

## *The Effects of Written Feedback in the Form of Recasts*

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This study examined the effects on 25 Japanese university students' text revisions following teacher feedback through written recasts. Written recasts were categorized as recasts given on learners': (1) grammatical errors; (2) lexical errors, (3) unsolicited use of Japanese, (4) spelling errors and (5) content. Recasts were also categorized according to (6) the degree of differences between students' original erroneous utterances and written recasts, as well as (7) recast lengths. In total, 125 written recasts were provided on students' essays, and students were directed to revise their first draft referring to these recasts. The students' revised essays were quantitatively and qualitatively analyzed. The results showed that written feedback in the form of recasting is, in general, beneficial for learners to notice their errors or mistakes leading them to repair regardless of the degree of differences and the length of the recasts. However, their effects varied according to students' error types. The development of their writings from the first draft to a revised version was examined from the points of accuracy, fluency and complexity. It was found that written recasts contributed to the development of the three aspects reducing trade-off effects between accuracy and fluency.

**Key words:** writing recasts, complexity, writing feedback, errors, Japanese tertiary learners

### **INTRODUCTION**

Writing is one of the crucial skills in students' English learning—whether in

English as a second language (ESL) or English as a foreign language (EFL)—though even ESL learners struggle to produce linguistically correct writing (e.g., Hartshorn, Evans, Merrill, Sudweeks, Strong-Krause, & Anderson, 2010). Teachers may try to give the best feedback to help students improve their writing. Written feedback can be focused on form or on content, and both have played crucial roles in improving student writing quality (Coffin, Curry, Goodman, Hewings, Lillis, & Swann, 2003). Previous studies found that not only teachers, but students themselves prefer teacher written feedback (e.g., Nugrahenny, 2007). However, since Truscott's claim (1996) that written corrective feedback would never improve learner writing ability—and may even be harmful—it has been debated to what extent learners can benefit from written feedback. There seems to be some agreement that learners can improve their writing in a second draft on the same topic after being given corrective written feedback (e.g., Ellis, Sheen, Murakami, & Takashima, 2008; Ferris, 2004; Truscott, 1996, 1999). However, it has not been well researched whether accuracy, fluency or complexity in writing improves and how many errors or mistakes in writing are corrected.

As for the effects of feedback, recasts have been gaining attention. Though the beneficial effects of recasts as oral feedback on second language (L2) acquisition have been reported (e.g., Doughty & Varela, 1998; Loewen & Philip, 2006; Loewen & Nabei, 2007; Muranoi, 2000), several studies have also demonstrated the ineffectiveness of recasts (e.g., Lyster, 1998a, 2004; Lyster & Ranta, 1997; Varnosfadrani & Basturkmen, 2009). Studies on recasts both in classroom and experimental settings have shown mixed results as to a facilitative role for learning. Previous research showed that recasts in the form of written feedback would be more effective than positive evidence (a model of what is grammatical and acceptable) in the form of models and traditional grammar instruction (Ayoun, 2001). However, Ayoun (2004), which is a follow up study of Ayoun (2001), concludes it is difficult to compare the effect of the three treatments (recasts, models, instruction) on acquisition.

The present study with Japanese university students examines the effectiveness of written feedback in the form of recasts by measuring: to what extent learners would repair their errors or mistakes according to types of recasts; the development

of accuracy, fluency and complexity in writing; and variation of the correlation between accuracy and fluency.

## **BACKGROUND**

### **Definition of Recast**

Lyster and Ranta (1997) defined recasts as reformulation of all or part of the students' utterances. Long (2006) redefined corrective recasts as a reformulation of learners' preceding utterance in which non-target-like item(s) is/are corrected to target language form(s) while the interlocutors' focus is not on language but on meaning. Recasts are, in general, considered as implicit corrective feedback reformulating all or part of ill-formed utterances provided by learners without changing the central meaning (Iwashita, 2003; Long, 1996; Lyster, 1998a, 1998b).

