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**Language learning strategies used by lower secondary school learners  
in a Japanese EFL context<sup>1</sup>**

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## **Abstract**

This paper reports on a research project that was developed and used to examine the strategy use of Japanese lower secondary school learners of English. In the first part of the project, a questionnaire was constructed by (1) selecting categories of strategy based on open-ended data and (2) applying a factor analysis to data collected from 315 learners. The factor analysis uncovered the types of strategies used by the learners inside and outside their classrooms. In the second part of the project, variables affecting learners' strategy use were examined by employing a questionnaire developed for this purpose. The analyses indicated (1) that females reported more use of strategies than males, and (2) interestingly enough, that no positive relationship was found between English proficiency and strategy use. Interpretations of these findings and their implications are then discussed.

*Keywords:* language learning strategies, lower secondary school learners, Japanese EFL context, gender, proficiency

本論文では、日本人中学生の EFL 学習方略の使用状況と、彼らの方略使用に影響を与える変数に関する研究を報告する。研究 1 では、まず、自由記述のデータをもとに質問紙の項目を精選し、予備調査を実施して、方略使用調査のための質問紙を作成した。次に、中学生 315 名を対象にその質問紙を実施し、本調査をおこなった。その結果、中学生が教室内・外で使用している方略の種類と使用実態が明らかにされた。続く研究 2 では、方略使用と学習者変数（ここでは性別と英語力）との関係を調査した。多変量分散分析をおこなった結果、性別によって方略の使用状況が異なっており、男子よりも女子生徒の方が教室内で方略を頻繁に使用していることなどがわかった。方略使用と英語力の関係については、多変量分散分析に加えて相関分析もおこなった結果、両者の間には正の相関が確認されないことが判明した。これらの結果を、近年の方略研究の文脈の中で議論し、最後に、これからの方略研究や EFL 教育への示唆を提示している。

*Keywords:* 言語学習方略, 中学生, 日本の EFL 学習環境, 性別, 英語力

## Introduction

The advent of language learning strategy (LLS)<sup>2</sup> research can be traced back to the studies of successful language learners conducted by Rubin (1975) and Stern (1975). They investigated LLSs used by successful language learners, believing that if they knew these learners' LLSs, they might be able to teach them to less successful learners. Since that early research, many studies of LLSs have gathered data that is useful for the planning and implementation of strategy instruction (Grenfell and Macaro 2007; Gu 2005).

Several issues, however, remain untouched and open to debate. One issue is related to the lack of studies that examine strategy use in terms of learning contexts (Takeuchi 2003; Woodrow 2005). Some recent empirical studies have showed that second language (SL) learners and foreign language (FL) learners use strategies differently (Gao 2006; Riley and Harsch 1999; Yabukoshi and Takeuchi 2004). For example, Riley and Harsch's (1999) diary study indicated that ESL learners often took advantage of the availability of native English speakers in the ESL context, and employed social and communication strategies. On the other hand, their EFL counterparts employed more cognitive strategies (i.e. using images, saying and writing words repeatedly, and skimming texts). It is thus crucial for LLS researchers to take learning contexts into account when they investigate learners' use of strategy. In addition, it is important to consider the influence of learning settings (i.e. inside or outside of classrooms) on strategy use, as suggested by Yabukoshi and Takeuchi (2006), who found different patterns of skill-specific strategy use in relation to the two different learning settings.

A second issue relates to the lack of investigation of younger learners' strategy use compared with that of adult learners (Lan and Oxford 2003). Lan and Oxford, therefore, called for more studies with younger learners, especially in EFL contexts, and examined Taiwanese EFL elementary school learners' LLSs. Researchers in the Japanese EFL context have also turned their attention to LLSs used by younger learners, particularly those used by lower secondary school learners (e.g. Hirano 2000; Hojo 1998). For instance, Hojo found that social strategies were more favoured by lower secondary school students than upper secondary school or university students. It was also revealed that the methods employed by English teachers seemed to influence the use of strategies by lower secondary school learners (Hirano 2000; Yabukoshi and Takeuchi 2006). Although the number of studies of LLSs used by younger EFL learners has begun to increase, this number is still smaller than that of the studies of adult learners. Consequently, younger EFL learners' strategy use has not been fully clarified yet.

A third issue is the lack of valid and reliable questionnaires that investigate younger EFL learners' LLSs. A large number of LLS studies have utilized one standardized questionnaire called *The Strategy Inventory for Language Learning* (SILL: Oxford 1990), to statistically investigate the patterns of strategy use. Although SILL was designed to be applicable in both FL and SL settings, its validity for assessing learners' strategy use across different cultural groups has been questioned (e.g. LoCastro 1994; Takeuchi and Wakamoto 2001; Yamamori, Isoda, Hiromori, and Oxford 2003). Moreover, although SILL has often been employed with adult learners, its use with younger learners has not yet been validated. In the light of these limitations of SILL, Hirano (2000) and Hojo (1998) attempted to develop an original questionnaire to examine the LLSs used by lower secondary school

learners in the Japanese EFL context.<sup>3</sup> The two studies they conducted were, however, carried out with a relatively small number of participants,<sup>4</sup> and did not indicate how valid or reliable the instruments were in measuring the learners' strategy use. Consequently, no valid and reliable strategy questionnaire is available for Japanese EFL learners at the lower secondary school level; thus, we cannot objectively assess their strategy use.

A final issue is that LLS research has yet to agree on the impact of gender and L2 proficiency on learners' strategy use. As to the effect of gender difference, studies by Oxford and her associates showed that, in general, female learners employed overall strategies and social/communication strategies more frequently than did their male counterparts (Ehrman and Oxford 1989; Green and Oxford 1995; Oxford and Nyikos 1989). Some studies, on the other hand, found no significant difference between males and females in the use of LLSs (Griffiths 2003; Nisbet, Tindall, and Arroyo 2005). As for the impact of L2 proficiency, while some studies showed that there was a positive relationship between strategy use and L2 proficiency (e.g. Bruen 2001; Dreyer and Oxford 1996; Gan 2004; Green and Oxford 1995), other studies found neither a positive nor a strong relationship between these two variables (e.g. Nisbet et al. 2005; Politzer and McGroarty 1985; Yamamori et al. 2003). The role of gender and L2 proficiency in learners' strategy use has therefore yet to be ascertained,<sup>5</sup> and more studies should be carried out in order to clarify the impact of these two variables on learners' use of LLSs.

This section suggests that situational differences (i.e. SL/FL learning contexts as well as inside/outside classroom settings) should be taken into account in the investigation of LLSs, and that younger EFL learners' strategy use has not been fully explored owing to the lack of a valid and reliable strategy questionnaire. Furthermore, the impacts of gender and L2 proficiency on strategy use have yet to be clarified. Without such information, we cannot plan and implement a successful method of strategy instruction for younger EFL learners.<sup>6</sup> In order to resolve these issues, the present research, which focuses on lower secondary school students in the Japanese EFL context, aims (1) to develop a valid and reliable questionnaire and explore the types of strategies utilized by the students (Study 1), and (2) to examine whether the variables of gender and proficiency affect the students' strategy use (Study 2).

## **Study 1**

### **Selecting the questionnaire items**

The questionnaire consists of two parts: Part A, strategy use inside the classroom, and Part B, strategy use outside the classroom. In order to ensure the content validity of the questionnaire, items were selected based on (1) the open-ended data gathered from a group of students at a lower secondary school (Yabukoshi and Takeuchi 2006) and (2) the previous LLS studies conducted with Japanese lower secondary school students (Hirano 2000; Hojo 1998). In the study by Yabukoshi and Takeuchi (2006), various types of strategies were elicited from 347 Japanese lower secondary school students by means of an open-ended questionnaire, in which the students were asked to describe what they usually did to learn English in terms of language skills (i.e. speaking, writing, listening, reading, vocabulary learning, and grammar learning). The strategies that were most frequently

reported by these students were included in the questionnaire. By referring to Hirano (2000) and Hojo (1998), the authors also added several items to the questionnaire.

