

# Do cognitive linguistic insights help Japanese learners improve their use of English articles?

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Keywords : English articles, cognitive linguistics, learning effectiveness

## 概要

英語冠詞を対象に、認知言語学的知見に基づく学習法と日本で広く使われている教育文法に基づく学習法の学習効果について比較検証した。その結果、各学習法を用いて学んだ日本人大学生はより適切に英語冠詞を使用するようになったことが明らかになった。しかし、学習効果に関して、2つの学習法の間には統計的に有意な差はなく、認知言語学的知見に基づく学習法の優位性は見られなかった。

## 1. Introduction

Second language acquisition (SLA) and foreign language learning (FLL) research fields have seen an increasing number of theoretical and empirical studies focusing on cognitive linguistic insights into the relationships between linguistic form and meaning (e.g., Littlemore, 2009; Robinson & Ellis, 2008; Tyler, 2012). These studies argue that overt explanations of how language reflects a person's mind facilitates SLA and FLL, because such information or knowledge, which is normally acquired implicitly by first language (L1) speakers, generates not only grammatically accurate but also contextually appropriate sentences (Boers, 2013). In fact, some empirical studies found that the cognitive linguistics (CL) approach is superior to the conventional approaches in SLA and FLL (e.g., Tyler, 2012). These findings are appealing because research has shown that conventional approaches fail to lead second language (L2) or foreign language (FL) learners to fully acquire certain linguistic features. The English article system is one of them. It is well known that English articles form such a complex grammatical system that a working knowledge of them is "notoriously hard to

acquire for native speakers of L1s that [have no such system] or that use a very different system” (DeKeyser, 2005, p. 5). If the CL approach leads to a better understanding of grammatical and lexical items, it is important to examine whether the CL approach could eliminate or reduce some blockage rooted in the course of FLL by conventional approaches.

### 1.1 Cognitive linguistic insights into SLA and FLL

A fundamental view of language in CL is distinctive, and quite different from that in generative linguistics or linguistic typology, which many previous studies on SLA and FLL used as their theoretical frameworks. CL considers language as reflecting a person’s general conceptualization, individual experience, and cultural background. It focuses on the interplay between language and human representations of the world in its linguistic analysis and theorization (Langacker, 2008), and provides “a detailed description of the cognitive processes that are at work in language and thought enabling people to extract linguistic knowledge from language use” (Littlemore & Juchem-Grundmann, 2010, p. 1). It is noteworthy that the CL viewpoints about language, and their insights into language learning, have made a unique contribution to SLA and FLL research.

Studies examining the effectiveness of the CL approach in SLA and FLL focus on the key concept underlying CL frameworks: “conceptual relatedness” or “shared semantic characteristics.” Boers (2000), for example, demonstrated that primary conceptual metaphors of prepositions (e.g., ACTIVE IS UP, INACTIVE IS DOWN) facilitated FL learners to memorize unfamiliar figurative expressions (e.g., set up, break down, shut down). Verspoor and Lowie (2003) also underscored the effectiveness of learning core senses that motivate multiple meanings of a polysemous word. They argue that the CL approach (e.g., explicit accounts of how the seemingly different senses of a polysemous word are interrelated) is more effective in learning polysemous words than the conventional approach (such as memorizing each meaning of a polysemous word with its L1 equivalent).

Tyler and colleagues claim that the CL approach is even effective for learning complex grammatical items, such as the subtle differences of lexical-grammatical elements. In Tyler, Mueller, and Ho (2010), for example, L2 learners studied modal verbs (e.g., can, will, may, must, could, would, should) from either a CL approach or an approach based on a speech act view (i.e., the traditional approach). The CL approach focused on the relationship between basic spatial-physical force dynamics and human cognition (e.g., reasoning and logical prediction). In other words, the CL group learned how the force dynamics that modal verbs represent are rooted in their specific meaning and usage. The traditional approach, in contrast, simply provided explanations of the relationship between modals and their functions in speech (e.g., expressing ability and possibility, granting

permission, asking for permission). Results showed that the two-hour intervention helped the CL group deepen their knowledge of appropriate usages of the modal verbs more than the traditional-approach group. Tyler (2012) also reported similar findings favoring the CL approach for learning such complex grammatical items as clause-level constructions.

## 1.2 Acquisition of L2 English articles

Research on L2 or FL learners' usage of English articles points out that learners' incorrect usage of them is often associated with the erroneous conception of referentiality (e.g., Akamatsu & Tanaka, 2008; Thomas, 1989). Learners often make mistakes with English articles, because they lack a systematic way of judging correctly either the specificity of a referent or the availability of the information it conveys from speaker to hearer—or even both.

According to hypotheses or models that explain the principles underlying English-article usage, its complexity and implicitness arise from the interaction of heterogeneous factors relating to referentiality: *definiteness*, *specificity*, and *countability*. The notion of *definiteness* reflects the speaker's and hearer's familiarity with a referent (Lyons, 1999). When the referent is known or identifiable by both participants, it is conceived as definite. In contrast, when the referent is contextually novel and cannot be identified, it is normally conceived as indefinite. The speaker's and hearer's shared knowledge of or familiarity with the referent stems from their general knowledge of the referent, or contextual or situational information available to them.

