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## Appendix 1. Criteria for target treatment sentences

- Noun standardization:
  - 1 × sentence per set with a countable noun necessitating use of the indefinite article (e.g., *a mask*)
  - 1 × sentence per set with an uncountable noun (e.g., *coffee*)
  - Each of the remaining sentences per set containing a countable noun in its plural form (e.g., *sandwiches*)
- Target nouns between sets evenly embedded in central and posterior positions of each sentence
- At least 2 × negatory clauses per set
- Equal number of present and past tense sentences per session
- Wordcount of 12–15 words per sentence
- Word frequency within CEFR A1/A2; JACET3000 banding

## Appendix 2. Acceptability judgement task sample (Pattern C)

### Criteria:

- 7–9 words per sentence (contractions treated as a single word)
- 6 × pluralization errors (3 × central position; 3 × posterior position)
- 6 × distractor errors (3 × prepositions; 2 × verbs; 1 × adjective)
- 8 × non-errors (at least 2 × consecutive)
- At least 2 × negatory sentences
- At least 1 × interrogative sentence
- Word frequency within CEFR A1/A2; JACET3000 banding

### Legend:

<b>Bold font</b>	<i>Loanword plural-omission error</i>
<u>Underlining</u>	<i>Distractor error</i>
<u>Grey shading</u>	<i>Non-error</i>

### Shopping

- (1) Shopping is a big part of modern life.
- (2) It's especially popular if we live to the city.
- (3) Most big shopping **mall** don't close until late.
- (4) We can buy almost anything we like.
- (5) Personally, I don't liked shopping very much.
- (6) I only buy something if I really need it.
- (7) A good example is **curtain** for my apartment.
- (8) Many of my friends like window shopping.
- (9) They especially like looking at designer **bag**.
- (10) Of course, everything is usually too expensively.
- (11) Sometimes they really want to buying something.
- (12) However, they should wait until they have enough money.
- (13) Also, they shouldn't use any of their **credit card**.
- (14) Online shopping is a convenient way with buy things.
- (15) Everyone knows **website** like Amazon and Rakuten.
- (16) Many people buy clothes on the Internet.
- (17) However, I think it's difficult to check the sizes.
- (18) Maybe it's OK to buy things like **accessory**.
- (19) It's better to touch things before buying them.
- (20) What kind with things do you usually buy online?

**Appendix 3. Picture description task sample** (*Pattern B with prompts translated*)

まずは、この写真をよく見てください。

[First, look at these pictures carefully.]



次に、この状況について英文を書いてください。以下の内容を必ず描写してください。

[Next, write a short paragraph in English about this situation. Make sure to include the following:]

- どんなお店なのか、どんなものを売っているのか(できる限り多くの商品を挙げてください)。  
[What kind of shop this is and what it generally sells (write as many items as possible).]
- この二人は誰なのか、彼女たちはどんな商品が好きそうなのか、そしてなぜ今日このお店に来たのか。  
[Who these two people are, what kind of items they probably like, and why they came to the shop today.]
- 彼女たちは今何をしているのか、この後何が起こるのか。  
[What they are doing now and what will happen next.]

10 分以内にできるだけ多く書いてください。単語を並べるのではなく、完全な文章を書きましょう。

[Write as much as possible within 10 minutes. Write full sentences, not single words or lists.]

## Appendix 4. Retroactive interviews: Overview and protocol

### 1. Overview

Conducted bilingually (English/Japanese) and translated and transcribed by the author, four online semi-structured interviews were held with volunteer participants ( $n = 5$ ) from the three experimental conditions following the study's pre-test and immediate post-test intervals (Table 1), with each interview lasting approximately ten minutes. The protocol at both intervals is outlined below (see Appendix 7 for details of the findings).

**Table 1.** Summary of details for the focus group interviews.

Participant (Gender)	Condition	Interview no. (Interval)
P1 (Female)	1	#1 (Pre) & #3 (Post 1)
P2 (Male), P3 (Male),	2	#2 (Pre)
P4 (Male), P5 (Female)	3	#4 (Post 1)

Note. Pre = following the pre-test; Post 1 = following the immediate post-test

### 2. Protocol

#### 2.1 Following the pre-test

##### Stage 1: To enquire about reactions to the pre-test

- *How did you find the first quiz?* [pre-test]
- *Which elements of the quiz were difficult in terms of grammar?*
- *Were there any types of errors in the quiz that seemed more frequent than others?*
- *Did you understand the overall meaning of the content for each section of the quiz?* [reading, writing]
- *How did you find the time limit for each section of the quiz?* [10 minutes for both reading and writing]

##### Stage 2: To enquire about personal experiences of plural-marking acquisition

- *What kind of grammatical features do you think are important to focus on for Japanese learners?*
- *Have you ever focused on plural forms before?*
- *Japanese learners tend to omit plurals. Would you say you have a similar tendency?*
- *In Japanese, the concept of countability isn't really expressed using grammatical features. Do you think that might influence the way you approach English?*
- *What do you think would be the best way to go about addressing that problem?*
- *What would be the best way to notice plural forms?*

#### 2.2 Following the immediate post-test

##### Stage 1: To enquire about the perceived effectiveness of the awareness-raising instruction

- *How was your overall experience of the grammar training?*
- *Which aspects did you find especially helpful?*
- *Did you feel there was a difference in your performance between the two quizzes?* [pre vs. post 1]
- [Condition 3 only] *Was it helpful to apply English rules to Japanese?* [adding the Japanese plural suffix *-tachi* (達), such as バナナ達—*banana-tachi*]
- *What is your opinion on the number of sessions* [six in total] *and them all being online?*
- *Do you think that the effects of the training will last long term?*

##### Stage 2: To enquire about the cognitive processes underlying plural marking through stimulated recall and brief source of knowledge probes