In order to ensure its reliability, the questionnaire was administered to 82 lower secondary school students and analysed. In the item analysis, descriptive statistics were calculated in order to determine whether there were items that showed the ceiling effect or the floor effect. The items showing these effects were then excluded, since they were deemed to be inappropriate for factor analysis (Oshio 2004). Correlations between individual items were also examined to reveal the items that showed high correlations. As a result, one highly correlated item was deleted from the questionnaire.

After the item analysis, 58 items pertaining to strategies that can be used inside the classroom and 66 items pertaining to those that can be used outside the classroom were included in the questionnaire, in order to examine the type and the frequency of strategy use in each setting (see Appendix A for the questionnaire). The frequency was measured using a five-point Likert scale ranging from 1 (never use) to 5 (always use). These questionnaire items were reviewed by two Japanese lower secondary school English teachers who had received training in TESOL at the postgraduate level. The teachers checked the comprehensibility of these items for lower secondary school students. In addition, a background survey was attached to the strategy questionnaire in order to gather demographic information about the participants, such as gender and overseas experiences.

## **Factor analysis**

### ***Participants***

A total of 315 students (45 per cent male and 55 per cent female) participated in the main study (Table 1). They were from one lower secondary school affiliated with a national university in the western part of Japan. The first author had been working there as an English instructor. The English curriculum at the school focused on improving learners' communicative ability as well as their linguistic ability. The participants had a 50-minute English lesson three times a week as a required course, and some of them were taking additional elective courses.<sup>7</sup> Their English proficiency level was relatively high compared to that of other lower secondary school students, according to the results obtained from the standardized test GTEC for Students, which will be explained in Study 2.

**Table 1.** The number of the participants according to their grade and gender

Grade	Male	Female	Total
8th	60	61	121
9th	83	111	194 <sup>a</sup>
Total	143	172	315

<sup>a</sup> 82 students who had participated in the pilot study (described above) were also included.

### ***Data collection and analysis***

The questionnaire was administered to the participants by their English teachers during a regular class period in May 2006. Written instructions on how to administer the questionnaire were provided to the teachers. The students were informed and assured by the teachers that: (1) there were no right or wrong answers to any questions; (2) their responses would not affect their grades; (3) their anonymity was assured; and (4) their response would be used for research purposes only. The questionnaire took approximately 30 minutes for the participants to complete.

Data obtained from the students who had spent more than one year abroad or who were using English at home were excluded from the data analysis because these students' strategy use may have been different from that of other EFL students (Wharton 2000). The questionnaires that were not answered properly (e.g. containing too many missing values) were also removed from the analysis. Accordingly, the number of participants was reduced to 281. SPSS 13.0 was used for data analysis.

An exploratory factor analysis was conducted to reveal the factors underlying the strategies that students used to answer the questionnaire. Before conducting the factor analysis, items that showed a ceiling or floor effect were removed from the analysis, as suggested by Oshio (2004). For the factor analysis, the maximum-likelihood method with promax rotation was used. In order to determine the number of factors, we used a scree plot in which eigenvalues greater than 1.0 and cumulative contribution ratios were utilized as signals of the threshold. Factor loadings greater than .40 were considered acceptable for simple structure.

In addition to the questionnaire, the first author carried out classroom observations in order to gain insight into the strategies used by the participants and to supplement the data obtained from the questionnaire.

## **Results**

### ***Strategy use inside the classroom***

Five factors were extracted for the lower secondary school learners' strategy use inside the classroom. The total percentage of variance accounted for by these five factors was 54.7 per cent. The factors were labelled according to the items that were included by the authors. The validity of the labelling was checked by a third researcher. Table 2 shows these factors, along with the mean, standard deviation, and Cronbach's alpha for each factor. The alpha coefficients in the table indicate satisfactorily high internal consistency for each sub-scale. The factor matrix is presented in Appendix B.

**Table 2.** Factors for strategy use inside the classroom

Factor		M	SD	Alpha
Factor I <sup>a</sup> -1	Strategies for speaking practice	2.81	0.71	.83
Factor I-2	Strategies for vocabulary and sentence memorization	2.79	0.99	.77
Factor I-3	Strategies for comprehension	3.55	0.85	.80
Factor I-4	Strategies for retention while reading aloud	2.97	0.99	.84
Factor I-5	Translation and simplification strategies	2.99	0.83	.71

<sup>a</sup> "I" stands for strategies used inside the classroom.

The items in Factor I-1 appear to be related to speaking strategies employed by learners to improve their speaking abilities. For instance, learners listen to their native English teacher's pronunciation carefully and try to imitate his or her pronunciation (Items I-19, I-21). They practise English with their native English teacher or with their classmates (I-24, I-25). Furthermore, while speaking, they pay attention to articulation as well as to grammatical accuracy, and try to use gestures in order to convey their message more precisely (I-28, I-22, I-26). In addition to such speaking practices, they attempt to use new words and grammatical rules to make English sentences (I-7, I-12). This factor, therefore, can be referred to as 'strategies for speaking practice'.

The items in Factor I-2 are related to rote memorization strategies used to learn new vocabulary and sentence structures. For example, learners write a new word and/or a new sentence repeatedly (Items I-1, I-11) or read aloud a new word while writing it (I-4). They also review new words by looking at a vocabulary list (I-10). In addition, they complete grammar exercises (i.e. pattern practices, cloze exercises) using grammar workbooks (I-15). These grammar exercises may help them learn and retain new words and target sentences. These five strategies can thus be termed 'strategies for vocabulary and sentence memorization'.

The items in Factor I-3 are associated with the strategies used to comprehend materials. For example, learners skim a text while reading, or try to understand main ideas while listening to English (Items I-37, I-48). They also guess the meaning of materials based on the words that they have understood (I-44, I-40). Moreover, to improve their listening comprehension, they try to concentrate on the activity of listening and to avoid distractions (I-46). This factor can be called 'strategies for comprehension'.

The items in Factor I-4 are broadly related to the strategies used for reading English texts aloud. Learners read English texts aloud in various ways, reciting them as a way to memorize and internalize sentence structure (Items I-38, I-43, I-41). They also highlight key words in the texts in order to retain them more effectively (I-39). This item is included in Factor I-4 because some students were observed using this strategy while reading English aloud. In addition, dictation was included in this factor (I-50). Although dictation seemed to be irrelevant to read-aloud activities, it was often conducted after the read-aloud activity in the Japanese EFL classrooms. Item I-50 was thus included in this factor. Accordingly, Factor I-4 is named 'strategies for retention while reading aloud'.

Finally, Factor I-5 includes four strategies related to the translation and simplification of the message, which are mainly employed to avoid communication breakdowns. For example, learners use L1 (i.e. Japanese) as a substitute for unknown English expressions while speaking, or they literally translate Japanese into English when they write English sentences (Items I-27, I-34). They also translate English into Japanese when reading English texts (I-36). Furthermore, they try to use simple words and sentence structures while writing an essay or a speech (I-31). Hence, Factor I-5 can be referred to as 'translation and simplification strategies'.

### *Strategy use outside the classroom*

Concerning strategy use outside of the classroom, five factors were once again extracted through factor analysis, with a highly acceptable internal consistency for each sub-scale (Table 3). The total percentage of variance accounted for by these five factors was 51.5 per cent. These five factors were labelled according to the items included by the authors. The validity of the labelling was checked by a third researcher. The factor matrix is presented in Appendix C.

**Table 3.** Factors for strategy use outside the classroom

Factors		M	SD	Alpha
Factor O <sup>a</sup> -1	Follow-up learning and metacognitive strategies	2.96	0.76	.88
Factor O-2	Strategies for speaking practice	2.56	0.93	.77
Factor O-3	Strategies for comprehension	3.69	0.84	.76
Factor O-4	Strategies for vocabulary and sentence memorization	3.30	1.12	.81
Factor O-5	Translation and simplification strategies	3.20	0.89	.72

<sup>a</sup> “O” stands for strategies used outside the classroom.