*Specificity*, by contrast, refers only to the speaker's knowledge or state of mind (Ionin, Ko, & Wexler, 2004). When the speaker has a particular object or person in mind as the referent, it is regarded as specific. Specificity also differs from definiteness in how their properties are morphologically encoded. In English, definiteness is morphologically encoded in the article system: the definite referents are denoted by the article *the*, and the indefinite referents are marked with *a* or no article, depending on their countability and number properties (i.e., the countable-uncountable and singular-plural distinctions). The specific-unspecific distinction, on the other hand, is not morphologically encoded in the English article system, and therefore, specificity by itself does not determine the choice of English articles.

*Countability* concerns whether a referent can be individualized and countable, and in English, nouns are classified into two types: count and mass nouns. Mass nouns are marked with no articles; count nouns are denoted differently according to the number property: the article *a* for singular nouns and zero articles for plural nouns. This countable-uncountable distinction may appear straightforward and easy to understand; nonetheless, it could be puzzling to L2 or FL learners because

the countability property of nouns is not dichotomous. Although most nouns may be said to “prefer” count or mass status, noun countability is conceptually motivated and is dependent on how a person conceives a referent (Allan, 1980). Accordingly, “most count nouns can be used in mass sentence contexts, and most mass nouns can be used in count sentence contexts given a suitable conceptual context” (Iwasaki, Vinson, & Vigliocco, 2010, p. 191).

### 1.3 Effectiveness of interventions for improving the appropriate use of English articles

With respect to the effectiveness of instruction of the English article system, research has shown mixed results. While some studies highlight positive effects on understanding English-article usage, others find some limited effects. Master (1994), for example, maintains that systematic intervention should improve L2 learners’ understanding of English-article usage. In his study, he taught major aspects of the English article system over nine weeks (e.g., the countable-uncountable, the singular-plural, the definite-indefinite, and the specific-generic distinction) and found that a total of six hours of instruction significantly improved L2 learners’ usage of English articles.

Bitchener and Knoch (2010) also reported the importance of the explicit instruction of English articles. They provided three types of corrective feedback towards article errors made in written narratives: (1) direct written corrective feedback with metalinguistic explanation, (2) indirect written corrective feedback, and (3) direct written corrective feedback with metalinguistic explanation plus a 15-minute review instruction of English-article usage. The L2 learners who received any of these three types of intervention showed improvements in accuracy when using the target English articles on an immediate posttest. The results of a 10-week delayed posttest, however, showed that only the learners who received direct written corrective feedback had sustained their improvement.

Although direct instruction of English articles may appear to be promising due to these favorable results, one must be cautious about generalizing their findings. This is because some studies tap only “a relatively well-defined aspect which can be easily understood by most learners” (Ellis, Sheen, Murakami, & Takashima, 2008, p. 357), such as the referential indefinite article for the first mention [*a* or *an*] and the referential definite article for subsequent mention [*the*]. Furthermore, even studies on the instruction of multiple aspects of the English article system (e.g., Master, 1994) often report their findings based on gains in the total scores on the posttest, resulting in little, if any, information on the relationship between intervention effects and distinct aspects of English-article usage.

#### 1.4 The rationale of the present study

Both theoretical and empirical studies suggest the usefulness of cognitive linguistic insights into SLA and FLL. In fact, recent research shows that the CL approach is superior to the conventional approach in learning not only novel lexical items, but also complex grammatical items. Advocates for the CL approach claim that cognitive linguistic insights provide L2 learners with an opportunity to deepen their understanding of how language and thought work together in the L1 speaker's mind; therefore, they deduce that this explicit explanation of how language reflects one's mind should facilitate SLA and FLL.

This claim is worth exploring from both a theoretical and a practical point of view, because there are researchers who reserve judgment on the effectiveness of explicit learning of complex linguistic rules, such as the English article system. They state that previous studies use measures or materials which are likely to create a bias for the superiority of explicit learning (e.g., Ellis et al., 2009), and they argue that complex linguistic rules which involve abstract features of a grammar resist any type of explicit learning (e.g., VanPatten, 2011).

## 2. Method

### 2.1 Participants and tests

Fifty-four EFL learners participated in this study. All the participants were Japanese undergraduates, and they had received formal English education for approximately 6 to 8 years at the time of the study. None had lived in an English-speaking country for more than one year.

The participants took the Oxford Quick Placement (OQP) test (Oxford University Press, 2001) and the scores were used to assess their English proficiency. There were also two versions of an original test administered to assess the participants' ability to use English articles appropriately. The participants were divided into two groups in such a way that each group contained equivalent levels of English proficiency and knowledge of using English articles (the OQP Test,  $F(1, 52) = 0.07, p = .791$ ; the article pretest,  $F(1, 52) = 0.01, p = .923$ ).