- *Ryan never used to score \_\_\_\_\_, but now he's a great soccer player.*  
[Response options: (a) a goal (b) goal (c) goals; Answer: (c)]
- *Buildings need to be strong, so these days they're mostly made of \_\_\_\_\_.*  
[Response options: (a) a concrete (b) concrete (c) concretes; Answer: (b)]
- *One of the best \_\_\_\_\_ at playing Mozart is the London Symphony.*  
[Response options: (a) an orchestra (b) orchestra (c) orchestras; Answer: (c)]
- *What is the basis of your answer? Is it just a guess? A feeling? Or is it based on a rule you might know?*

## Appendix 5. Additional post hoc statistics

### 1. Error recognition of plural omissions

**Table 1.** Between-group comparisons

Condition pairing	Time					
	Pre		Post		Delayed	
	<i>U</i>	<i>z</i>	<i>U</i>	<i>z</i>	<i>U</i>	<i>z</i>
1–2	470.500	-1.258	352.500	-2.687	527.00	-0.445
1–3	473.500	-0.341	237.500	-3.629	433.00	-0.876
1–4	441.500	-0.828	374.500	-1.821	252.00	-3.608
2–3	455.500	-0.804	389.500	-1.654	480.500	-0.405
2–4	480.500	-0.434	189.500	-4.488	259.000	-3.572
3–4	425.500	-0.402	124.000	-4.996	221.500	-3.548

**Table 2.** Within-group comparisons

Condition	Time					
	Pre-Post		Pre-Delayed		Post-Delayed	
	<i>V</i>	<i>z</i>	<i>V</i>	<i>z</i>	<i>V</i>	<i>z</i>
Condition 1 ( <i>n</i> = 33)	24	2.501	53.3	3.165	129	1.452
Condition 2 ( <i>n</i> = 34)	43	3.788	63.5	2.865	178.5	1.694
Condition 3 ( <i>n</i> = 30)	0	4.228	21	3.437	217.5	2.966
Condition 4 ( <i>n</i> = 30)	93	0.807	87.5	1.048	41	0.323

### 2. Written production of plural forms

**Table 3.** Between-group comparisons

Condition pairing	Time					
	Pre		Post		Delayed	
	<i>U</i>	<i>z</i>	<i>U</i>	<i>z</i>	<i>U</i>	<i>z</i>
1–2	530.500	-0.400	396.000	-2.277	521.500	-0.552
1–3	443.000	-0.750	350.000	-2.198	459.500	-0.540
1–4	488.000	-0.102	404.500	-1.292	337.500	-2.344
2–3	471.500	-0.535	503.000	-0.115	505.500	-0.066
2–4	504.500	-0.077	269.000	-3.470	373.500	-1.962
3–4	412.000	-0.588	236.500	-3.371	327.000	-1.933

**Table 4.** Within-group comparisons

Condition	Time					
	Pre-Post		Pre-Delayed		Post-Delayed	
	<i>V</i>	<i>z</i>	<i>V</i>	<i>z</i>	<i>V</i>	<i>z</i>
Condition 1 ( <i>n</i> = 33)	72.5	1.999	29.5	3.019	68	1.089
Condition 2 ( <i>n</i> = 34)	59.5	3.437	71	2.468	158	1.989
Condition 3 ( <i>n</i> = 30)	28.5	3.190	72	1.775	111.5	1.662
Condition 4 ( <i>n</i> = 30)	106	0.331	75	0.071	134.5	0.261

**Appendix 6. Raw denominators of instances of produced and possible plural forms****Table 1.** Descriptive statistics for mean number of instances of appropriately produced plural forms

Condition	Time	<i>M</i>	<i>SD</i>	95% CI
Condition 1 (PlurNC–L2) ( <i>n</i> = 33)	Pre	1.39	1.77	[.79, 1.99]
	Post	2.45	2.27	[1.68, 3.23]
	Delayed	2.61	2.01	[1.92, 3.29]
Condition 2 (PlurC–L2) ( <i>n</i> = 34)	Pre	1.74	2.03	[1.05, 2.42]
	Post	3.79	2.37	[3.00, 4.59]
	Delayed	3.15	3.06	[2.12, 4.17]
Condition 3 (PlurC–L1/L2) ( <i>n</i> = 30)	Pre	1.80	2.04	[1.07, 2.53]
	Post	3.90	2.68	[2.94, 4.86]
	Delayed	3.40	2.98	[2.33, 4.47]
Condition 4 (PrepNC–L2) ( <i>n</i> = 30)	Pre	1.73	2.10	[.98, 2.49]
	Post	2.03	2.30	[1.21, 2.87]
	Delayed	1.50	2.01	[.78, 2.22]

**Table 2.** Descriptive statistics for mean number of instances of possible plural forms

Condition	Time	<i>M</i>	<i>SD</i>	95% CI
Condition 1 (PlurNC–L2) ( <i>n</i> = 33)	Pre	4.24	2.36	[3.44, 5.05]
	Post	4.91	2.80	[3.95, 5.86]
	Delayed	4.09	1.74	[3.50, 4.68]
Condition 2 (PlurC–L2) ( <i>n</i> = 34)	Pre	4.50	2.27	[3.74, 5.26]
	Post	4.85	2.35	[4.06, 5.64]
	Delayed	4.82	2.34	[4.04, 5.61]
Condition 3 (PlurC–L1/L2) ( <i>n</i> = 30)	Pre	4.17	2.96	[3.12, 5.23]
	Post	5.17	2.55	[4.26, 6.08]
	Delayed	5.43	3.51	[4.18, 6.69]
Condition 4 (PrepNC–L2) ( <i>n</i> = 30)	Pre	3.97	1.50	[3.43, 4.50]
	Post	4.90	2.73	[3.92, 5.88]
	Delayed	4.47	2.90	[3.43, 5.50]