The items in Factor O-1 are related to follow-up learning and to the management of learning outside the classroom. Learners review lessons at home in order to complement classroom learning (Items O-58, O-59). They also preview lessons to keep up with English classes (O-57). When they review or preview lessons, they might read aloud from their English textbook or write new sentences repeatedly in order to memorize and internalize the sentence’s structure (O-44, O-46, O-13). They also attempt to learn sentence structure through pattern practice, translating Japanese into English, and dictating English sentences (O-35, O-15, O-53). Some learners attempt to use new words and grammatical rules to make English sentences (O-7, O-33, O-14). In addition to actually practising English, they use metacognitive strategies to regulate their learning outside the classroom (O-63, O-62, O-64). They also manage their learning by employing social strategies to solve their difficulties in learning English (O-65). Factor O-1 can be called ‘follow-up learning and metacognitive strategies’.

The items in Factor O-2 are broadly concerned with the speaking strategies used by learners to improve their speaking abilities and maintain conversations. For instance, the students practise English with their friends and/or with native speakers of English if they have the opportunity (Items O-27, O-28). They also pay attention to articulation and try to use gestures while speaking in order to convey their messages more clearly (O-31, O-29). These items are similar to those included in Factor I-1. This factor can therefore be referred to as ‘strategies for speaking practice’.

Four of the items included in Factor O-3 are identical to those included in Factor I-3; these are associated with the reading or listening strategies that are used to comprehend materials. Learners may skim a text while reading, or try to understand main ideas while listening to English (Items O-51, O-40). They also guess the meaning of materials based on the words that they have understood (O-43, O-47). This factor can be labelled ‘strategies for comprehension’.

Factor O-4 consists of three items related to rote memorization strategies used by students in order to learn new words and sentences; these items are similar to those found in Factor I-2. For

example, learners may read a new word and/or a new sentence aloud repeatedly (Items O-6, O-41). They may also read a new word aloud while writing it to improve their retention (O-4). Factor O-4 is therefore called 'strategies for vocabulary and sentence memorization'.

Finally, Factor O-5 consists of items concerning the translation and simplification of messages that are similar to those included in Factor I-5. For instance, learners use L1 for writing and reading English (Items O-37, O-39). They also try to use simple words and sentence structures while writing an essay or a speech (O-34). Furthermore, when memorizing new words, they start with easy words, such as those with few letters (Item O-9). Factor O-5 is thus termed 'translation and simplification strategies'.

## **Discussion**

In relation to the factors (i.e. types of strategies) uncovered in Study 1, three results are worth mentioning. First, strategies included in the following two factors often seem to be employed by learners in Asian EFL contexts: (a) strategies for vocabulary and sentence memorization (Factors I-2, O-4), which are similar to rote memorization, and (b) strategies for retention while reading aloud (I-4). The first type of strategy, rote memorization, seems to be important for Asian EFL learners to acquire a certain amount of vocabulary at the beginning of their English language learning process (Gan 2004; Politzer and McGroarty 1985). The second type of strategy, reading aloud, is found to be uniquely favoured in the Japanese EFL context (Takeuchi 2003), whereas this strategy has hardly been reported in ESL contexts (Yabukoshi 2007). The present study thus provides further support for the previous findings that rote memorization strategies and oral reading strategies are especially favoured by Asian EFL learners.

Second, the same types of factors were identified both inside and outside the classroom. Those factors were strategies for memorization (Factors I-2, O-4), strategies for comprehension (I-3, O-3), strategies for speaking practice (I-1, O-2), and translation and simplification strategies (I-5, O-5). This seems to indicate that outside of the classroom, students worked on language tasks similar to those introduced by teachers inside the classroom. In other words, lower secondary school learners seem to base their study of English outside the classroom on what they are instructed to do inside the classroom. The influences of teaching methods on lower secondary school learners' strategy use were also reported by other LLS studies conducted with Japanese lower secondary school students (Hirano 2000; Yabukoshi and Takeuchi 2006). For example, Hirano (2000) observed the frequent use of oral repetition strategies by lower secondary school students. The author explained that such frequent use was due to the teachers' focus on oral communication and read-aloud activities in the classroom. Another example was reported by Yabukoshi and Takeuchi (2006). They found that students reported more speaking strategies and grammar-learning strategies than other types of strategies because the teachers introduced more speaking and grammar-learning activities than other types of activities during their classes. It is thus claimed that specific teaching methods seem to have an impact on the use of LLSs by Japanese lower secondary school learners both inside and outside the classroom.

Finally, different types of factors were also identified inside and outside the classroom setting. This result indicates that some types of strategies tend to be employed in only one of the two settings. For instance, Factor I-4 (strategies for retention while reading aloud) was employed only for strategy use inside the classroom. This implies that learners were apt to employ these strategies only inside the classroom, rather than outside it. This tendency may again be linked to teaching methods, as discussed above, and reflects the fact that, since read-aloud activities have been popular in the Japanese EFL context, English teachers have often introduced these activities inside the classroom. Another instance was observed with Factor O-1 (follow-up learning and metacognitive strategies), which was employed only outside of the classroom. The use of follow-up learning strategies seems to be essential for learners at the lower secondary school level to better understand what they have learned in English class. It is also important for them to use metacognitive strategies outside the classroom, since the absence of a teacher prompts the students to self-direct their language learning outside class, and students have more opportunities to plan and reflect on how to learn English in a non-classroom setting than they do in a classroom setting. Accordingly, the authors claim that learning settings (i.e. inside or outside the classroom) may influence learners' strategy use, and the contextualization of this strategy use in terms of these two learning settings deserves greater attention in the field of LLS research.

## Study 2

Study 2 was conducted in order to explore the variables associated with the strategy use of Japanese EFL learners at the lower secondary school level by employing a questionnaire that was developed for this purpose. In particular, the links between LLSs and two other variables (gender and proficiency) were examined, since these links have not yet been ascertained.

### Participants and data collection

Of the 315 participants in Study 1, a total of 174 students who had taken GTEC (Global Test of English Communication) for Students, an English proficiency test, were selected as the participants for Study 2. GTEC for Students<sup>8</sup> is a standardized test that is often employed to measure learners' English proficiency in Japan. The criterion-related validity of the test was shown by the high correlations with other English proficiency tests (i.e. TOEIC, TOEFL, STEP). The internal consistency reliabilities of the test were .756 for the listening section and .827 for the reading section, as reported by the test developer. The participants were divided into three groups (high, medium, and low proficiency) according to their GTEC scores (Table 4).

**Table 4.** The number of the participants and their test scores according to gender and proficiency level

	Male	Female	Total	M (SD)
High	27	30	57	372.86 (29.11)
Medium	26	27	53	298.11 (15.99)
Low	34	30	64	240.69 (19.52)
Total	87	87	174	301.48 (59.49)

(F (2, 171)=532.21,  $p < .001$ ,  $\eta^2 = .75$ )

(Max. 440)

Their proficiency levels were confirmed to be significantly different ( $F(2, 171) = 532.21, p < .001, \eta^2 = .75$ ) by both ANOVA and a post-hoc test (Tukey' HSD). As for strategy use, data were collected through the questionnaire that was developed in Study 1.

### Data analyses

A multivariate analysis of variance (MANOVA) was conducted in order to ascertain whether or not there were significant differences between male and female students, and among the three different English proficiency groups in the use of the strategy factors that were extracted from Study 1. In addition, the interactions between gender and proficiency with regard to the use of strategy factors were investigated. The MANOVA was carried out using two variables (gender and proficiency) as independent variables and the strategy factors as dependent variables. When a significant value in the MANOVA was obtained, cross-comparisons were conducted by using Tukey's HSD procedure to identify where the differences were. In addition, if there were significant differences in strategy use among the three proficiency groups, a correlation analysis (Pearson product-moment correlation) was conducted in order to determine whether or not there were linear relationships between proficiency and strategy use. This was done in order to gain insight into the MANOVA results, as suggested by Bruen (2001).<sup>9</sup>

## Results

### *Strategy use inside the classroom*

The descriptive statistics are shown in Table 5, and the results of the MANOVA are shown in Table 6. According to Table 6, the analysis shows no significant interactions between gender and proficiency with regard to learners' strategy use inside the classroom. Instead, the analysis shows that gender interacted independently with strategy use, as did proficiency. For instance, there were significant differences between males' and females' strategy use in Factor I-4 (strategies for retention while reading aloud) and Factor I-5 (translation and simplification strategies). According to the post-hoc test, females employed strategies in Factor I-4 and Factor I-5 more frequently than did males inside the classrooms. Concerning proficiency levels, there were significant differences among the three proficiency groups in the use of Factors I-4 and I-5. According to the post-hoc test, the high proficiency group reported significantly less frequent use of those strategies than did the other two groups.