Each version of the original article test consisted of 56 test items which assess usage of English articles for noun countability (abstract nouns, material nouns, and individuated abstract or material nouns), for definiteness (contextual specification, phrasal specification, uniquely specified referents), and for no specification (i.e., unspecified count nouns). The uniquely specified referents included items such as *moon*, *earth*, *universe*, and items specified by superlative or unique adjectives such as *worst*, *only*, *same*. The generic usage of definite articles was not included.

There were eight items for each type. Each test item contained a single blank in either a single sentence or a pair of sentences. The participants were asked to select one answer to complete a target sentence in the best way possible (see Appendix A for sample test items). Three native speakers of English (all of them, university professors) examined the appropriateness (i.e., content validity) of each test item. The two versions of the article test were used for a pretest as well as for three posttests. The estimated reliability of the tests (i.e., Pearson-Brown Coefficient of Reliability) was .77 for Version 1 (the pretest) and .79 for Version 2 (the immediate posttest). The equivalence of the two versions was also examined using 79 Japanese undergraduates who had similar educational backgrounds and English proficiency ( $t(78) = -1.52, p = .131$ , two-tailed; Pearson's correlation coefficient:  $r = .93, p < .001$ ).

## 2.2 Materials for learning the English article system

There were two versions of materials for learning the English article system, each of which focused on a specific learning approach: an approach based on cognitive linguistic insights relating to the appropriate usage of English articles, and a conventional approach that has been widely adopted in Japanese schools. In particular, these two versions differed in their methods for explaining noun countability and definiteness.

The conventional-approach material for *noun countability* was adapted from grammar reference books based on pedagogical grammar and linguistic typology (Ando, 2005; Sugiyama, 1998). It focused on the classification of nouns (e.g., common, collective, abstract, and material nouns). The material for the CL approach, on the other hand, was adapted from Kishimoto (2003) and developed according to cognitive linguistic insights into *noun countability*: *discreteness* and *boundedness* (Talmy, 2000). Talmy explains how the English-article system may shape L1 speakers' ways of perceiving objects. According to Talmy, because the English-article system requires a person to constantly decide whether the referent of a noun is countable or uncountable, English-L1 speakers become sensitive to the discreteness and boundedness of objects. For example, if the referent of a noun has an unclear, fuzzy outline, it is cognized as an uncountable, non-discrete substance, while the referent of a noun with a clear outline against its background is most likely cognized as a countable, discrete object. This concept of discreteness and boundedness, therefore, is considered to be useful in explaining the concepts underlying noun countability. In particular, it lucidly explains why mass nouns come to be countable in some cases (i.e., the individuation of abstract or material nouns) (see Appendices B and C for sample learning materials).

Both learning approaches also explained *definiteness* in the English article system. The material for the CL approach placed a special focus on cognitive

aspects affecting definiteness in the English-article system: the mutual recognition of an object between the speaker and the hearer. The CL approach emphasized that the definite article is used only when both the speaker and the hearer can specify the referent of an object. The conventional approach, on the other hand, explained classification of English articles without paying attention to cognitive aspects such as the mutual recognition of an object. Despite the difference in the learning approach, both materials were written in the learner's L1 (Japanese), and contained the same visual aids (i.e., illustrations and pictures) and sample sentences with Japanese translations.

### 2.3 Study design

The study consisted of three stages: pretest, learning, and posttest. At the pretest stage, the OQP test and the original article test (Version 1) were administered. The administration time was 60 minutes (30 minutes for each test). After the tests, the participants were given a questionnaire on their educational backgrounds and experience living abroad.

The learning stage, which started approximately one week after the pretest stage, consisted of four sessions. Both groups had learning sessions over four weeks (one session per week). In each session (approximately 70 minutes), the participants were provided with written materials that explained the English article system in the learner's L1, Japanese. The time allocated for studying the English article system was approximately 20 minutes.

After each learning session, the participants took a practice test which measured usage of English articles. The format of the practice test was identical to that of the pretest except that the number of the test items was fewer (i.e., 14 items) and the participants were asked to write a reason for each answer in their L1, Japanese. After the practice test, the participants corrected their response sheets using answer keys and explanations (i.e., the self-correction and relearning session). While correcting the test, they were encouraged to take notes, referring to the material which had been given while learning the English article system. When the participants finished reviewing their test results, they took a quiz. The quiz contained 28 test items in the first learning session and 35 test items in the second and third learning sessions. The format was identical to the pretest except that the participants were asked to write a reason for each answer.

At the end of the fourth self-correction and relearning session, they took an immediate posttest (the original article test–Version 2). The administration time for the posttest was 30 minutes. The participants also took a one-week and a three-week delayed posttest. The test items in the delayed posttests were identical to those in the immediate posttest; however, these items were randomized each time, so that the sequence differed.