Long (2006) states that L2 research findings have shown that recasts in the L2 are effective, also adding that recasts are not clearly necessary for acquisition but are facilitative and especially efficient for older, more proficient L2 learners in that they do not interrupt the flow of conversation, and thus keep learners focused on message content. Lyster (2007) also states that recasts help maintain the flow of communication, keeping learners' attention on content and enabling them to participate in interaction in which their linguistic abilities can exceed their current level. In fact, a number of previous experimental studies have provided positive reports on the impact of recasts in L2 acquisition (e.g., Doughty & Varela, 1998; Loewen & Nabei, 2007; Loewen & Philp, 2006; Muranoi, 2000).

However, some previous studies showed that recasts were less effective than other types of feedback. Lyster (2004) compared the effects of recasts and prompts (i.e., clarification requests, repetitions, metalinguistic clues and elicitation) in a quasi-classroom study, and statistical analysis of the results of the written tasks revealed that students receiving prompts performed better than students receiving recasts. Varnosfadrani and Basturkmen (2009) argued that explicit correction would induce learners' awareness more than implicit correction such as recasts, referring to the crucial role of attention in learning.

## **Types of Recast**

Previous studies examined whether the degree of difference between the learner's initial utterance and the recast would affect their effectiveness by counting the number of changes, and found that recasts with only a single change are more likely to be noticed by learners more than recasts with multiple changes (Philip, 2003; Sato, 2009). Lengths of recasts (short or long according to the number of morphemes) and their effects were also examined, and it was revealed that learners can notice shorter recasts to reformulate their original erroneous utterances (Philip, 2003; Sato, 2009). As for error types of learners' original erroneous utterances to which recasts were given, previous studies showed grammatical recasts were less likely to be effective (e.g., Kim & Han, 2007; Sato, 2009; Trofimovich, Ammar, & Gatbonton, 2007; Williams, 1999). Trofimovich, Ammar, and Gatbonton, (2007) suggest that in order for learners to notice their own errors through grammatical recasts and to reformulate them after recasts, they should already have knowledge of the form. Previous studies showed that recasts of lexical errors are noticed more by the students, showing they have greater effectiveness than those directed at grammatical errors (e.g., Kim & Han, 2007; Oliver, 1995). In Sato (2009), it was reported that recasts addressed at students' L1(Japanese) led to the highest rate of immediate repair, and explained that this is attributed to the salience of the recast and the cognitive process students experienced when they decided to speak Japanese followed by the English equivalent (recast). He interpreted that when feedback was given immediately after students found interlanguage deficiencies, they could easily understand the corrective purpose of the recast, leading them to produce what they had wanted to say.

## **Written Recast**

Ayoun (2001) examined the effectiveness of written recasts by comparing it with modeling (pre-emptive positive evidence) and grammatical instruction (explicit positive evidence and negative feedback). In the study, in testing the effectiveness of the three conditions, the acquisition of the aspectual distinction between the past

tense in French was used, and recasts were given as implicit negative evidence. Post-test results revealed written recasts were significantly more effective than grammatical instruction, but not modeling. Although written recasts could have served as implicit positive evidence in some cases, it was concluded that the result partially supported recasting as the most effective form of feedback. In the follow up study, analyzing the mixed results, Ayoun (2004) concluded that the acquisition of subtle and complex structures requires both implicit negative feedback such as recasts and explicit negative feedback as provided by traditional grammatical instruction.

### **Trade- Offs in Writing**

Skehan (1996) points out that there are three aspects of production: accuracy, fluency and complexity. Accuracy is defined by Skehan (1996) as the extent to which the target language is produced in relation to the rule system and how well the learner can handle whatever level of interlanguage complexity he/she has achieved. Ellis (1987, 2003) mentions that accuracy requires syntactic processing with the availability of planning time. Fluency refers to learners' ability to mobilize their system to communicate meaning in real time, prioritizing meaning over form, and is achieved when learners can exercise strategies to avoid or solve problems quickly (Ellis, 2003). Complexity is defined as the extent to which elaborate structured interlanguage is utilized (Skehan, 1996). In writing, referring to previous studies (e, g., Ellis, 1987, 2003; Skehan, 1996), it can be argued that: accuracy concerns how precisely the learner can write what he/ she wants to write; fluency is likely to be indicated by a high rate of writing; complexity concerns to what extent the language produced is elaborate (Hunt, 1970; Sato, 2008; Tong-Frederics, 1984;).