**Table 5.** Mean (M) and standard deviation (SD) of each factor inside the classroom

Factor	High				Medium				Low			
	Male		Female		Male		Female		Male		Female	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
F I-1 (Speaking practice)	2.61	0.83	2.75	0.86	3.03	0.57	2.88	0.65	2.72	0.62	3.09	0.69
F I-2 (Memorization)	2.64	1.04	2.66	1.18	3.23	0.62	2.66	0.93	3.15	0.92	3.08	1.16
F I-3 (Comprehension)	3.57	0.78	3.46	0.81	3.58	0.66	3.7	0.75	3.65	0.78	3.86	0.63
F I-4 (Reading aloud)	2.60	1.03	3.04	0.86	3.17	0.89	3.4	0.99	2.85	0.89	3.93	0.7
F I-5 (Translation and simplification)	2.68	0.87	2.76	0.58	3.13	0.75	3.49	0.66	3.00	0.74	3.54	0.63

**Table 6.** Results of MANOVA of each factor inside the classroom

Factor	Gender			Proficiency			Gender × Proficiency			Differences Detected <sup>b</sup>
	<i>df</i>	<i>F</i>	$\eta^2$ <sup>a</sup>	<i>df</i>	<i>F</i>	$\eta^2$ <sup>a</sup>	<i>df</i>	<i>F</i>	$\eta^2$ <sup>a</sup>	
F I-1 (Speaking practice)	1	.99	.007	2	2.01	.03	2	1.48	.02	
F I-2 (Memorization)	1	1.51	.01	2	2.67	.04	2	1.17	.02	
F I-3 (Comprehension)	1	.35	.003	2	1.29	.02	2	.56	.01	
F I-4 (Reading aloud)	1	14.97***	.089	2	5.69**	.07	2	2.82	.03	M < F, H < M, L
F I-5 (Translation and simplification)	1	7.54**	.045	2	10.50***	.13	2	1.37	.02	M < F, H < M, L

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

<sup>a</sup> The effect size (eta squared) was estimated.

<sup>b</sup> F=female students; M=male students; H=high proficiency group; M=medium proficiency group; L=low proficiency group.

The relationships between English proficiency and strategy use were further investigated via correlation analysis, in order to confirm the results that arose from the MANOVA. Table 7 shows the correlations between English proficiency and strategy use inside the classroom. According to these results, no positive correlations were found between proficiency and strategy use. In contrast, as shown in the table, negative correlations were found between proficiency and the use of Factors I-2 (memorization strategies) ( $r = -.22, p < .01$ ), I-4 (strategies for retention while reading aloud) ( $r = -.26, p < .01$ ), and I-5 (translation and simplification strategies) ( $r = -.26, p < .01$ ). These findings were similar to the MANOVA results; however, based on the associated scattergrams (Appendix D), a linear relationship was found only between proficiency and the use of Factor I-5 (translation and simplification strategies) see also Table 6 for the effect size. The authors thus claim that there was a negative relationship only between proficiency and the use of Factor I-5.

**Table 7.** Correlations between English proficiency and strategy use inside the classroom

	Proficiency	Factor I-1	Factor I-2	Factor I-3	Factor I-4	Factor I-5
English Proficiency	1.00					
F I-1 (Speaking practice)	-.11	1.00				
F I-2 (Memorization)	-.22**	.42**	1.00			
F I-3 (Comprehension)	-.09	.58**	.36**	1.00		
F I-4 (Reading aloud)	-.26**	.66**	.44**	.57**	1.00	
F I-5 (Translation & simplification)	-.26**	.36**	.30**	.47**	.46**	1.00

\*\*  $p < .01, n = 174$

### **Strategy use outside the classroom**

The descriptive statistics are shown in Table 8, and the results of the MANOVA are shown in Table 9. According to Table 9, the analysis shows no significant differences between male and female students, and no interactions between gender and proficiency with regard to learners' strategy

use outside of the classroom. Instead, the analysis indicates that there are relationships between proficiency and strategy use. Significant differences were found among the three proficiency groups in their use of Factors O-1 (follow-up and metacognitive strategies), O-2 (strategies for speaking practice), O-4 (memorization strategies), and O-5 (translation and simplification strategies). The post-hoc tests indicate that the high-proficiency group reported significantly less frequent use of: 1) Factors O-1, O-2, and O-4 than did the low-proficiency group; and 2) Factor O-5 than did the medium- and the low-proficiency groups.

**Table 8.** Mean (M) and standard deviation (SD) of each factor outside the classroom

Factor	High		Medium				Low					
	Male		Female		Male		Female					
	M	SD	M	SD	M	SD	M	SD				
F O-1 (Follow-up)	2.79	0.84	2.95	0.70	3.26	0.72	3.10	0.66	3.00	0.71	3.43	0.67
F O-2 (Speaking practice)	2.09	0.94	2.26	0.98	2.66	0.64	2.51	0.88	2.67	0.72	2.88	0.79
F O-3 (Comprehension)	3.45	0.79	3.78	0.81	3.82	0.82	3.78	0.67	3.78	0.51	3.84	0.67
F O-4 (Memorization)	2.84	1.31	3.29	1.3	3.53	1.02	3.37	1.08	3.49	0.93	4.29	0.93
F O-5 (Translation and simplification)	2.80	0.85	2.79	0.80	3.46	0.79	3.79	0.57	3.40	0.67	3.61	0.8

**Table 9.** Results of MANOVA of each factor outside the classroom

Factor	Gender			Proficiency			Gender × Proficiency			Differences Detected <sup>b</sup>
	df	F	$\eta^2$ <sup>a</sup>	df	F	$\eta^2$ <sup>a</sup>	df	F	$\eta^2$ <sup>a</sup>	
F O-1 (Follow-up)	1	1.43	.01	2	3.73*	.05	2	1.93	.03	H < L
F O-2 (Speaking practice)	1	.31	.003	2	6.73**	.09	2	.43	.01	H < L
F O-3 (Comprehension)	1	.86	.007	2	1.16	.02	2	.17	.01	
F O-4 (Memorization)	1	3.74	.024	2	6.85**	.09	2	.11	.03	H < L
F O-5 (Translation and simplification)	1	1.83	.01	2	16.82***	.20	2	1.45	.01	H < M,L

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

<sup>a</sup>The effect size (eta squared) was estimated.

<sup>b</sup>H=high proficiency group; M=medium proficiency group; L=low proficiency group.

The *MANOVA* results were further examined via correlation analysis of English proficiency and strategy use. According to the correlation matrix (Table 10), no positive correlations were found between proficiency and strategy use. In contrast, negative correlations were found to be significant between proficiency and the use of Factors O-1 (follow-up and metacognitive strategies) ( $r = -.23$ ,  $p < .01$ ), O-2 (strategies for speaking practice) ( $r = -.24$ ,  $p < .01$ ), O-4 (memorization strategies) ( $r = -.25$ ,  $p < .01$ ), and O-5 (translation and simplification strategies) ( $r = -.41$ ,  $p < .01$ ). These results were in accordance with the findings obtained by *MANOVA* as presented above, lending further support for the relationship between strategy use and proficiency; however, the coefficients of correlation for the three factors (O-1, O-2, and O-4) are rather low, and no linearity was confirmed between English proficiency and the use of these factors based on each scattergram (Appendix E). Linearity was found only between proficiency and the use of Factor O-5 (see also Table 9 for the

effect size). Accordingly, it is claimed that there was a negative relationship only between proficiency and the use of Factor O-5 (translation and simplification strategies).