## 2.4 Experimental design and data analysis

Data were analyzed with learning approach (the CL and the conventional approach) as a between-subjects factor, and time (one pretest and three posttests) as a within-subjects factor, using a repeated ANOVA. The scores in the article tests constituted the dependent measures.

This study also analyzed qualitative data using the participants' answer sheets from the learning-stage quizzes. The study carefully examined each of the reasons for the answers that the participants wrote in the quizzes. When the participant's answer was based on the wrong reason (e.g., inaccurate knowledge or misunderstanding), it was counted as an error even though the answer was correct. These qualitative data were used to explore what misconceptions led to the erroneous usage of English articles during the learning stage.

## 3. Results

Seven participants in each learning-approach group did not take the three-week delayed posttest. The results of the analyses were based on the data obtained from 40 participants (i.e., 20 participants for each group).

### 3.1 Results of quantitative data

Seven participants in each learning-approach group did not take the three-week delayed posttest. The results of the analyses were based on the data obtained from 40 participants (i.e., 20 participants for each group).

There was no significant main effect associated with learning approach,  $F(1, 38) = 0.16$ ,  $p = .689$ : the CL-approach group ( $M = 45.2$ ,  $SD = 5.0$ ) and the conventional-approach group ( $M = 45.7$ ,  $SD = 5.0$ ) were not statistically different in their article-test scores. By contrast, the main effect of time was significant, Wilks' Lambda = .34,  $F(3, 36) = 23.18$ ,  $p < .001$ ,  $\eta_p^2 = .659$ ; all the posttest scores (immediate posttest:  $M = 46.3$ ,  $SD = 4.0$ ; one-week delayed posttest:  $M = 47.1$ ,  $SD = 4.4$ ; three-week delayed posttest:  $M = 47.2$ ,  $SD = 3.8$ ) were significantly higher than the pretest scores ( $M = 41.2$ ,  $SD = 5.3$ ) ( $p < .001$ ). There were, however, no statistically significant differences among the three posttest scores. The interaction between learning approach and time was also not statistically significant, Wilks' Lambda = .31,  $F(3, 36) = 1.36$ ,  $p = .271$ .

Because no superiority of the CL approach over the conventional approach was observed, which is inconsistent with the findings of previous studies, the article-test scores of each distinct aspect of English-article usage were examined in detail (see Figures 1 and 2).



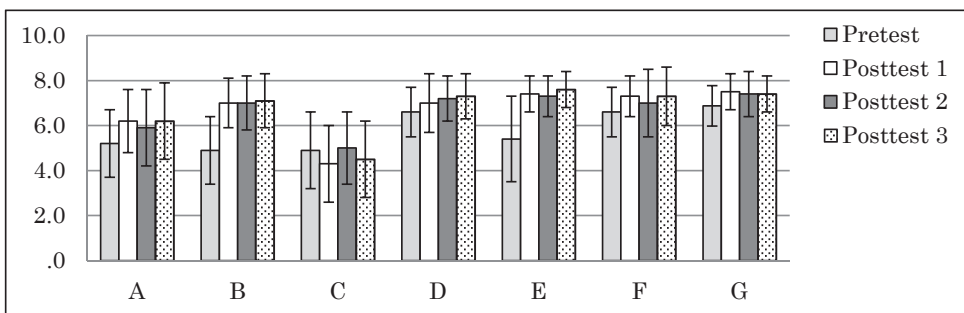


Figure 1. Means of the article-test scores for the CL-approach group

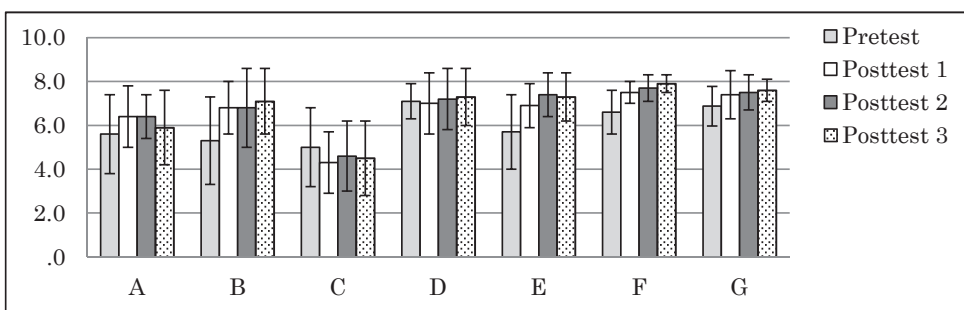


Figure 2. Means of the article-test scores for the conventional-approach group

Note. Error bars denote standard deviations. A: abstract mass nouns; B: material nouns; C: individuated abstract or material nouns; D: contextually specified referents; E: referents with phrasal specification; F: uniquely specified referents; G: unspecified count nouns (no specification)