**Table 3.** Summary for mean number of possible plurals produced per session across Time and Condition

Time	Condition	Label	<i>n</i>	<i>M</i>	Rounded
Pre	1	PlurNC–L2	33	4.24	4
	2	PlurC–L2	34	4.50	5
	3	PlurC–L1/L2	30	4.17	4
	4	PrepNC–L2	30	3.97	4
Post	1	PlurNC–L2	33	4.91	5
	2	PlurC–L2	34	4.85	5
	3	PlurC–L1/L2	30	5.17	5
	4	PrepNC–L2	30	4.90	5
Delayed	1	PlurNC–L2	33	4.09	4
	2	PlurC–L2	34	4.82	5
	3	PlurC–L1/L2	30	5.43	5
	4	PrepNC–L2	30	4.47	4
				<i>M</i> = 4.63	<i>M</i> = 5

## Appendix 7. Retroactive interviews: Core transcript extracts, themes, and codes

### Legend:

UPPER CASE	Theme
Lower case	Code
(Digit)	Code frequency

### 1. Pre-treatment

#### Stage 1: Reactions to the pre-test

**Summary of findings:** Overall, participants expressed difficulty with the pre-test (both reception and production) and were unaware of plurals being the target feature.

- P1: <sup>1a</sup> I found [the writing section] to be quite hard because <sup>1b</sup> I'm not sure how to express the meaning in English. <sup>1a</sup> For example, trying to explain which kinds of items the shop sold. [. . .] [For the reading section] <sup>2a</sup> maybe verbs seemed to be the most frequent error. [. . .] [In terms of the time limit of ten minutes] <sup>3a</sup> I thought it was just about right. <sup>1c</sup> Perhaps it was slightly short for the writing section.
- P2: <sup>1a</sup> The right words didn't seem to come to mind, so it was hard to write. <sup>1b</sup> I didn't feel as though I had the vocabulary. [. . .] <sup>2a</sup> I could understand the errors to do with verbs, but other than that, <sup>1d</sup> it was quite hard to spot them. [. . .] I could understand the content, but <sup>2b</sup> I couldn't really tell whether the sentences were grammatically correct or not.
- P3: <sup>1c</sup> I just tried to write freely without thinking too much about accuracy. [. . .] <sup>1d</sup> I found the reading section [*error recognition task*] much more difficult because it required me to think more about the grammar. <sup>2b</sup> I couldn't really tell which parts contained errors.
- <sup>1</sup> PERCEIVING CHALLENGES  
<sup>1a</sup> Pre-test writing (3)  
<sup>1b</sup> Lack of confidence/ability (2)  
<sup>1c</sup> Time limit (1)  
<sup>1d</sup> Pre-test error recognition (2)  
<sup>1e</sup> Accuracy as a constraint (1)
- <sup>2</sup> NOTING LACK OF AWARENESS  
<sup>2a</sup> Plural marking as target (2)  
<sup>2b</sup> Error awareness (2)

#### Stage 2: Personal experiences of plural-marking acquisition

**Summary of findings:** Participants appeared to demonstrate an awareness of how plural forms may be a problematic grammatical target, but were unable to offer any possible solutions.

- P1: <sup>1a</sup> At school, we never really focused on practical things [like plural marking]. <sup>1a</sup> Studying grammar was more like an academic subject. [. . .] <sup>1b</sup> I'm sure [the fact that countability isn't generally expressed in Japanese] influences my English.
- P2: <sup>2a</sup> I haven't really thought about [how to address the issue of plural marking], so I wouldn't know the best way to go about improving it.
- P3: <sup>1c</sup> Whenever I'm writing, I don't feel confident as to whether I'm using the right [noun] form, even if I try to pay attention to it. <sup>1c</sup> I think I make those kinds of errors a lot. [. . .] <sup>1b</sup> Native English speakers probably have a feel for [plural forms], but I think for Japanese learners, it's pretty difficult for us to notice them. <sup>2b</sup> I don't really know what would be the best way to notice them.
- <sup>1</sup> DEVELOPING GRAMMAR AWARENESS  
<sup>1a</sup> Formal grammar learning (2)  
<sup>1b</sup> L1 influence (2)  
<sup>1c</sup> Plural-marking accuracy (2)
- <sup>2</sup> LACKING POTENTIAL SOLUTIONS  
<sup>2a</sup> Improving plural marking (1)  
<sup>2b</sup> Improving noticing skills (1)

### 2. Post-treatment

#### Stage 1: Perceived effectiveness of the instruction

**Summary of findings:** Overall, participants appeared to respond favourably to the treatment and its format, including the explicit use of L1 in L2 learning for participants in the contrastive conditions. An improvement in performance was noted between the pre-test and the immediate post-test, largely attributable to increased cross-linguistic awareness of plural marking and the associated concept of countability.