As for the relation between accuracy, fluency and complexity, Ellis (2003) argues that there could be trade-offs in L2 learners' production, meaning that when L2 learners attend to accuracy in their writing, it interferes with their ability to conceptualize, formulate, and articulate messages, preventing them from showing fluency. Skehan and Foster (1997) argue that in general fluency may be accompanied by either accuracy or complexity but not both, referring to trade-offs

in performance due to learners' limited attentional resources. However, there also is a contrasting view. Sato (2008) examined the relation between accuracy and fluency in low-intermediate Japanese high school learners' writing. One experimental group was directed to be concerned about accuracy and the other group was directed to be concerned about fluency. It was found that there was no minus correlation between accuracy and fluency in the two experimental groups. The control group, which was not directed to be concerned either about accuracy or fluency, showed moderate correlation between them. He concluded that learners can access multiple attentional resources. Some previous studies found that written corrective feedback decreases fluency; letting learners focus more on accuracy at the expense of fluency (e. g., Kepner, 1991; Sheppard, 1992). To my knowledge, the effects of written corrective feedback on Japanese EFL learners—in relation to the three aspects—have not yet been fully examined.

### **Rationale of the Investigation of Written Recasts**

There is a general agreement that recasts are most commonly employed as oral correction by teachers in EFL or ESL classrooms (e.g., Lyster, 1998b; Lyster & Ranta,1997) and several studies showed the beneficial effects in learning (e.g., Ayoun, 2001; Doughty & Varela, 1998; Iwashita, 2003; Leeman, 2003). However, Philip (2003) pointed out the limitations of working memory as one of the factors which hinder the beneficial effect of recasts. Recasts in the form of oral corrective feedback demand an immediate cognitive comparison also requiring learners to be dependent on short-term memory. In the study which compared the effects of face to face communication and computer-mediated communication on L2 development, Payne and Whitney (2002) found greater improvements in oral proficiency in the post-test for learners who were in the computer-communication group than those in the face to face communication group. They interpreted that computer-mediated communication supported students who were less able to maintain oral information in memory: Interlocutors' feedback was less fleeting as learners were able to trace it by reading. Williams (1999) also suggested that if cognitive comparison does not overtly tax learners' attentional resources, learners with lower working memory would benefit in feedback. As written feedback is delayed and imposes less cognitive demand without requiring immediate on-line cognitive comparison, we

could assume that written recasts would be better noticed by learners leading them to L2 development than recasts provided as oral feedback.

Several studies, for example, conducted by Lyster and his colleagues (e.g., Lyster & Ranta, 1997; Lyster, 1998b, Lyster, 2004; Panova, & Lyster, 2002), demonstrated that recasts are the least effective means of oral corrective feedback. However, some other studies conducted in the Japanese EFL context in which learners are concerned with accuracy in their production, found recasts to be effective (e.g., Loewen & Nabei, 2007; Muranoi, 2000). Therefore, it is worthwhile to examine whether written recasts are effective in the Japanese EFL context.

### **Description of the Research Context**

English has long been taught as a knowledge-based subject in Japan. It is said that Japanese learners have dual orientations for learning English: a practical, realistic goal related to examinations and grades; a vague idealistic goal related to using English for international or intercultural communication, and for many learners, passing of knowledge-based exams is the primary objective (Yashima, 2000). The data for the present study were collected in an English class titled “Foreign Language Communication” in a national university in an urban area in western Japan. The purpose of the English class is to improve integrated skills of reading, writing, listening and speaking in English.