The number of the participants in this study was too small in relation to the distinct aspects of English-article usage (7 outcome measures) and, therefore, not suitable for multivariate data analysis. Nonetheless, descriptive statistics suggest that there was a discrepancy in learning effects between distinct aspects of English-article usage. Specifically, as Figures 1 and 2 show, regardless of differences in the learning approach, the accuracy rates for nouns with the definite article and unspecified count nouns (D, E, F, G) was relatively high and it remained so for 3 weeks (e.g., mean scores in Posttest 3, D: 7.3, E: 7.4, F: 7.6, G: 7.4; i.e., 91.3%, 92.8%, 94.7%, 92.8% in accuracy, respectively). By contrast, the EFL learners' knowledge of English-article usage for the noun-countability items (A, B, C) was relatively inaccurate. Before the learning stage, the mean pretest scores for the noun-countability items ranged from approximately 5.0 to 5.4. After the learning stage, the learners showed some improvement in use of English articles for abstract nouns (6.1, i.e., 75.6% in accuracy) and material nouns (6.9, i.e., 86.6% in accuracy), but they still had difficulty in understanding the usage of

English articles for individuated abstract or material nouns (4.5, i.e., 56% in accuracy). In fact, individuated abstract or material nouns is the only item whose accuracy in English-article usage remained low before and after the learning stage. It should be noted that such inaccurate knowledge of English-article usage for the noun-countability items was observed in the data based on quizzes in the learning stage.

### 3.2 Results of Qualitative Data

A total of 98 test items in the quizzes were examined with respect to accuracy rates, the distributions of correct and incorrect answers, and reasons for erroneous answers (i.e., misconceptions leading to erroneous use of English articles). Due to space limitations, this article focuses on the 20 items that were the most problematic for the participants. The accuracy rates for these 20 items ranged from 2.5 to 75.0%, and 80% of them related to noun countability (see Table 1). Interpretative results of the 20 items with poor performance are reported in detail in the discussion section.

Table 1. *Test Items that Caused the Most Mistakes for the Participants*

	A.P.	Type	Test Items	zero	a/an	the
1	2.5	C	Mary has ____ around her, doesn't she? (a) air (b) an air (c) the air	28	4 (3)	8
2	27.5	B	You have ____ on your face. (a) egg (b) an egg (c) the egg	15 (4)	14	11
3	30.0	B	My child had ____ for dinner. (a) roast chicken (b) a roast chicken (c) the roast chicken	13 (1)	26	1
4	35.0	A	You gave us ____. (a) great information (b) a great information (c) the great information	14	8	18
5	40.0	C	Is this ____ to travel in Mexico? (a) bad time (b) a bad time (c) the bad time	10	23 (7)	7
6	45.0	F	In this area people used to speak ____. (a) same language (b) a same language (c) the same language	4	13	23
7	50.0	B	He has a friendly face and ____. (a) short hair (b) a short hair (c) the short hair	23 (3)	16	1
8	55.0	G	I will keep ____. (a) diary (b) a diary (c) the diary	12	26 (4)	2

9	60.0	C	Cancer is ____. (a) serious disease (b) a serious disease (c) the serious disease	11	27 (3)	2
10	60.0	F	We don't know much about ____. (a) universe (b) a universe (c) the universe	13	1	26 (2)
11	60.0	G	I have never seen such ____. (a) big cat (b) a big cat (c) the big cat	0	36 (12)	4
12	60.0	A	This is a great day in ____. (a) history (b) a history (c) the history	25 (1)	0	15
13	60.0	C	Milk is ____. (a) rich food (b) a rich food (c) the rich food	7	29 (5)	4
14	62.5	G	We need someone who is ____ on this matter. (a) expert (b) an expert (c) the expert	0	30 (5)	10
15	67.5	A	Is there ____ for another watermelon in your basket? (a) space (b) a space (c) the space	28 (1)	6	6
16	67.5	A	He left the world of ____. (a) show business (b) a show business (c) the show business	29 (2)	5	6
17	67.5	B	Can I use this glue for ____? (a) metal (b) a metal (c) the metal	28 (1)	4	8
18	72.5	E	____ in that lake is very dirty. (a) Water (b) A water (c) The water	10	0	30 (1)
19	75.0	G	I have worked all week. I need ____. (a) day off (b) a day off (c) the day off	6	33 (3)	1
20	75.0	F	Turn right at the next corner, and you'll see the park on ____. (a) left (b) a left (c) the left	2	1	37 (7)

*Note.* The numbers in the shaded boxes represent those of correct answers; the numbers in the brackets are those of correct answers with erroneous reasons. A.P.: mean accuracy percentage. A: abstract mass nouns; B: material nouns; C: individuated abstract or material nouns; D: contextually specified referents; E: referents with phrasal specification; F: uniquely specified referents; G: unspecified count nouns (no specification)

#### 4. Discussion

This study highlighted the overall effects of explicit learning on EFL learners' understanding of the English article system and their appropriate usage of English articles. Explicit learning over four weeks improved EFL learners' accuracy in the use of English articles, from 74% to 84%. This finding is consistent with some previous studies suggesting that systematic interventions improve L2 learners' understanding of English-article usage (e.g., Master, 1994). In light of the relative effectiveness of the CL approach, however, the study found no difference in the effectiveness for improving the learners' use of English articles between the CL and the conventional approach. This finding contradicts the majority of previous studies, which have asserted the superiority of the CL approach in SLA and FLL (Boers, 2013).