- P1: <sup>1a</sup> I thought [the training] was good. <sup>2a</sup> In most of my previous English classes, there was no focus on the concept of countability and its associated forms. <sup>2b</sup> I thought it's necessary to know about those things in order to make grammatically correct sentences, <sup>2a</sup> particularly since I have a tendency to omit plurals. [. . .] <sup>3a</sup> For the second quiz [immediate post-test], I felt I was better able to pay attention to plural forms and that, <sup>3b</sup> in particular, my writing became more accurate. [. . .] <sup>1a</sup> I think [six sessions] was just right. Four sessions, for example, might not have been enough. [. . .] <sup>1b</sup> I thought it wasn't a problem at all doing the project online. [. . .] It would be best to keep on doing it for a while, but <sup>2c</sup> I think my current level of increased awareness would probably stay as it is. <sup>2d</sup> The reason is probably down to me liking English.
- P4: <sup>2c</sup> I learned a lot about the difference between the Japanese and English usage of plurals. <sup>2c</sup> In Japanese, plurals aren't important, but in English, I can now see that they're quite important. [. . .] [Regarding the practice activities] <sup>1a</sup> I found filling in the blanks to be especially helpful because that way, <sup>2a</sup> it's easier to see and understand how the plural form works. [. . .] <sup>3c</sup> Overall, [between the pre-test and immediate post-test] I felt an improvement. <sup>2a</sup> For example, I became more aware in the writing section of whether or not I was using the plural form correctly. [. . .] <sup>1c</sup> I found it helpful to take a loanword like *banana* and then make it plural using [the Japanese plural suffix] *-tachi* [達; as in *バナナ達* –*banana-tachi*]. [. . .] [In light of the pandemic] I wasn't used to studying online, and it's hard for things like groupwork. <sup>1b</sup> On the other hand, in terms of the grammar training being online, I think it was fine.
- P5: <sup>2f</sup> It was difficult for me to grasp whether something should be singular or plural, as I often got them mixed up. <sup>2a</sup> However, [since the training] I've become much more attentive to using plurals when I write. [. . .] <sup>1b</sup> I liked how it was online. [. . .] <sup>1d</sup> I would like to say thank you for this opportunity.
- <sup>1</sup> SHOWING POSITIVE ORIENTATIONS  
<sup>1a</sup> Treatment content (3)  
<sup>1b</sup> Treatment format (3)  
<sup>1c</sup> L2 rule-application to L1 (1)  
<sup>1d</sup> Appreciation (1)
- <sup>2</sup> INCREASING AWARENESS  
<sup>2a</sup> Plural marking/countability (5)  
<sup>2b</sup> Grammatical accuracy (1)  
<sup>2c</sup> Projected continuity (1)  
<sup>2d</sup> Motivation (1)  
<sup>2e</sup> L1–L2 differences (2)  
<sup>2f</sup> Pre-treatment difficulty (1)
- <sup>3</sup> PERFORMING IN THE TEST  
<sup>3a</sup> Noticing plural forms (1)  
<sup>3b</sup> Producing plural forms (1)  
<sup>3c</sup> Perceived improvement (1)

## Stage 2: Stimulated recall with source of knowledge probes

**Summary of findings:** Overall, participants were mostly able to select appropriate responses and provide justification through rule explanation.

- *Ryan never used to score \_\_\_\_\_, but now he's a great soccer player.*  
 [Response options: (a) a goal (b) goal (c) goals]
- P1: <sup>1a</sup> I think the correct answer is *goals*. <sup>1b</sup> I am not sure why, but <sup>2a</sup> I think he had multiple chances to score, which would make it plural.
- P5: <sup>1b</sup> Actually, it's kind of hard to decide between the second and the third option. <sup>2c</sup> I don't really know.
- *Buildings need to be strong, so these days they're mostly made of \_\_\_\_\_.*  
 [Response options: (a) a concrete (b) concrete (c) concretes]
- P1: <sup>1a</sup> The answer is *concrete*. <sup>2a</sup> The reason is that it's a liquid, which would make it uncountable.
- P4: <sup>2a</sup> Well, I don't think it's possible to pluralize *concrete* because it can't be counted one by one.
- P5: <sup>2a</sup> I think the answer should be *concrete* because it's a substance, making it uncountable.
- *One of the best \_\_\_\_\_ at playing Mozart is the London Symphony.*  
 [Response options: (a) an orchestra (b) orchestra (c) orchestras]
- P4: <sup>1a</sup> I think the answer is *orchestras* because <sup>2b</sup> it has *one of* before it.
- <sup>1</sup> RESPONDING  
<sup>1a</sup> Appropriate response (3)  
<sup>1b</sup> Some hesitancy/uncertainty (2)
- <sup>2</sup> REASONING  
<sup>2a</sup> Rule explanation via countability (4)  
<sup>2b</sup> Rule explanation via lexical features (1)  
<sup>2c</sup> Unable to determine rule (1)

## Appendix 8. Exit questionnaire results

### Section 1: Plural forms

#### (設問 1 複数形について)

- (1) Before starting the grammar training, how important did you feel the target grammatical features\* were?  
[\*concept of countability and plural forms for Conditions 1–3 and prepositions for Condition 4]

(文法練習を始める前に、対象となる文法点\*をどれくらい重要だと感じていましたか。【\*実験条件1～3では可算性の概念と複数形、実験条件4では前置詞】)

	Condition 1	Condition 2	Condition 3	Condition 4
Very important とても重要	28.2% (24)	38.3% (36)	30.1% (25)	27.3% (27)
Important 重要	38.8% (33)	42.6% (40)	39.8% (33)	36.4% (36)
Somewhat important やや重要	30.6% (26)	18.0% (17)	28.9% (24)	34.3% (34)
Not important 重要でない	2.4% (2)	1.1% (1)	1.2% (1)	2.0% (2)
Total	(85)	(94)	(83)	(99)

- (2) Before starting the grammar training, how often did you generally forget to use plural forms?

[Conditions 1–3 only]

(文法練習を始める前に、一般的に複数形を忘れてしまうことがどのくらいありましたか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Very often 非常によく忘れていた	25.9% (22)	27.7% (26)	30.1% (25)	–	27.9% (24)
Often よく忘れていた	38.8% (33)	38.3% (36)	39.8% (33)	–	39.0% (34)
Sometimes 時々忘れていた	34.1% (29)	31.9% (30)	28.9% (24)	–	31.6% (28)
Rarely 滅多に忘れてなかった	1.2% (1)	2.1% (2)	1.2% (1)	–	1.5% (1)
Total	(85)	(94)	(83)	–	(87)

- (3) Before starting the grammar training, in which types of sentences did you tend to forget to use plural forms?