## **RESEARCH QUESTIONS**

### **Measures of Effects of Written Recasts on Writings**

In this study, we investigated the effects of written recasts by type. It seems that there is an agreement that learners demonstrate improvement in their writing in a second draft on the same topic after being given corrective written feedback. (e.g., Ellis et al., 2008; Ferris, 2004; Truscott, 1996, 1999). In the present study, the extent to which written recasts can help learners in improving accuracy, fluency and complexity in text revision and whether or not there are trade-offs between accuracy and fluency were examined. Research questions were operationalized as:

1. Are written recasts noticed, leading Japanese EFL students to repair in the text revision?
2. How effective are written recasts for Japanese EFL students to repair in the text revision according to error type?
3. How effective are written recasts for Japanese EFL students to repair in the text revision according to the degree of differences between errors or mistakes and recasts?
4. How effective are written recasts for Japanese EFL students to repair in the text revision according to the lengths measured by the number of morphemes?
5. Do written recasts contribute to the development of accuracy, fluency and complexity in the text revision?
6. Do correlations of accuracy with fluency in the writing change between the first draft and the revised draft after learners are provided written recasts?

## **METHOD**

### **Participants**

The class consisted of 27 students (12 males and 15 females) between 19 and 21 years of age. All of them belonged to the department of teacher training and school education. The Japanese EFL teacher taught the class. He is the researcher of the study as well. Two students who were absent from either the first or second week of the class were excluded from the study.

### **Procedures**

In the first class after summer vacation in 2010, students were assigned to write an essay on the topic of "My Summer Vacation. Students were given 30 minutes to complete the essay and were not given any direction on whether they should focus on accuracy or fluency. Although this was not a test but a classroom writing task they were not allowed to use a dictionary as it was aimed at measuring their writing

proficiency from the points of accuracy, fluency and complexity. After they submitted the essay, the rest time of the class time was spent with students engaged in listening, reading and speaking activities which were not a part of this study.

The teacher-researcher wrote written recasts in the blank space of each essay. On average 5 recasts were given to each of the students with a minimum of 2 (two students) and a maximum of 9 (one student).

There was no target focus in providing recasts in the study. Though Bitchener (2008) argues that there should be only one or a few categories for providing feedback to prevent information overload, it was assumed that this would be impractical in actual classroom settings. As students, in general, want to improve overall accuracy in writing (Hartshorn et al., 2010), focusing on one or a few error categories may lead to students neglecting other areas (Xu, 2009). Written recasts were provided randomly depending mainly on the teacher's common sense intuitions and experience so that students could revise the first draft well enough to improve the overall quality of the writing as is usually done in EFL classroom settings.

In the second session, one week after the first session, each of the essays was given back to the students. Students were asked to read through the feedback for the text revision and given 20 minutes to revise the essay. They were not allowed to use a dictionary this time, either. After finishing the revision, they were given a B5- size white paper and were asked to comment in Japanese, about how they felt about written recasts and on using them in revising their first draft, because the information they were asked to deliver was complex.

## **Analysis**

### **Classification of written recasts**

In order to examine the effectiveness of recasts according to types, recasts were categorized as recasts given to learners': (1) grammatical errors; (2) lexical errors, (3) unsolicited use of Japanese, following Lyster and Ranta (1997). Grammatical errors are errors in the use or lack of determiners, particles, verb forms, word order;

lexical errors are inappropriate, imprecise or inaccurate choices of lexical items; unsolicited use of Japanese is an instance where a student writes Japanese instead of English. In addition, recasts given to (4) spelling errors and (5) contents were examined. Content recasts were provided to an expression(s) whose meaning(s) is (are) vague or awkward. The following are examples according to types. Written recasts were written in italics. Changes were written in bold and will be explained later.

Example (1) Grammatical recast.