**Table 10.** Correlations between English proficiency and strategy use outside the classroom

	Proficiency	Factor O-1	Factor O-2	Factor O-3	Factor O-4	Factor O-5
English Proficiency	1.00					
F O-1 (Follow-up)	-.23**	1.00				
F O-2 (Speaking practice)	-.24**	.54**	1.00			
F O-3 (Comprehension)	-.12	.41**	.29**	1.00		
F O-4 (Memorization)	-.25**	.50**	.49**	.21**	1.00	
F O-5 (Translation & simplification)	-.41**	.40**	.30**	.39**	.33**	1.00

\*\* $p < .01$ ,  $n = 174$

## Discussion

Regarding the links between strategy use and gender, females reported more frequent use of Factors I-4 (strategies for retention while reading aloud) and I-5 (translation and simplification strategies) than did males inside the classroom. The frequent use of such strategies by females was reported by Lan and Oxford (2003), who investigated elementary school learners' strategy use in the Taiwanese EFL context. They found that female students often used (a) auditory strategies, which include 'oral repetition', as in Factor I-4, and (b) compensation strategies, which include strategies used for avoiding communication breakdowns, as in Factor I-5. Furthermore, as claimed by many LLS studies of adult learners (e.g. Ehrman and Oxford 1989; Oxford and Nyikos 1989), gender differences seem to have an impact on the use of communication strategies, which are partially similar to the strategies included in Factor I-5. Accordingly, the findings in the present study lend support for the arguments made by previous LLS researchers about the influence of gender differences on auditory strategies and compensation/communication strategies.

As for the relationships between strategy use and proficiency, the Japanese lower secondary school learners' strategy use was not positively related to their English proficiency. These results agree with those of Naiman, Fröhlich, Stern, and Tedesco (1978), who suggested that strategy use and learning outcomes did not always match, since "there are many individual ways of learning a language successfully" (p. 224). The authors of this study think that the result obtained in the present study can be explained in terms of: (1) the measure of proficiency, (2) the strategies identified, and (3) other potential differences in strategy use between higher and lower proficiency learners. First, although this study employed a standardized test to measure students' English proficiency levels, their strategy use might have been associated with achievement levels. This assumption comes from the claim that strategy use is influenced by language learning goals (Macaro 2006). According to the English teachers at the school, the participants' reasons for learning English tend to be linked to gaining high marks (i.e. A) in the English class. Their course grade is evaluated by their English teachers on the basis of their classroom activities and the results of speaking tests, as well as term examinations. Given that gaining high scores on these achievement tests is their main reason for

learning English, it can be argued that their strategy use might have been closely connected with achievement, rather than with the English proficiency measured by the test used in this study.<sup>10</sup>

Second, even though the questionnaire has been constructed to include common strategies utilized by Japanese lower secondary school learners and its content validity was ensured as described in Study 1, the higher proficiency learners might have utilized some unique strategies that were not included in the questionnaire. Further investigation is thus needed to explore the strategies that were employed, especially by the learners with high proficiency.

Third, there might have been differences in strategy use between higher and lower-proficiency learners other than the frequency of LLS use. For instance, as has been argued by Anderson (2005) and Vandergrift (2003), successful learners, as compared with less successful learners, often combine metacognitive and cognitive strategies relevant to the language task. This tendency was actually confirmed by the authors in another study (Yabukoshi and Takeuchi, in preparation), which investigated patterns of strategy use by Japanese lower secondary school learners. According to that study, learners with higher proficiency tended to orchestrate cognitive and metacognitive strategies in a given task more appropriately than did their lower-proficiency counterparts. It might thus be necessary to examine LLSs in terms of orchestrated use if we attempt to clarify the relationship between strategy use and proficiency.

With regard to the negative correlation found between proficiency and the use of translation and simplification strategies (Factors I-5 and O-5), this may exist because less proficient learners tend to rely on L1 and to simplify spoken and/or written sentences due to their insufficient ability in L2. This tendency was also found by Nakatani (2006), who examined the relationship between oral communication strategies and oral performance in the Japanese EFL context.

## **Conclusion**

The studies described in this paper attempted to develop a valid and reliable questionnaire and to examine the types of LLSs used by Japanese lower secondary school learners of EFL. The learners' strategy use was investigated in terms of learning setting (i.e. inside or outside the classroom) in an attempt to contextualize their strategy use. By employing the original questionnaire, the studies also attempted to ascertain the links between LLSs and two other variables, gender and proficiency. The results must be viewed with some caution, however, due to the limitation concerning sampling: the two studies involved learners from only one lower secondary school, whose students are more proficient in English than those in other lower secondary schools in Japan. Such a biased sample might undermine the generalizability of the findings.

With this limitation in mind, the authors will discuss the pedagogical and research implications of the present research. Concerning the pedagogical implications, the results of the questionnaire is beneficial for raising the learners' awareness of their own approach to language learning and, ultimately, for enhancing their degree of autonomy in learning a language. It is also useful for teachers to obtain information about their students' strategy use so that they can better understand the way in which they teach English, since students' strategy use seemed to reflect their teachers' teaching methods, as was found in Study 1.

One research implication is that more attention should be paid to achievement rather than proficiency in order to clarify the relationship between effective language learning and strategy use. As was mentioned above, while Study 1 indicated that teaching methods and students' strategy use seemed to be closely connected, Study 2 did not ascertain a positive relationship between students' English proficiency and their frequency of strategy use. This does not necessarily mean that the teaching methods employed in the classrooms were not effective; rather, as was claimed by Macaro (2006), learners' strategy use is influenced by their language learning goals, and achievement is more closely related to these goals than proficiency. It is therefore claimed that achievement might have been linked to the learners' strategy use.

Another research implication is that a high frequency of strategy use does not always relate to high L2 proficiency. The authors assume that the orchestrated use of metacognitive and cognitive strategies in a given language task might be more closely associated with effective language learning than the frequency of strategy use, as is also claimed by Anderson (2005) and Vandergrift (2003). The orchestration of metacognitive and cognitive strategies, whose aspects have been largely neglected by most LLS studies except for a few qualitative studies (e.g. Gan, Humphreys, and Hamp-Lyons 2004; Vandergrift 2003), is thus worth examining. The authors believe that further investigation of learners' strategy use in relation to their achievement and to the orchestrated use of strategies will lead to a better understanding of effective language learning. With such knowledge, we can finally move to intervention studies in which we can plan and implement strategy instruction for lower secondary school learners in order to help them learn English more effectively.

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### **Notes**

1. This paper is a revised version of the paper presented by the authors at the 4th International Annual Conference of the Asia TEFL held at Fukuoka.
2. One of the earliest and most frequently cited definitions of LLSs is Oxford's (1990: 8). She defined LLSs as 'specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations'.
3. Cohen, Oxford, and Chi (2006) have also attempted to contextualize strategy instruments; they developed a questionnaire to assess LLS use in terms of language skills and specific learning situations, but it was not developed exclusively for younger EFL learners, who are the target population of this study.
4. Hojo (1998) and Hirano (2000) conducted factor analysis with 59 and 174 participants, respectively.

5. For a comprehensive review, see Takeuchi, Griffiths, and Coyle (2007).
6. The efficacy of strategy instruction has been empirically confirmed with adult learners by several LLS studies (e.g. Cohen, Weaver, and Li 1996; Ikeda and Takeuchi 2003).
7. There are two elective courses at the school: 'English conversation course' and 'STEP (Society for Testing English Proficiency) test preparation course'. STEP, Japan's leading testing body, has developed a standardized English proficiency test that measures learners' four English language skills (speaking, listening, reading, and writing). The test is scored on a pass or fail basis in seven bands. Approximately 2.4 million examinees took the test in 2007 (<http://www.eiken.or.jp/index.html>).
8. The test was developed by Benesse Corporation (<http://www.benesse.co.jp>). It was designed to assess both learners' communicative skills and grammatical competence in EFL. There are three types of GTEC: Core, Basic, and Advanced. In this study, the Core type, designed for lower secondary school students, was administered to the participants. The total score on the test (Core type) is 440 (made up of 170 points for reading, 170 for listening, and 100 for composition).
9. Bruen (2001) recommended using two procedures (e.g. the ANOVA and correlation analysis) to verify the relationship between strategy use and proficiency level.
10. The relationship between the students' strategy use and their achievement was not investigated in the present study because the data pertaining to the students' achievement (i.e. the scores of term examinations) were treated as confidential information at the lower secondary school, and were not therefore available for data analysis.