[Conditions 1–3 only]

(文法練習を始める前は、どのような文章で複数形を忘れがちでしたか。)

	No problem 問題なし			Tend to forget 忘れがち		
	Condition					
	1	2	3	1	2	3
Quantifiers 数量詞(例 SOME bananaS)	51.8% (44)	44.7% (42)	47.0% (39)	48.2% (41)	55.3% (52)	53.0% (44)
Negatory sentences 否定文(例 I doN'T eat bananaS)	54.1% (46)	57.4% (54)	67.5% (56)	45.9% (39)	42.6% (40)	32.5% (27)
Interrogative sentences 疑問文(例 Does the shop sell bananaS?)	54.1% (46)	63.8% (60)	66.3% (55)	45.9% (39)	36.2% (34)	33.7% (28)
Generalized statements 一般化(例 BananaS are healthy)	38.8% (33)	37.2% (35)	54.2% (45)	61.2% (52)	62.8% (59)	45.8% (38)
Loanwords 借用語(bananaS, mannerS 等)	20.0% (17)	31.9% (30)	14.5% (12)	80.0% (68)	68.1% (64)	85.5% (71)

- (4) Before starting the grammar training, in which types of sentences did you tend to make errors with prepositions? [*Condition 4 only*]

(文法練習を始める前は、どのような文章で前置詞を使って間違えがちでしたか。)

	No problem 問題なし	Freq. errors 間違えがち
As part of a verb 動詞の一部 (例 participate IN)	32.3% (32)	67.7% (67)
As part of a noun phrase 名詞句の一部 (例 IN love)	13.1% (13)	86.9% (86)
As part of an idiomatic expression 決まった慣用句の一部 (例 a matter OF time)	26.3% (26)	73.7% (73)
When no preposition is required 前置詞が不要 (例 discuss (-) something)	21.2% (21)	78.8% (78)
When there is a difference between Japanese and English 日本語と英語で概念が違う場合 (例日: 電車の中、英: ON the train)	17.2% (17)	82.8% (82)

- (5) Do you think it is generally harder to remember to use plural endings for English-based loanwords (e.g., slippers: スリッパ [*surippa*]) than for non-loanwords (e.g., shoes: 靴 [*kutsu*])? [*Conditions 1–3 only*]

(普段、在来語を使うときよりも借用語を使うときのほうが、複数形にて表すルールを忘れることが多いですか。【例「靴を履きましょう」という文章は靴を複数形にするが「スリッパを履きましょう」という文章はつついスリッパに複数形を忘れる。】)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Yes はい	68.2% (58)	69.1% (65)	80.7% (67)	–	72.7% (63)
No difference 違いはない	21.2% (18)	24.5% (23)	19.3% (16)	–	21.7% (19)
No いいえ	10.6% (9)	6.4% (6)	0.0% (0)	–	5.7% (5)
Total	(85)	(94)	(83)	–	(87)

## Section 2: Grammar training

(設問 2 文法練習について)

- (6) Did you enjoy the grammar training?

(文法練習を楽しみましたか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Yes はい	82.4% (70)	86.2% (81)	81.9% (68)	60.6% (60)	77.8% (70)
No いいえ	17.6% (15)	13.8% (13)	18.1% (15)	39.4% (39)	22.2% (21)
Total	(85)	(94)	(83)	(99)	(91)

(7) After the grammar training, do you feel that any changes have occurred? [Conditions 1-3 only]  
(文法練習を終えて、何か変化はありましたか。)

	Improved 改善された			No change 変化なし			Worsened 悪化した		
	Condition								
	1	2	3	1	2	3	1	2	3
Distinguishing between countable/uncountable 可算名詞と不可算名詞の使い分け	77.6% (66)	86.2% (81)	94.0% (78)	21.2% (18)	12.8% (12)	6.0% (5)	1.2% (1)	1.1% (1)	0.0% (0)
Noticing plural form patterns when reading 読むときに複数形のパターンに気付く	81.2% (69)	83.0% (78)	53.0% (44)	18.8% (16)	17.0% (16)	47.0% (39)	0.0% (0)	0.0% (0)	0.0% (0)
Noticing plural form patterns when listening 聞くときに複数形のパターンに気付く	49.4% (42)	57.4% (54)	53.0% (44)	49.4% (42)	42.6% (40)	47.0% (39)	1.2% (1)	0.0% (0)	0.0% (0)
Producing plural forms when writing 文章を書くときに複数形を正確に使う	76.5% (65)	90.4% (85)	88.0% (73)	23.5% (20)	8.5% (8)	12.0% (10)	0.0% (0)	1.1% (1)	0.0% (0)
Producing plural forms when speaking 話すときに複数形を正確に使う	41.2% (35)	53.2% (50)	56.6% (47)	56.5% (48)	46.8% (44)	43.4% (36)	2.4% (2)	0.0% (0)	0.0% (0)
Overall confidence of how plurals are used 複数形の使い方に対する総合的な自信	49.4% (42)	62.8% (59)	67.5% (56)	47.1% (40)	36.2% (34)	31.3% (26)	3.5% (3)	1.1% (1)	1.2% (1)
General accurate usage of the indefinite article 一般的に冠詞「a」を正確に使う	58.8% (50)	71.3% (67)	77.1% (64)	40.0% (34)	28.7% (27)	22.9% (19)	1.2% (1)	0.0% (0)	0.0% (0)

(8) After the grammar training, do you feel that any changes have occurred? [Condition 4 only]  
(文法練習を終えて、何か変化はありましたか。)

	Improved 改善された	No change 変化なし	Worsened 悪化した
Distinguishing between diff. types of prepositional usage 前置詞の使い分け	38.4% (38)	57.6% (57)	4.0% (4)
Noticing prepositional patterns when reading 読むときに前置詞のパターンに気付く	42.4% (42)	54.6% (54)	3.0% (3)
Noticing prepositional patterns when listening 聞くときに前置詞のパターンに気付く	22.2% (22)	75.8% (75)	2.0% (2)
Producing prepositions accurately when writing 文章を書くときに前置詞を正確に使う	32.3% (32)	36.7% (63)	4.0% (4)
Producing prepositions accurately when speaking 話すときに前置詞を正確に使う	14.1% (14)	85.9% (82)	3.0% (3)
Overall noticing of how prepositions are used 前置詞の使い方について全体的に気付く	36.4% (36)	60.6% (60)	3.0% (3)

(9) If you experienced any positive changes after the grammar training, how long do you think the effects will last?