S1: It is beautiful. ← (written recast) *Oh, it **was very** beautiful.*

Example (2) Lexical recast

S2: In the car I saw a dream. ← *You **had** a dream in the car?*

Example (3) Recast to unsolicited use of L1

S3: We ate a lot of *Ika* (squid in Japanese) in Hakodate. ← *Oh, you ate a lot of **squids!***

Example (4) Recast to spelling error

S4: I talked with a foreingner. ← *You **had a talk** with a **foreigner!***

Example (5) Content recast

S5: We lost the games. ← *You **lost all of the** games?*

Recasts were also categorized according to the degree of differences and lengths following the parameters of previous studies (e.g., Philip, 2003; Sato, 2009). To examine the effects of the degree of difference between the learner's initial writing and the written recast, the number of changes was counted and coded following Philip (2003), but for the study, recasts were divided into two categories according to whether the recast had only a single change or more than one change. This decision was made referring to Sato (2009) which revealed that recasts with more than one change were less likely to be noticed by the Japanese learners. Conversion

of the subject was not counted as a change and inversion counted as one change. Exclamation and interjection were not counted. The following example was counted as one change.

Example (6) Grammatical recast

S6: Kourijima is small island. ← *Oh, it is **a** small island.*

Examples (1) and (5) were counted as two changes; examples (2) and (3), as one change; example (4), as four changes.

As for the lengths, written recasts were categorized into long or short ones according to the number of morphemes, based on Philp (2003) and Sato (2009): recasts with more than five morphemes were coded as long. Example (7) was counted as short, while (8) was counted as long.

Example (7) Short recast (lexical, one change)

S7: I pointed an umbrella. ← *Oh, you **opened** an umbrella.*

Example (8) Long recast (grammatical, four changes)

S8: I don't know what should I teach to child then.

← *OK, you **didn't** know what **you should** teach to **children**.*

Drawing on previous studies that insist on the importance of modified output in L2 learning (e.g., Gass, 2003; Izumi, 2002; Shehadeh, 2002; Swain, 1985; Loewen, 2004), students' correct written repair was measured in the study. When students' errors, mistakes or inappropriate expressions to which recasts were given, were corrected in the revision, it was counted as successful (repair) and rewarded one point. If they failed to make the revision, it was counted as failed and a point was not given. We computed success rates. In the situation when students did not use original utterances to which recasts were given, it was excluded in calculating the success rates. The following are examples of a successful revision, a failed revision and one excluded in calculating the success rates.

Example (9) Successful

S9: I thought it was necessary. ← *Yes. It was necessary.*  
(Student's revision) → I thought it was necessary.

Example (10) Failed.

S10: I was belonged to the club. ← *Oh, you belonged to the team.*  
(Student's revision) → I was belonged to the team.

Example (11) Excluded

S11: I saw their swimming in the sea. ← *You saw them swimming in the sea?*  
(Student's revision) → My friends began swim in the sea.

In example 11, the student produced ill-formed output. However, it was not counted as failed but excluded, because whether he noticed the recast or not is unclear as he did not use the same structure in the revision.

One rater conducted categorization of written recasts. A week after the first classification, the same rater conducted it again. This method of classification follows Alderson et al. (1995), which explains that multiple rating sessions increases the reliability of the rating. Where there were discrepancies between the two ratings (4 cases), a second rater was invited to rate them. After discussion, the disagreement was resolved.

*Writing accuracy, fluency and complexity*

To measure accuracy, the proportion of the number of T-units without lexical and grammatical errors in the total number of T-units in the writing was calculated. This means that the denominator was the number of T-units and the numerator was the number of T-units which did not include lexical and grammatical errors. This measure was taken in accordance with previous studies (e.g., Sato, 2008; Wolfe-Quintero, Inagaki, & Kim, 1998). I decided not to count errors related to the usage of articles as they present difficulties even for proficient learners. In measuring fluency, the number of words written in the essay was counted for the

current study, as is rationalized in Wolfe-Quintero et al (al.) (1998) and Ellis and Barkhuizen (2005). As for measuring complexity, it was decided to measure the mean length of T-unit by calculating the average number of words per T-unit following previous studies such as Ortega (2003) and Wolfe-Quintero et al (1998). In the relation of the three aspects, it was decided to examine whether or not there are trade-offs between accuracy and fluency in writing referring to Ellis (2003) and Sato (2008).