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## Appendix A. The strategy questionnaire (original in Japanese)

Grade \_\_\_\_\_ Class \_\_\_\_\_ Student No. \_\_\_\_\_ Male / Female \_\_\_\_\_ Name \_\_\_\_\_

The purpose of this questionnaire is to examine how you study English. There is no right or wrong answer to any questions. So, please answer the questions honestly. Note that your responses would not affect your grades, and your anonymity is secured.

### Part A (Strategy use inside the classroom)

How often do you use the following strategies when you learn English inside the classroom? Circle the one which is true of you.

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

1	I write a new word many times to learn it.	5	4	3	2	1
2	I make flashcards to learn new words.	5	4	3	2	1
3	I connect an image or a picture of the new word to help me to learn the word (e.g., if I want to learn the word "rain", I imagine the situation that it is raining).	5	4	3	2	1
4	I read aloud a new word while writing it.	5	4	3	2	1
5	I make vocabulary list in my notebook.	5	4	3	2	1
6	I read aloud a new word many times to learn it.	5	4	3	2	1
7	I try to use new words while speaking and writing English.	5	4	3	2	1
8	I use some knowledge of vocabulary (i.e., the suffix "er": play-player, sing-singer) to learn new words.	5	4	3	2	1
9	I start with easy words (i.e., those with few letters) when memorizing new words.	5	4	3	2	1
10	I review new words in vocabulary list.	5	4	3	2	1
11	I write a new sentence many times to learn it.	5	4	3	2	1
12	I make English sentences by using new grammar.	5	4	3	2	1
13	I practice to change an affirmative sentence into an interrogative or a negative sentence.	5	4	3	2	1
14	I summarize new grammatical rules in my notebook.	5	4	3	2	1

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

15	I do grammar exercises / workbooks.	5	4	3	2	1
16	I memorize new grammatical rules (e.g., present progressive form: the use of a form of to be, the infinitive of the verb, and the ending -ing).	5	4	3	2	1
17	I write down how to pronounce a new word in katakana phonetic scripts.	5	4	3	2	1
18	I listen to CD and imitate its pronunciation.	5	4	3	2	1
19	I listen to a native English teacher's pronunciation and imitate his/her pronunciation.	5	4	3	2	1
20	I check the phonetic symbols of a new word.	5	4	3	2	1
21	I pay attention to pronunciation and intonation while speaking English.	5	4	3	2	1
22	I pay attention to grammar while speaking English.	5	4	3	2	1
23	Before speaking tests, I think over what I am going to speak in English and memorize it.	5	4	3	2	1
24	I try to speak English with a native English teacher as much as possible.	5	4	3	2	1
25	I practice English conversation with friends.	5	4	3	2	1
26	I use gestures while speaking English.	5	4	3	2	1
27	I use Japanese as a substitute for unknown English expressions while speaking English.	5	4	3	2	1
28	I try to speak English with loud voice without hesitating.	5	4	3	2	1

(Continued . . .)

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

29	I try to relax to relieve tension before speaking English.	5	4	3	2	1
30	I write a new sentence by applying some elements of example sentences presented in the textbooks, references books, dictionaries, etc.	5	4	3	2	1
31	I write simple sentences without using difficult words and sentence structures.	5	4	3	2	1
32	I practice to translate Japanese into English sentences.	5	4	3	2	1
33	I write a new sentence by using example sentences presented in the textbooks, references books, dictionaries, etc.	5	4	3	2	1
34	I translate Japanese into English literally when writing English sentences.	5	4	3	2	1
35	I look up unknown words in the dictionaries (e.g., printed dictionaries, handheld electronic dictionaries, vocabulary list at the end of the textbook) when writing English sentences.	5	4	3	2	1
36	I translate English into Japanese literally when reading English texts.	5	4	3	2	1
37	I skim a text to understand the main ideas (rather than pay attention to the meaning of every word) while reading English texts.	5	4	3	2	1
38	I read aloud English sentences.	5	4	3	2	1
39	I highlight key words in the texts while reading English texts.	5	4	3	2	1
40	I guess the contents of the materials based on the words and the sentences that I understand while reading English texts.	5	4	3	2	1
41	I memorize English texts in the textbook and recite them.	5	4	3	2	1
42	I divide a sentence into meaningful chunks when reading English texts (e.g., I play tennis / with my friends / after school.)	5	4	3	2	1
43	I read aloud English texts in a various way (e.g., I first look at the sentences. I then look up my face and read aloud the sentences without looking at them/I repeat after the CD without looking at the texts.)	5	4	3	2	1
44	I guess the contents of the materials based on the words and sentences that I understand while listening to English.	5	4	3	2	1
45	I pay attention to the beginning word of the sentence (e.g., “ <b>Do</b> you . . .?” “ <b>Are</b> you . . .?” “ <b>What</b> is . . .?”) while listening to English.	5	4	3	2	1

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

46	I try to concentrate on listening to English and to avoid irrelevant distractions.	5	4	3	2	1
47	I take a memo while listening to English.	5	4	3	2	1
48	I try to understand the main ideas (rather than pay attention to the meaning of every word) while listening to English.	5	4	3	2	1
49	I translate English to Japanese while listening to English.	5	4	3	2	1
50	I dictate English that I have listened to.	5	4	3	2	1
51	I look at the visual aids and/or the title of the text first and predict its content before listening to it.	5	4	3	2	1
52	I listen to English songs (i.e., Western music) and sing them.	5	4	3	2	1
53	I use PC software and/or the Internet to learn English.	5	4	3	2	1
54	I plan how to learn English (e.g., I have decided to learn at least five new words a day).	5	4	3	2	1
55	I learn English with having some specific goals (e.g., I learn English to pass the third grade of the STEP test).	5	4	3	2	1
56	I think over my approach to learning English after I studied English.	5	4	3	2	1
57	I ask questions if I have something unknown.	5	4	3	2	1
58	I study English with my friends.	5	4	3	2	1

(Continued . . .)

Part B (Strategy use outside the classroom)

How often do you use the following strategies when you learn English outside the classroom (e.g., when you do homework and/or voluntarily learn English at home, when you learn English at a cram school and/or a private English conversation school, when you learn English with a private English tutor, etc.) ? Circle the one which is true of you.

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

1	I write a new word many times to learn it.	5	4	3	2	1
2	I make flashcards to learn new words.	5	4	3	2	1
3	I connect an image or a picture of the new word to help me to learn the word (e.g., if I want to learn the word "rain", I imagine the situation that it is raining).	5	4	3	2	1
4	I read aloud a new word while writing it.	5	4	3	2	1
5	I make vocabulary list in my notebook.	5	4	3	2	1
6	I read aloud a new word many times to learn it.	5	4	3	2	1
7	I try to use new words while speaking and writing English.	5	4	3	2	1
8	I use some knowledge of vocabulary (i.e., the suffix "er": play-player, sing-singer) to learn new words.	5	4	3	2	1
9	I start with easy words (i.e., those with few letters) when memorizing new words.	5	4	3	2	1
10	I review new words in vocabulary list.	5	4	3	2	1
11	I conduct a vocabulary quiz by myself to check if I have memorized the new words.	5	4	3	2	1
12	I use my spare time and review new words by looking at vocabulary cards and/or vocabulary lists.	5	4	3	2	1
13	I write a new sentence many times to learn it.	5	4	3	2	1
14	I make English sentences by using new grammar.	5	4	3	2	1
15	I practice to change an affirmative sentence into an interrogative or a negative sentence.	5	4	3	2	1
16	I summarize new grammatical rules in my notebook.	5	4	3	2	1

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

17	I do grammar exercises / workbooks.	5	4	3	2	1
18	I memorize new grammatical rules (e.g., present progressive form: the use of a form of to be, the infinitive of the verb, and the ending -ing).	5	4	3	2	1
19	I use reference books corresponding to the school English textbook when I study English.	5	4	3	2	1
20	I write down how to pronounce a new word in katakana phonetic scripts.	5	4	3	2	1
21	I listen to CD and imitate its pronunciation.	5	4	3	2	1
22	I listen to a native English speaker's pronunciation and imitate his/her pronunciation if I have the opportunity.	5	4	3	2	1
23	I check the phonetic symbols of a new word.	5	4	3	2	1
24	I pay attention to pronunciation and intonation while speaking English.	5	4	3	2	1
25	I pay attention to grammar while speaking English.	5	4	3	2	1
26	Before speaking tests, I think over what I am going to speak in English and memorize it.	5	4	3	2	1
27	I try to speak English with a native speaker of English as much as possible if I have the opportunity.	5	4	3	2	1
28	I practice English conversation with friends.	5	4	3	2	1
29	I use gestures while speaking English.	5	4	3	2	1
30	I use Japanese as a substitute for unknown English expressions while speaking English.	5	4	3	2	1
31	I try to speak English with loud voice without hesitating.	5	4	3	2	1
32	I try to relax to relieve tension before speaking English.	5	4	3	2	1

(Continued . . .)