(文法練習の後に何か良い変化を感じるとすれば、その効果はどのくらい続くと思いますか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
A few days 数日	37.6% (32)	29.8% (28)	25.6% (21)	33.7% (33)	31.7% (28)
A few weeks 数週間	44.7% (48)	34.0% (32)	39.0% (32)	29.6% (29)	36.8% (34)
A few months 数ヶ月	7.1% (6)	10.6% (10)	9.8% (8)	8.2% (8)	8.9% (8)
Continuously 継続的に	10.6% (9)	25.6% (24)	25.6% (21)	28.5% (28)	22.6% (20)
Total	(85)	(94)	(82)	(99)	(90)

(10) How useful was each component of the training activities? [*Conditions 2 & 3 only*]

(文法練習の各部門がどれだけ役に立ちましたか。)

	Useful 役に立った		Not sure どちらとも いえない		Not useful 役に立た なかった	
			Condition			
	2	3	2	3	2	3
Using gap-fills for <i>a ~ / ~ / -s</i> (e.g., <i>a banana / banana / bananas</i> ) 選択式回答による使い分けを理解	90.3% (84)	88.0% (73)	9.7% (9)	12.0% (10)	0.0% (0)	0.0% (0)
Explanations of the similarities & differences between Japanese & English 日本語と英語の類似点と違いの解説	86.1% (81)	74.7% (62)	11.8% (11)	25.3% (21)	2.1% (2)	0.0% (0)
Emphasizing the influence of loanwords 借用語の影響力を強調	79.7% (75)	75.9% (63)	18.2% (17)	24.1% (20)	2.1% (2)	0.0% (0)
Distinguishing between countable & uncountable nouns 可算名詞と不可算名詞の区別	88.2% (83)	83.1% (69)	11.8% (11)	16.9% (14)	0.0% (0)	0.0% (0)
Applying English rules to Japanese <sup>†</sup> (e.g., バナナ達— <i>banana-tachi</i> ) 英語の文法規則を日本語に当てはめ	—	69.9% (58)	—	28.9% (24)	—	1.2% (1)
Translating Japanese to English 日本語を英語に翻訳	82.9% (78)	85.5% (71)	17.1% (16)	14.5% (12)	0.0% (0)	0.0% (0)
Overall 全体	91.4% (86)	79.5% (66)	8.6% (8)	20.5% (17)	0.0% (0)	0.0% (0)

Note. <sup>†</sup>Omitted from Condition 2 since it was not part of the treatment

- (11) Explain which aspects of the training were particularly helpful for you and why. [*Open-ended question*]  
(文法練習のどの部分が特に役に立ちましたか。その理由も添えてください。)

**Sample responses** (translated by the author from Japanese to English)

**Legend:**

<i>UPPER CASE</i>	<i>Theme</i>
<i>Lower case</i>	<i>Code</i>
<i>(Digit)</i>	<i>Code frequency</i>

**Condition 1**

- <sup>1a</sup> I think I simply have a better knowledge of countability than I did before.
- <sup>2a</sup> I felt it was good to have the opportunity to learn about a range of topics that I don't normally pay much attention to, and which I feel are commonplace for [native] English speakers.
- <sup>1b</sup> I could grasp the content of the sentences quickly and accurately due to the time limit.
- <sup>2b</sup> I could see the answers immediately, so I was prevented from remembering wrong sentences.
- <sup>1c</sup> I could see where I was going wrong because I was previously using plural forms with uncountable nouns.

- <sup>1</sup> IMPROVING USE OF PLURALS
  - <sup>1a</sup> Countability & conceptual bases (4)
  - <sup>1b</sup> Causality & noticing (2)
  - <sup>1c</sup> Error awareness & noticing (5)
- <sup>2</sup> SHOWING POSITIVE ORIENTATIONS
  - <sup>2a</sup> L1–L2 differences (5)
  - <sup>2b</sup> Corrective feedback (1)
  - <sup>2c</sup> Practice (2)
  - <sup>2d</sup> Explicit information (3)
  - <sup>2e</sup> L1–L2 translation (2)
  - <sup>2f</sup> L2 rule-application to L1 (1)

**Condition 2**

- <sup>1c</sup> I was able to notice points that I wasn't previously aware of.
- <sup>1a</sup> I could understand the conceptual differences [of countability] between Japanese and English.
- <sup>2c</sup> The multiple-choice exercises were good practice in and of themselves, <sup>1b</sup> but with the addition of the gap-fills, I felt that I was able to more clearly realise where I was going wrong.
- <sup>2d</sup> The grammar explanations were good, so <sup>1c</sup> I was able to deepen my understanding of the questions I got wrong.
- <sup>2e</sup> I thought the part where we actually had to make sentences [L1–L2 translation] was good because even though I think I know what I'm doing, <sup>1c</sup> I tend to forget plural forms when I'm writing.