There are several potential reasons for this discrepant finding. One reason could relate to the type of to-be-learned items. Many previous studies favoring CL approaches examined L2 learners' acquisition of novel grammatical or lexical items. This study, in contrast, investigated whether or to what extent the CL approach helps FL learners restructure knowledge already developed. In particular, the study focused on the possibility that the CL approach could eliminate the difficulty that learners have encountered in the course of FLL. Thus, the learners in this study had already reached a certain level of understanding of the to-be-learned items when they started to learn by the CL approach. Compared with the case of learners with no prior knowledge of to-be-learned items, this potentially creates fewer chances for learning effects to emerge. In the same vein, a relatively small number of test items for each aspect of English-article usage might have reduced the evidence of learning effects.

Another potential cause may involve the nature of the CL approach used in this study. Although previous studies argue that overt explanations of cognitive linguistic insights into to-be-learned items help learners understand their usage in depth, the learning approaches vary in complexity due to the nature of the target items. For example, in some previous studies examining the CL approaches in learning idioms or polysemous lexical items, the learners were given materials explaining semantic characteristics commonly shared among to-be-learned items. These semantic characteristics (e.g., conceptual metaphors) tend to be concrete, and therefore, easy to use as mnemonic devices. Even in studies that used relatively complex items, such as modal verbs (Tyler et al., 2010) and clause-level constructions (Tyler, 2012), the target knowledge or the to-be-learned items were concrete enough for learners to understand the relationship between their specific meanings and usages.

The CL approach used in this study, by contrast, was based on abstract concepts: (a) discreteness and boundedness of referents for noun *countability* and (b) the speaker's and the hearer's mutual recognition of referents for *definiteness*. This abstractness is unavoidable, because it is very hard to provide concrete, semantic characteristics that explain the conceptual relatedness underlying such a complex system as English articles. Compared with concrete concepts, abstract concepts have the advantage that they are flexible and thus, applicable in more contexts; however, such applicability has a negative aspect. Abstract concepts result in individual differences in use and, in its worst case, could lead to misconceptions.

The learners' comments on their erroneous usage of English articles showed that they had difficulty internalizing the cognitive linguistic insights into the use of English articles. For example, in Item 8 in Table 1 (*I will keep a diary*), several learners mentioned, *In this context, the word 'diary' does not simply mean 'an object' but its content, so it should be treated as an abstract noun, or the word 'diary' in this sentence symbolizes the deed or habit of 'keeping a diary'; therefore, you can see no clear outline of the referent*. There were similar misconceptions found in the comments on Item 7 (*He has a friendly face and short hair*): *Although 'hair' has no clear outline and cannot be counted, the word 'hair' in this context means a type of hair style, so it can be counted. Like the word 'team', if you cognize hair as a whole, it can be counted*. These comments seem to reflect the learners' unsuccessful attempts to reconstruct their ways of attending to target objects according to the knowledge they acquired at the learning stage in the study.

In Item 2 (*You have egg on your face*), approximately half of the CL approach group (i.e., 11 out of 20 participants) made errors due to their predetermined, stereotypical concepts of "egg" or misdetection of the referentiality of the target object. These learners claimed that *egg* has a clear outline and chose the indefinite article. There is no way of knowing whether they really understood what the sentence "you have an egg on your face" means. According to a working hypothesis, those learners did not know that by placing the indefinite article before *egg*, the target referent comes to mean the whole egg. It seems that the learners understood that the target referent was not a whole egg but a part of an egg; however, when they focused on the discreteness and boundedness of the referent, they came to conclude that its outline was clear, and chose the indefinite article. In other words, they did not understand that indefinite and zero articles each play quite an important role in differentiating objects from substances.

In Item 3 (*My child had roast chicken for dinner*), the majority of learners made the same mistake: They chose the indefinite article for the target referent. This case, however, is more complicated than Item 2, because the word *roast chicken* is often used as a loan word in Japan to indicate different types of cooked

chicken, such as grilled chicken legs, grilled chicken wings, or grilled chicken breasts. Therefore, it may be true that the learners probably did not know the word *a roast chicken* means a whole cooked chicken, which is not plausible for a child to have for dinner; however, it is quite probable that they had grilled chicken legs or breasts in mind and chose the indefinite article.