## RESULTS

### Success Rates of Recasts According to Types.

In total, 125 written recasts were recorded. Grammatical recasts were made 81 times: lexical recasts, 17 times; recasts to unsolicited use of L1, 11 times; recasts to spelling error, 6 times; content recasts, 10 times. As for the lengths, long recasts were recorded 81 times and short recasts were made 44 times. About the degree of differences, single change recasts were recorded 48 times, and multiple change recasts were recorded 77 times. Table 1 summarizes the number of recasts, repairs, failed revisions, avoided revisions and success rates according to error types; Table 2 shows the results according to the differences; Table 3 shows the results according to the lengths.

**TABLE 1**  
**Number of Recasts, Repairs, Failed Revisions, Avoided Revisions and Success Rates by Error Types**

Types	Frequency	Repair	Failed	Avoided	Success rate
Grammatical	81	43	31	7	58%
Lexical	17	10	5	2	60%
L1 use	11	9	1	1	90%
Spelling error	6	4	2	0	67%
Contents	10	4	4	2	50%
Total	125	70	43	12	62%

**TABLE 2**  
**Number of Single Change Recasts, Multiple Change Recasts, Repair, Failed Revisions, Avoided Revisions and Success Rates**

Types	Frequency	Repair	Failed	Avoided	Success rate
Single change	48	28	16	4	64%
Multiple	77	42	27	8	61%
Total	125	70	43	12	62%

**TABLE 3**  
**Number of Long and Short Recasts, Repair, Failed Revisions, Avoided Revisions and Success Rates**

Types	Frequency	Repair	Failed	Avoided	Success rate
Short	44	23	17	4	58%
Long	81	47	26	8	64%
Total	125	70	43	12	62%

To answer the first research question (RQ1. *Are written recasts noticed, leading Japanese EFL students to repair in the text revision?*), the success rate was calculated. 70 written recasts successfully led students to repair and 43 failed. In 12 cases students did not use the same structures, words or expressions to which the recasts were given, and were excluded in calculating the success rates. The success rate calculated was 62%. To examine whether there was a statistical difference between the number of repairs (70) and failed revisions (43), a chi-square statistic with Yates' continuity correction was calculated, finding a significant difference between them. ( $\chi^2 = 6.45$ ,  $df = 1$ ,  $p = .011 < .05$ ).

The second research question asked about the success rates of written recasts according to their types (RQ2. *How effective are written recasts for Japanese EFL students according to error type?*). Among 125 written recasts in total, grammatical recasts occurred 81 times with a 58% success rate, lexical recasts occurred 17 times with a 60% success rate, L1 use recasts occurred 11 times with a 90% success rate, spelling error recasts occurred 6 times with a 67% success rate, and contents recasts occurred 10 times with a 50% success rate. A chi-square statistic with Yates'

continuity correction revealed there was a significant difference between the number of repair and failed revisions only in L1 use ( $\chi^2 = 6.40$ ,  $df = 1$ ,  $p = .011 < .05$ ).

The third research question concerned the success rates according to the degree of difference between the learner's initial writing and written recasts (RQ3. *How effective are written recasts for Japanese EFL students according to the degree of differences?*). It was reported that single change recasts occurred 48 times with a 64% success rate and that multiple change recasts occurred 77 times with a 61% success rate. A chi-square statistic test with Yates' continuity correction revealed that there was not a statistically significant difference in the success rates between single change recasts and multiple change recasts.

The fourth research question asked whether there is a difference in the success rates according to the lengths of written recasts (RQ4. *How effective are written recasts for Japanese EFL students according to length?*). It was recorded that short recasts with five morphemes or less occurred 44 times with a 58% success rate and that long recasts with more than five morphemes occurred 81 times with a 64% success rate. A chi-square statistic test with Yates' continuity correction revealed that there was not a statistically significant difference in the success rates between short recasts and long recasts.

### **Accuracy, Fluency and Complexity**

The fifth research question concerned the development of accuracy, fluency and complexity from the first draft to the second draft (RQ5. *Do written recasts contribute to the development of accuracy, fluency and complexity in the text revision?*). Mean scores of accuracy, fluency and complexity improved. The results of *t*-tests indicated that there was a statistically significant difference with a large effect size between the first draft and the second draft in fluency ( $t(24) = -6.55$ ,  $p = .00 < .05$ ,  $r = .80$ ) and complexity ( $t(24) = -4.53$ ,  $p = .00 < .05$ ,  $r = .68$ ). However, that was not the case in accuracy ( $t(24) = -1.1$ , *n.s.*  $r = .22$ ). Table 4 summarizes the results.