- <sup>3</sup> IMPROVING USE OF PREPOSITIONS
  - <sup>3a</sup> Awareness of prior errors (1)
  - <sup>3b</sup> Formulaic sequence/chunking (3)
  - <sup>3c</sup> Awareness through translation (1)

**Condition 3**

- <sup>2e</sup> Translating Japanese into English was helpful.
- <sup>1a</sup> In the past, the use of countable and uncountable nouns was unclear to me, but now I have a better understanding of them.
- <sup>2d</sup> It was useful that detailed explanations were given after each response. <sup>1c</sup> It meant I could immediately rectify my errors. <sup>2f</sup> Also, the approach of using –tachi [L2 rule application to L1] was very helpful because it enabled me to make connections with Japanese
- <sup>1a</sup> Learning the distinction between countable and uncountable nouns was helpful <sup>2a</sup> because there is no such distinction in Japanese between these [categories of] words.
- <sup>2d</sup> The explanations of the similarities and differences between Japanese and English was particularly helpful. <sup>2a</sup> After all, [. . .] such differences in thinking and awareness seem to be extremely pronounced when dealing with different languages. <sup>2a</sup> By focusing on these similarities and differences, a fundamental understanding of the [target] language becomes possible, and <sup>2c</sup> I believe that the more such training is done, the more accurate the [target] language becomes. <sup>2a</sup> I also believe that it's very important to gain a conceptual understanding of each word, and that it's essential in learning another language to first understand the differences between these concepts and then to establish them specifically within the context of the other language.

**Condition 4**

- <sup>3a</sup> Before [the training], I had been learning English without paying much attention to prepositions.
- <sup>3b</sup> It made me realize that it's important to remember prepositions in combination with verbs.
- <sup>3c</sup> When two or more prepositions can be used [for the same item], it was easy to see how the translation changes depending on the preposition as well as to understand the detailed differences in meaning of prepositional use.
- <sup>3b</sup> It was good because it gave me an opportunity to look at combinations of words and prepositions that I didn't know before.
- <sup>3b</sup> I was able to learn various patterns of prepositions, which helped me to apply them.

(12) Explain which aspects of the training were *not* helpful for you and why. [*Open-ended question*]  
(文法練習のどの部分が役に立たなかったですか。その理由も添えてください。)

**Sample responses** (translated by the author from Japanese to English)

**Legend:**

<i>UPPER CASE</i>	<i>Theme</i>
<i>Lower case</i>	<i>Code</i>
<i>(Digit)</i>	<i>Code frequency</i>

**Condition 1**

- <sup>1a</sup> The questions where we had to select the meaning of each word were not necessary because I already understood most of the vocabulary.
- <sup>1b</sup> I wanted more explanation.
- <sup>1b</sup> There were not enough new words.

<sup>1</sup> RECOGNIZING CHALLENGES

- <sup>1a</sup> Perceived redundancy (5)
- <sup>1b</sup> Perceived insufficiency (3)
- <sup>1c</sup> Spelling (2)
- <sup>1d</sup> Incongruity & unfamiliarity (1)
- <sup>1e</sup> Unknowable long-term impact (1)

**Condition 2**

- <sup>1c</sup> Some of the words were difficult to spell.
- <sup>1a</sup> I already knew the [target] words because they were loanwords.
- <sup>1a</sup> I felt I didn't need to confirm whether I understood the explanation after each section.

<sup>2</sup> MAKING CONCESSIONS

- <sup>2a</sup> Toleration of novel L1 use (1)

**Condition 3**

- <sup>1a</sup> I felt that I didn't need an explanation about how all the words were loanwords.
- <sup>1c</sup> I found the gap-fills difficult because, for it to be correct, I had to get the spelling exactly right.
- <sup>1d</sup> It's true that -tachi can be used in Japanese after nouns that describe people, indicating their meaning as plural. However, since this is not generally used for nouns other than those associated with people, it seemed strange to use it [in other contexts]. <sup>2a</sup> Nevertheless, the attempts to reference the English [plural usage] through clear Japanese examples [L2 rule application to L1] were very much appreciated.

**Condition 4**

- <sup>1a</sup> I felt it would be more efficient if everything were multiple-choice.
- <sup>1b</sup> I wanted to review [each session] so that I could consolidate what I needed to remember.
- <sup>1c</sup> It's too soon to know whether it has been helpful.

- (13) How was the amount of six training sessions?  
(6 回分の文法練習の量はいかがでしたか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Too many 多すぎる	12.9% (11)	30.9% (29)	32.5% (27)	17.2% (17)	23.4% (21)
Just right ちょうど良い	84.7% (72)	67.0% (63)	66.3% (55)	73.7% (73)	72.9% (66)
Too few 少なすぎる	2.4% (2)	2.1% (2)	1.2% (1)	9.1% (9)	3.7% (3)
Total	(85)	(94)	(83)	(99)	(90)

- (14) After the grammar training, how important do you feel the target grammatical features\* are now?

[\* *plural forms* for Conditions 1–3 and *prepositions* for Condition 4]

(文法練習を終えて、今、対象となる文法点\*はどれくらい重要だと感じていますか。【\*実験条件 1~3 では可算性の概念と複数形、実験条件 4 では前置詞】)

	Condition 1	Condition 2	Condition 3	Condition 4
Very important とても重要	50.6% (43)	51.1% (48)	45.8% (38)	60.6% (60)
Important 重要	43.5% (37)	42.6% (40)	50.6% (42)	31.3% (31)
Somewhat important やや重要	5.9% (5)	4.2% (4)	3.6% (3)	7.1% (7)
Not important 重要でない	0.0% (0)	2.1% (2)	0.0% (0)	1.0% (1)
Total	(85)	(94)	(83)	(99)