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

33	I write a new sentence by applying some elements of example sentences presented in the textbooks, references books, dictionaries, etc.	5	4	3	2	1
34	I write simple sentences without using difficult words and sentence structures.	5	4	3	2	1
35	I practice to translate Japanese into English sentences.	5	4	3	2	1
36	I write a new sentence by using example sentences presented in the textbooks, references books, dictionaries, etc.	5	4	3	2	1
37	I translate Japanese into English literally when writing English sentences.	5	4	3	2	1
38	I look up unknown words in the dictionaries (e.g., printed dictionaries, handheld electronic dictionaries, vocabulary list at the end of the textbook) when writing English sentences.	5	4	3	2	1
39	I translate English into Japanese literally when reading English texts.	5	4	3	2	1
40	I skim a text to understand the main ideas (rather than pay attention to the meaning of every word) while reading English texts.	5	4	3	2	1
41	I read aloud English sentences.	5	4	3	2	1
42	I highlight key words in the texts while reading English texts.	5	4	3	2	1
43	I guess the contents of the materials based on the words and the sentences that I understand while reading English texts.	5	4	3	2	1
44	I memorize English texts in the textbook and recite them.	5	4	3	2	1
45	I divide a sentence into meaningful chunks when reading English texts (e.g., I play tennis / with my friends / after school.)	5	4	3	2	1
46	I read aloud English texts in a various way (e.g., I first look at the sentences. I then look up my face and read aloud the sentences without looking at them. / I repeat after the CD without looking at the texts.)	5	4	3	2	1

5. Always use	(80%-100%)
4. Often use	(60%-80%)
3. Usually use	(40%-60%)
2. Sometimes use	(20%-40%)
1. Never use	(0%-20%)

47	I guess the contents of the materials based on the words and sentences that I understand while listening to English.	5	4	3	2	1
48	I pay attention to the beginning word of the sentence (e.g., “ <b>Do</b> you . . . ?” “ <b>Are</b> you . . . ?” “ <b>What</b> is . . . ?”) while listening to English.	5	4	3	2	1
49	I try to concentrate on listening to English and to avoid irrelevant distractions.	5	4	3	2	1
50	I take a memo while listening to English.	5	4	3	2	1
51	I try to understand the main ideas (rather than pay attention to the meaning of every word) while listening to English.	5	4	3	2	1
52	I translate English to Japanese while listening to English.	5	4	3	2	1
53	I dictate English that I have listened to.	5	4	3	2	1
54	I look at the visual aids and/or the title of the text first and predict its content before listening to it.	5	4	3	2	1
55	I listen to English songs (i.e., Western music) and sing them.	5	4	3	2	1
56	I use PC software and/or the Internet to learn English.	5	4	3	2	1
57	I preview English lessons.	5	4	3	2	1
58	I review English lessons by looking at a notebook and/or a textbook.	5	4	3	2	1
59	I check out the words and the grammatical rules that I did not understand during the class.	5	4	3	2	1
60	I read English paperbacks and/or English newspapers.	5	4	3	2	1
61	I listen to radio English program, and/or watch English learning program and/or movies in English on TV to learn English.	5	4	3	2	1
62	I plan how to learn English (e.g., I have decided to learn at least five new words a day).	5	4	3	2	1
63	I learn English with having some specific goals (e.g., I learn English to pass the third grade of the STEP test).	5	4	3	2	1
64	I think over my approach to learning English after I studied English.	5	4	3	2	1
65	I ask questions if I have something unknown.	5	4	3	2	1
66	I study English with my friends.	5	4	3	2	1

Thank you very much for your cooperation.

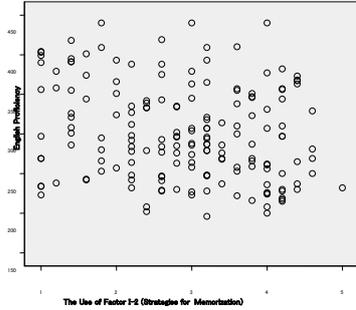
## Appendix B. Factor matrix for the 28 strategies used inside the classroom

	I-1	I-2	I-3	I-4	I-5	M	SD
<b>Factor I-1: Strategies for speaking practice (<math>\alpha=.83</math>)</b>							
I24 Trying to speak English with a native English teacher as much as possible	0.82	-0.02	-0.04	-0.01	-0.06	2.80	1.14
I19 Listening to a native English teacher's pronunciation and imitating his/her pronunciation	0.76	-0.13	-0.07	0.13	-0.09	3.03	1.34
I21 Paying attention to pronunciation and intonation while speaking	0.60	-0.06	0.19	0.10	-0.08	3.17	1.22
I28 Trying to speak English with loud voice without hesitating	0.54	0.02	-0.05	0.00	0.13	2.70	1.04
I7 Trying to use new words while speaking and writing	0.52	0.15	0.06	-0.02	-0.21	2.85	1.17
I22 Paying attention to grammar while speaking	0.52	-0.03	0.23	0.04	-0.09	3.19	1.16
I25 Practicing English conversation with friends	0.47	-0.04	-0.17	0.15	0.15	2.17	1.10
I26 Using gestures while speaking	0.46	-0.04	0.12	-0.33	0.36	2.56	1.20
I12 Making English sentences by using new grammar	0.45	0.10	-0.14	0.16	0.01	2.56	1.20
<b>Factor I-2: Strategies for vocabulary and sentence memorization (<math>\alpha=.77</math>)</b>							
I1 Writing a new word many times	-0.21	0.90	0.05	-0.05	-0.04	2.72	1.31
I11 Writing a new sentence many times	0.02	0.71	-0.02	0.07	-0.12	2.62	1.31
I4 Reading aloud a new word while writing it	0.16	0.63	-0.08	-0.05	0.18	2.80	1.40
I15 Doing grammar exercises / workbooks	0.17	0.49	0.07	-0.17	0.06	3.26	1.35
I10 Reviewing new words in a vocabulary list	-0.05	0.40	0.01	0.17	0.09	2.49	1.47
<b>Factor I-3: Strategies for comprehension (<math>\alpha=.80</math>)</b>							
I37 Skimming a text to understand the main ideas (rather than paying attention to the meaning of every word) while reading English texts	-0.07	0.03	0.80	-0.12	0.06	3.57	1.09
I48 Trying to understand the main ideas (rather than paying attention to the meaning of every word) while listening to English	0.03	0.11	0.69	-0.10	0.05	3.48	1.10
I44 Guessing the contents based on the words and the sentences that I understand while listening to English	-0.09	0.02	0.67	0.07	0.00	3.55	1.22
I40 Guessing the contents of the text based on the words and the sentences that I understand while reading English texts	-0.04	-0.24	0.56	0.29	0.12	3.62	1.16
I46 Trying to concentrate on listening to English and to avoid irrelevant distractions	0.14	0.10	0.46	0.07	-0.07	3.59	1.15
<b>Factor I-4: Strategies for retention while reading aloud (<math>\alpha=.84</math>)</b>							
I39 Highlighting key words in the English texts while reading	0.01	-0.16	-0.05	0.75	0.05	3.03	1.25
I41 Memorizing English texts in the textbook and reciting them	0.11	0.13	0.11	0.60	-0.12	3.04	1.37
I43 Reading aloud English texts in a various way	0.15	0.04	-0.03	0.60	0.11	2.71	1.26
I38 Reading aloud English sentences	0.19	0.07	0.05	0.52	0.12	3.21	1.28
I50 Dictating English that I have listened to	0.12	0.21	0.09	0.43	-0.04	2.85	1.23
<b>Factor I-5: Translation and simplification strategies (<math>\alpha=.71</math>)</b>							
I34 Translating Japanese into English literally when writing English sentences	-0.09	0.17	-0.08	0.16	0.61	2.80	1.14
I31 Writing simple sentences without using difficult words and sentence structures	-0.20	-0.09	0.10	0.03	0.59	3.40	1.05
I36 Translating English into Japanese literally when reading English texts	-0.10	0.04	0.06	0.23	0.53	3.08	1.19
I27 Using Japanese as a substitute for unknown English expressions while speaking English	0.25	-0.01	0.02	-0.11	0.50	2.71	1.19
Rotated Eigenvalue	8.07	2.13	2.00	1.61	1.49		
Total % variance	28.82	36.42	43.56	49.31	54.65		