The qualitative data also appear to suggest possible reasons why individuated abstract or material nouns resisted the effects of explicit learning. Among the 20 least-accurately-used English articles in the quizzes given during the learning stage, four items were related to indefinite articles for individuated abstract or material nouns (i.e., *air*, *time*, *disease*, *food*) (see Table 1). Students who selected the wrong items gave the following reasons: '*Air*' is a material noun, so it cannot be counted [Item 1], '*Air*' has no clear outline [Item 1], and *In this case, 'air' refers to a sort of atmosphere or personality the woman has. So, it refers to an abstract object, and it requires no articles* [Item 1]. Furthermore, the typical comments the learners made include such reasons as *We cannot count 'time'* [Item 5], *The outline of 'disease' is fuzzy* [Item 9], and *'Food' is an uncountable noun* [Item 13]. These comments suggest that the learners who made errors on these items could not grasp the contexts that individuated the target objects or failed to revise their predetermined, stereotypical concepts of abstract or material nouns.

Moreover, the qualitative data illuminate some difficulties which the learners might have encountered during the learning stage but which may not be observed in the results of the pretest and the posttests. The analyses of the quantitative data showed that the EFL learners had relatively accurate knowledge regarding the use of English articles for unspecified referents. The qualitative data, however, showed that some learners used idiosyncratic rules or hypotheses in using English articles for no-specification items. For example, approximately 90% of the learners were correct on Item 11 (*I have never seen such a big cat.*); however, approximately 33% of their correct answers were based on erroneous reasons. Furthermore, 75% of such erroneous reasons were of the same type: idiosyncratic rules or hypotheses that the learners made. Specifically, 9 learners chose the indefinite article because of such reasons as these: *There is always the indefinite article after the word 'such,' I have never encountered expressions like 'such the something' or 'such something.'* *The phrase 'such a something' is a set phrase, or I think I was taught that we need 'a' or 'an' after 'such.'* It is beyond this study's scope to explore why so many Japanese learners came up with this type of erroneous reason. It is noteworthy that Butler (2002) found that Japanese learners of English in her study also gave the same or similar comments for their erroneous use of English articles.

Lastly, the lack of difference in effectiveness between the CL and the conventional approach may relate to the amount of time allowed for learning. One may speculate that a total of four 70-minute sessions was not long enough for EFL

learners to process such a complex system as the usage of English articles. This would be true if no improvement in the learner's use of English articles were made after the learning stage. However, when the pretest and the three posttest scores were analyzed, the results showed the importance of systematic intervention: significant overall improvements were found in the CL- and the conventional-approach groups. Thus, lack of learning time may not be a major cause for no superiority of the CL approach over the conventional approach, but because of the nature of abstract concepts underlying the material for the CL approach, it is possible that the learners needed more time to fully absorb the cognitive linguistic insights into English-article usage.

In conclusion, the study showed that explicit learning helped EFL learners understand the English article system and improve their overall performance in the appropriate use of English articles. The study, however, found no superiority of the CL approach over the conventional approach: The two learning approaches facilitated EFL learners' understanding of the English article system, but they did not differ in effectiveness for improving the learners' use of English articles. This finding contradicts previous studies favoring CL approaches. The discrepant findings are considered as being rooted in the abstract nature of the cognitive linguistic insights into the usage of English articles (i.e., discreteness and boundedness of referents). Results suggested that the EFL learners failed to fully internalize the cognitive linguistic insights, or they misconceived them. The learners' comments on their erroneous use of English articles also illuminated that they could not grasp the contexts that individuated the target objects or failed to revise their predetermined, stereotypical concepts of abstract or material nouns.

#### Acknowledgment

This study was supported by JSPS KAKENHI Grant Number 22320113.

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#### APPENDIX A: Sample Test Items

- (1) Only humans have the gift of \_\_\_\_\_. [abstract nouns]  
 (a) speech                      (b) a speech                      (c) the speech
- (2) She thought traditional Japanese houses were built with \_\_\_\_\_. [material nouns]  
 (a) paper                      (b) a paper                      (c) the paper
- (3) Methane is also \_\_\_\_\_. [Methane:メタン] [individuated abstract or material nouns]  
 (a) greenhouse gas    (b) a greenhouse gas    (c) the greenhouse gas
- (4) Go to \_\_\_\_\_. [contextually specified referents]  
 (a) front door                      (b) a front door                      (c) the front door
- (5) \_\_\_\_\_ sitting next to you is quite handsome. [referents with phrasal specification]  
 (a) Student                      (b) A student                      (c) The student
- (6) “Do you have more oranges?” “No, this is \_\_\_\_\_ left.” [uniquely specified referents]  
 (a) only one                      (b) an only one                      (c) the only one
- (7) “Do you know what Bill does for living?” “Yes, he is \_\_\_\_\_. [no specification]  
 (a) doctor                      (b) a doctor                      (c) the doctor



## APPENDIX B: Sample Material for the CL Approach (A Translated Version)


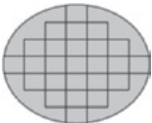


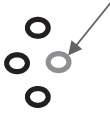
One needs to understand the nature or features of nouns in order to use the English articles in an appropriate manner. This text explains two basic criteria for proper usage of the English articles.