### Section 3: Linguistic awareness

#### (設問 3 言語的意識について)

- (15) Compared to English, there is less of a distinct concept of countability in Japanese. Do you think this affects your English accuracy of plural forms? [*Conditions 1–3 only*]  
(英語と比較すると、日本語では可算性の概念があまりありません。このことは英語で複数形の正確さを表す時に影響すると思いますか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Yes はい	84.7% (72)	81.9% (77)	86.8% (72)	–	84.5% (74)
Not sure どちらともいえない	10.6% (9)	12.8% (12)	12.0% (10)	–	11.8% (10)
No いいえ	4.7% (4)	5.3% (5)	1.2% (1)	–	3.7% (3)
Total	(85)	(94)	(83)	–	(87)



(16) Is it useful to compare and contrast English and Japanese? [*Conditions 2 & 3 only*]  
(英語と日本語を比較対照することは役に立ちますか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Yes はい	–	76.6% (72)	75.9% (63)	–	76.3% (68)
Not sure どちらともいえない	–	20.2% (19)	21.7% (18)	–	21.0% (19)
No いいえ	–	3.2% (3)	2.4% (2)	–	2.8% (2)
Total	–	(94)	(83)	–	(89)

(17) After the grammar training, do you feel that you are now more aware of plural forms when you use English? [*Conditions 1–3 only*]  
(文法練習を終えて、英語を使うときに複数形を意識するようになったと感じていますか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Yes はい	82.4% (70)	92.6% (87)	80.7% (67)	–	85.2% (75)
Not sure どちらともいえない	17.6% (15)	7.4% (7)	18.1% (15)	–	14.4% (12)
No いいえ	0.0% (0)	0.0% (0)	1.2% (1)	–	0.4% (0)
Total	(85)	(94)	(83)	–	(87)

#### Section 4: Online learning

##### (設問 4 オンライン学習について)

(18) On which kind of device did you mostly complete the grammar training? *Select all that apply.*  
(どの通信機器を使って文法練習を回答しましたか。該当するものをすべて選択してください。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Smartphone	53	56	46	62	54
Tablet	6	4	2	5	4
Laptop	48	52	42	47	47
Desktop	2	3	8	8	5

(19) Do you believe it is possible to improve your English skills through online learning?  
(オンライン学習で英語力を向上させられると思いますか。)

	Condition 1	Condition 2	Condition 3	Condition 4	Overall
Yes はい	89.4% (76)	88.3% (83)	89.2% (74)	78.8% (78)	86.4% (78)
No いいえ	10.6% (9)	11.7% (11)	10.8% (9)	21.2% (21)	13.6% (12)
Total	(85)	(94)	(83)	(99)	(90)

**Section 5: General comments****(設問 5 ご意見・ご感想)**

(20) Please share any other comments you may have. [*Open-ended question*]  
(その他、文法練習に関するご意見・ご感想のご記入をお願いします。)

**Sample responses** (translated by the author from Japanese to English)

**Legend:**

<i>UPPER CASE</i>	<i>Theme</i>
<i>Lower case</i>	<i>Code</i>
<i>(Digit)</i>	<i>Code frequency</i>

**Condition 1**

- <sup>1a</sup> It was a good learning experience as I had never exclusively focused on plurals before.
- <sup>1b</sup> To be made more aware of plurals was good for my learning.
- <sup>1c</sup> I would like to do [the training] again.

<sup>1</sup> MAKING POSITIVE REFLECTIONS

- <sup>1a</sup> Receptivity (4)
- <sup>1b</sup> Target form awareness (5)
- <sup>1c</sup> Future aspirations (4)
- <sup>1d</sup> Enjoyment (3)
- <sup>1e</sup> Perceived speed of responses (1)
- <sup>1f</sup> Conceptual awareness (2)
- <sup>1g</sup> Appreciation (1)

**Condition 2**

- <sup>1d</sup> It was fun to know that there are many loanwords in Japanese that have the same meaning in both English and Japanese.
- <sup>1e</sup> I was able to answer the questions quickly and <sup>1d</sup> enjoy learning.
- <sup>1a</sup> It was very good practice for me because I don't generally have the opportunity to practise countable and uncountable nouns in a concentrated way. <sup>1c</sup> I hope I can be more aware of them in the future.

<sup>2</sup> PERCEIVING CHALLENGES

- <sup>2a</sup> Conceptual awareness (1)
- <sup>2b</sup> Lack of mastery (1)
- <sup>2c</sup> Prepositions (2)

**Condition 3**

- <sup>1a</sup> [Through the training] I was able to engage with grammar in a way that I hadn't done previously and <sup>1b</sup> understand my weak points.
- <sup>1b</sup> I think I'm definitely more discerning now [about plurals] than I was before [the training].
- <sup>2a</sup> I often forget the concept of plurality in English, which I find difficult, especially in writing. <sup>1f</sup> However, through this [training], I learnt about the conceptual differences between English and Japanese, and <sup>1b</sup> I think I became a little more careful about the distinction between singular, plural, and uncountable forms. <sup>1f</sup> It was also very easy to understand the English concepts that aren't found in Japanese, as they were taught in detail. <sup>2b</sup> However, there are still many English words for which this distinction is still unclear, and I recognized that I need further training to fully master them. <sup>1c</sup> In the future, I will try to reflect on what I have learnt here as much as possible. <sup>1g</sup> Thank you very much.

**Condition 4**

- <sup>1b</sup> [The training] allowed me to check the importance of prepositions, so <sup>1d</sup> it was surprisingly enjoyable.
- <sup>2c</sup> Prepositions are not familiar to Japanese [learners], <sup>1a</sup> so it was a good opportunity for me to practise them continuously.
- <sup>2c</sup> I thought it was hard to remember that the same verb can have a completely different meaning just by changing or adding one preposition. <sup>1c</sup> Nevertheless, I thought that if I learnt those things well enough, my vocabulary would expand greatly.

*Note.* The questionnaire data reported here are pre-attrition (with informed consent), thus producing a response rate greater than the sample size in the main write-up ( $N > 127$ ).