As soon as he get up in the morning, he brush his teeth.
 3. He's going to brush his teeth after he get up in the morning.
 4. He brush my teeth at once when I got up in the morning.