**TABLE 4**  
**Mean Scores and Sds of Accuracy , Fluency and Complexity in the First and Second Drafts**

	n	Accuracy		Fluency		Complexity	
		Mean	SD	Mean	SD	Mean	SD
First draft	25	59.8	13.7	120.3	41.2	8.2	1.2
Second draft	25	62.8	15.3	139.1	40.1	8.7	1.4

Note. Accuracy score is the proportion (%) of the number of T-units without lexical and grammatical errors in the total number of T-units in the writing. Fluency score is the number of words written in the essay. Complexity score is the average number of words per T-unit

Research question 6 concerned trade-offs of accuracy and fluency in writing (RQ6. *Do corrections of accuracy with fluency in the writing change between the first draft and the revised draft after being provided written recasts?*). To investigate the correlation of accuracy with fluency in writing, we examined Pearson’s correlation coefficients. As table 5 shows, in the first writing, little correlation was observed, but in the second writing, a significant weak correlation was observed.

**TABLE 5.**  
**Pearson’s Correlation Coefficients of Accuracy with Fluency**

	n	Pearson’s correlation
First draft	25	.148
Second draft	25	.380*

Correlation is significant at the .05 level (2-tailed)

## DISCUSSION

### Success Rates of Recasts According to the Type

It was found that students were more likely to show repair to written recasts than not. A 62% success rate is higher than those of oral recasts examined previously (e.g., Lyster & Ranta, 1997). It is assumed that written recasts can be more effective than oral recasts in leading learners to repair their erroneous production. Eleven students mentioned in the free comments that they found they had made mistakes or errors when they read recasts and revised their work. Six students wrote in the comments that they found they had not yet learned the correct grammatical knowledge about the structures and that by reading the recasts they learned the grammatical rules correctly. This can imply that written recasts activated students' previously existing learned systems and partially acquired knowledge. In addition, in some cases, it can be interpreted that written recasts provided students with opportunities to learn structures they had not yet learned. Four students wrote that by reading the recasts they learned how to write what they had wanted to write but couldn't. In the situation, the students were able to fill the gap between what they wanted to write and what they actually wrote after referring to the written recasts.

Variation of success rates by the error types suggests the effectiveness of recasts varies according to the type. Recasts to L1 use recorded the highest success rate, then recasts to spelling errors, followed by lexical recasts, grammatical recasts and content recasts ( L1, 90% > S, 67% > Lex, 60% > G, 58% > C, 50%). This is similar to Sato (2009) which compared the effectiveness of oral recasts according to the types. As the reason that L1 recasts led to the highest success rate, we can point out its salience as is the case in oral recasts (Sato, 2009). In the first draft when students used the Japanese language, they found interlanguage deficiency or a lack of knowledge. In reading recasts it was easy for them to find the English equivalents of what had been written in Japanese, so that they could use them just by changing the Japanese to English. The lowest success rate of content recasts can be attributed to their vagueness. Although content recasts had corrective intent, students often must have perceived them as confirmation, paraphrasing or just brief comments.

Example (12) Content recasts

S12: I played tennis every day, six days a week.

← *Oh, You played tennis very hard, almost every day.*  
(There was no revision from the student.)

In this case, we can assume that the student perceived the recasts not as corrective feedback but as a brief comment from the teacher, as is evidenced by his comment that he could not understand the purpose of some written recasts. Grammatical recasts also recorded a lower success rate (58%) than the total success rate (62%). This result is compatible with previous studies on oral recasts (e.g., Kim & Han, 2007; Sato, 2009; Trofimovich, Ammar, & Gatbonton, 2007; Williams, 1999). Trofimovich et al. (2007) suggested that students should already have knowledge of the form so that they can notice their own errors through recasts and to reformulate them after recasts. This argument could be partially applied to written recasts in this study. It can be assumed that some students could not show repair because of a lack of knowledge on the form to benefit from the enhancing effect of recasts, even though they were not oral but written.