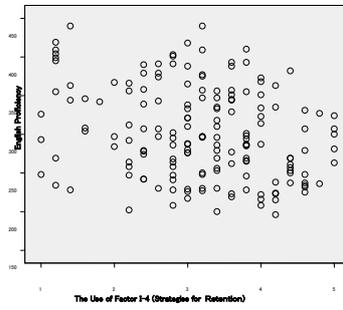
### Appendix C. Factor matrix for the 31 strategies used outside the classroom

	O-1	O-2	O-3	O-4	O-5	M	SD
<b>Factor O-1: Follow-up learning and metacognitive strategies (<math>\alpha=.88</math>)</b>							
O57 Previewing English lessons	0.78	-0.19	-0.17	0.08	0.01	3.09	1.36
O58 Reviewing English lessons by looking at a notebook and/or a textbook	0.68	-0.04	-0.16	-0.01	0.16	3.09	1.27
O59 Checking out the words and the grammatical rules which I did not understand during the class	0.66	-0.07	0.08	0.06	-0.07	3.19	1.22
O63 Learning English with having some specific goals	0.62	0.13	0.15	-0.12	-0.22	2.97	1.40
O15 Practicing to change an affirmative sentence into an interrogative or a negative sentence	0.54	0.00	0.07	-0.04	0.13	3.16	1.30
O33 Writing a new sentence by applying some elements of example sentence	0.52	0.06	0.04	-0.05	0.03	2.90	1.18
O44 Memorizing English texts in the textbook and reciting them	0.52	0.10	-0.01	0.07	-0.01	2.99	1.32
O62 Planning how to learn English	0.51	0.20	-0.04	-0.14	0.00	2.42	1.21
O35 Translating Japanese into English	0.50	-0.21	0.39	0.04	-0.02	3.61	1.18
O53 Dictating English that I have listened to	0.49	0.19	0.02	-0.07	-0.03	2.86	1.21
O65 Asking questions if I have something unknown	0.47	-0.12	0.09	0.06	0.06	3.36	1.28
O46 Reading aloud English texts in a various way	0.46	0.32	-0.15	0.01	0.01	2.65	1.20
O64 Thinking over my approach to learning English after I studied English	0.46	0.25	-0.06	-0.11	0.09	2.50	1.21
O14 Making example sentences by using new grammar	0.44	0.03	0.17	0.03	0.04	2.92	1.20
O13 Writing a new sentence many times	0.44	-0.03	0.09	0.16	-0.04	2.98	1.36
O7 Using new words as many as possible when speaking and writing English	0.43	0.07	0.08	0.09	0.05	2.92	1.13
<b>Factor O-2: Strategies for speaking practice (<math>\alpha=.77</math>)</b>							
O28 Practicing English conversation with friends	0.15	0.71	-0.16	-0.05	0.06	2.24	1.12
O29 Using gestures while speaking English	-0.21	0.70	0.23	0.01	0.08	2.58	1.25
O27 Trying to speak English with a native speaker of English as much as possible if I have the opportunity	0.09	0.64	-0.02	0.14	-0.10	2.76	1.19
O31 Trying to speak English with loud voice without hesitating	0.07	0.50	0.09	0.12	-0.08	2.79	1.18
<b>Factor O-3: Strategies for comprehension (<math>\alpha=.76</math>)</b>							
O43 Guessing the contents of the text based on the words and the sentences that I understand while reading English texts	-0.02	0.04	0.69	-0.05	0.03	3.76	1.07
O51 Trying to understand the main ideas (rather than paying attention to the meaning of every word) while listening to English	-0.06	0.15	0.68	0.00	0.00	3.57	1.14
O47 Guessing the contexts based on the words and the sentences that I understand while listening to English	0.12	-0.05	0.60	-0.04	-0.03	3.79	1.11
O40 Skimming a text to understand the main idea (rather than paying attention to the meaning of every word) while reading English texts	0.01	-0.01	0.55	0.06	0.07	3.66	1.06
<b>Factor O-4: Strategies for vocabulary and sentence memorization (<math>\alpha=.81</math>)</b>							
O6 Reading aloud a new word many times	-0.14	0.14	-0.03	0.89	0.00	3.24	1.31
O4 Reading aloud a new word while writing it	0.07	-0.02	-0.01	0.76	0.02	3.39	1.38
O41 Reading aloud sentences	0.19	0.02	0.01	0.59	0.00	3.26	1.28
<b>Factor O-5: Translation and simplification strategies (<math>\alpha=.72</math>)</b>							
O37 Translating Japanese into English literally when writing English sentences	0.01	0.08	-0.02	0.05	0.75	2.95	1.18
O39 Translating English into Japanese literally when reading English text	0.09	0.00	0.01	0.04	0.60	3.15	1.19
O34 Writing simple sentences without using difficult words and sentence structure	-0.09	-0.04	0.25	-0.08	0.56	3.35	1.16
O9 Starting with easy words (i.e., those with few letters) when memorizing new words	0.08	-0.06	-0.07	-0.01	0.53	3.38	1.33
Rotated Eigenvalue	8.80	2.24	1.88	1.59	1.45		
Total % variance	28.39	35.62	41.69	46.83	51.51		

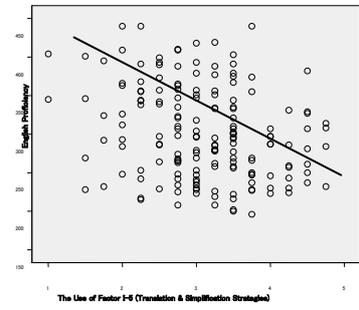
**Appendix D. Correlations between English proficiency and strategy use inside the classroom:  
Figures 1-3**



**Figure 1.** Correlation between English proficiency and the use of Factor I-2.



**Figure 2.** Correlation between English proficiency and the use of Factor I-4.

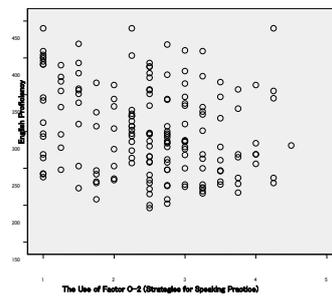


**Figure 3.** Correlation between English proficiency and the use of Factor I-5.

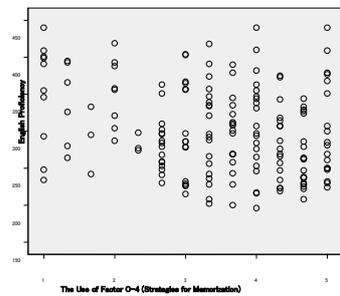
**Appendix E. Correlations between English proficiency and strategy use outside the classroom:  
Figures 4-7**



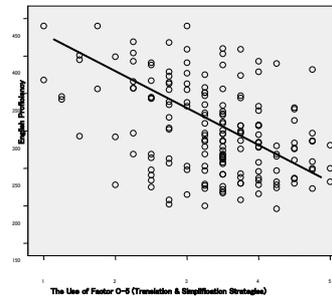
**Figure 4.** Correlation between English proficiency and the use of Factor O-1.



**Figure 5.** Correlation between English proficiency and the use of Factor O-2.



**Figure 6.** Correlation between English proficiency and the use of Factor O-4.



**Figure 7.** Correlation between English proficiency and the use of Factor O-5.