The results showed that effects of written recasts were not affected by the length or the degree of difference between the learner's initial writing and the written recast. One unexpected finding is that long recasts recorded a higher success rate than short recasts. These findings are incompatible with previous studies (e.g., Philip, 2003; Sato, 2009) which showed shorter and single change oral recasts are better noticed, leading to learners' repair. As to the possible reasons for this, it can be interpreted that even written long recasts with multiple changes can let learners repair their previous erroneous production regardless of their limitation of working memory. Unlike oral feedback, written feedback was not fleeting and thus enabled students to trace it back by reading (Payne & Whitney, 2002). This nature of written feedback was beneficial enough for students with shorter working memory or difficulty in maintaining information in memory to utilize not only short-single change recasts but long multiple change recasts. A student's comment that she repeatedly read the written recasts to repair her errors confirms this interpretation.

### **Accuracy, Fluency and Complexity**

From the first draft to the second draft, accuracy, fluency and complexity developed in the writing. This is consistent with the argument that written corrective feedback is beneficial in editing in revision (e.g., Ferris & Roberts, 2001; Truscott, 1996, 1999). In the second writing, some of them wrote additional information in the revision, contributing to the statistically significant development in fluency. This smaller cognitive load (in that they did not have to think about what to write) also encouraged them to write more complex sentences, resulting in statistically significant development in complexity. However, in writing additional information and complex sentences, errors and mistakes naturally occurred. This can be the reason that the development of accuracy was not statistically significant. Another possible reason why increases in accuracy were not significant is the small number of recasts given to each student.

As for the trade-off effect between accuracy and fluency, the correlation between the two was little in the first draft, but a significant weak correlation was observed in the second draft. This means that the extent of trade-offs decreased with the correlation of accuracy and fluency improving in the second draft. This is compatible with Ruegg (2010). A higher correlation of the two in the second draft is thought to be due to students' making revisions while referring to the written recasts contributing to the development of both accuracy and fluency. That is to say, better-balanced writing. One student mentioned in the comment that she used written recasts as models and also added other expressions in the revision of original erroneous production. It can be assumed that written recasts provided the opportunity where students could repair their errors and mistakes, sometimes with additional words and expressions as the following example shows.

Example (13) Grammatical recast

S13: I enjoyed sing song. ← *You enjoyed singing songs.*

→(Student's revision) I enjoyed singing songs with children this summer.

It is assumed that this type of revision resulted in a higher accuracy and fluency score and a higher correlation between the two.

## CONCLUSION

This study implied that written feedback in the form of recasting is beneficial for learners to notice their errors or mistakes leading them to repair. The quality of the writing from the points of accuracy, fluency and complexity would improve in the second draft written with the help of feedback. The findings reported are suggestive, in that as recasts are not intrusive as explicit correction (e.g., Doughty, 2001; Lyster, 2007), we can utilize the beneficial effects of written recasts for Japanese learners who often have difficulty writing essays in English.

However, a number of limitations should be noted. The sample size was small with just 25 national university students. Ideally we should have more participants with different English proficiency levels so that we can make general productive claims. In providing written feedback, there was no systematic rule: Written recasts were provided randomly, mainly depending on the teacher's intuition so that students could use them to improve the overall quality of the writing in the second draft. Some grammatical features or structures are more teachable or treatable than others (Xu, 2009). Depending on which structures are targeted, the success rate of repair can be different. In addition, the number of recasts given to students was different. It can be argued that students tend to correct only the parts to which recasts are given. Finally, the lack of a control group, in which students are not given any feedback or given different types of feedback, is an important limitation. Further investigation with experiment design would make the findings more convincing. This study implied the effectiveness of written feedback in the form of recasts in text revision. However, to confirm the findings of the study, a further study with more samples in a controlled setting and with a control group is needed.

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