**The first criterion** has something to do with “individuation.” Individuation refers to whether an object or the referent of a noun can be considered as a single entity. Individuation depends on the degree of clarity with which the outline form of an object is conceived. If the outline form of an entity is clear, it is considered as a countable noun. On the other hand, if the outline form is not clear, the entity is considered as an uncountable noun.

<p>(A)</p> 	<p>In Picture (A), there are apples. You can see the outline form of each object (i.e., apple) clearly, and therefore, they are conceived as countable. In this case, the plural form is used as in “There are apples on my table.”</p>
<p>(B)</p> 	<p>In Picture (B), as in Picture (A), the outline form of the object is clear. Therefore, the singular form is used as in “There is an apple in my hand.”</p>
<p>(C)</p> 	<p>In Picture (C), you see an apple pie. Apples in the pie are sliced and cooked, so that the original shapes or outline forms of the apples do not remain. In this case, unlike the apples in Pictures (A) and (B), the outline form of the entity is not clear: The uncountable form is used as in “There is apple in my pie.”</p>
<p>(D)</p> 	<p>In trashing recyclable garbage, we sort it according to its substance. In sorting garbage, naturally, we pay attention not to how big or what shape the garbage is, but to what substance or material the garbage is made of. In other words, although garbage can be conceived as countable items (e.g., a steel can, a plastic bottle), we do not attend to each item as an entity. Thus, in referring to substance, the object is conceived as an uncountable noun as in “You should put paper and plastic into the recycle boxes.”</p>
<p>(E)</p> 	<p>We do not normally conceive the shape of abstract objects. For example, such emotion as “love” has no outline form. Thus, abstract objects are conceived as uncountable nouns as in “We fell in love on our first date.”</p>

**The second basic criterion for proper usage of the English articles** is “the mutual recognition of an object” between the speaker and the hearer. Only when both the speaker and the hearer can specify the referent of an object, the definite article, *the*, is used.

<p>(F)</p> 	<p>Person (B) said to Person (A), “Pass me <u>the</u> plate, please.” In this situation, it is obvious that the plate which Person (C) is referring to is the one in front of Person (A). In other words, the context provides the mutual identification of an object between the speaker and the hearer in Picture (F), resulting in the use of the definite article <i>the</i>.</p>
<p>(G)</p> 	<p>Person (A) said to Person (B), “Many people didn’t believe that <b>the</b> earth goes around <b>the</b> sun.” In our solar system, we have only one earth and one sun. This is a common sense or the fact we expect everyone knows. Therefore, we place the definite article, “the” before <i>earth</i> or <i>sun</i> to specify them.</p>

Schematic Summary of the First Criteria				
Gas, Liquid, Abstract Object	Substance	Collective Entity	Discrete Object (Plural)	Discrete Object (Singular)
(a) 	(b) 	(c) 	(d) 	(e) 
air, love	wood, paper	cutlery, team	apples, books	an apple, a book
Weak ←----- Individuation -----> Strong				
Unclear ←----- outline form -----> Clear				
Uncountable ←-----> Countable				

**APPENDIX C: Sample Material for the Conventional Approach (A Translated Version) [Due to the space limitation, example sentences with illustrations and pictures are omitted.]**

Nouns can be classified into two types: Countable and uncountable nouns.

**1. Countable Nouns**

A countable noun is a common noun which describes a class of entities (such as person, plant, city, etc.). Many nouns belong to this type of noun.

**Features of a countable noun**

- (1) It occurs in both the singular and the plural form.
- (2) It can take an indefinite article (a or an) (e.g., *an apple*).
- (3) The plural form mostly takes “s” at the end (e.g., *apples*).

Do cognitive linguistic insights help Japanese learners improve their use of English articles?

- (4) It can be modified by a numeral (e.g., one, two, three ...).
- (5) It can be modified by a quantifier (e.g., many, a few, each).

## 2. Uncountable Nouns

An uncountable noun is a noun that is characterized by the fact that it cannot be directly modified by a numeral. There are different types of uncountable nouns:

- (1) Collective nouns: a noun used to define a group of objects, where objects can be people, animals, emotions, inanimate things, concepts, or other things (e.g., *cutlery*). (Every collective noun is not necessarily an uncountable noun. In fact, many collective nouns are countable.)
- (2) Material nouns: the name of a substance which has no outline form or shape (e.g., *paper, plastic*)
- (3) Abstract nouns: a noun that refers to something a person cannot physically interact with, such as aspect, concept, idea, experience, state of being, trait, quality, feeling, or other entity (e.g., *love*).

### Features of an uncountable noun

- (1) It does not combine with plural form.
- (2) It does not take an indefinite article (a or an).
- (3) It cannot be modified by a numeral.
- (4) It can be modified by a quantifier (e.g., much, little).

### Classification of English articles

There are two types of articles in English: an indefinite article (*a* or *an*) and a definite article (*the*). When a noun or a noun phrase is preceded by no article, it is called a zero article.

- (1) Indefinite Article: An indefinite article indicates that its noun is NOT a particular one (or ones) identifiable to the hearer. English uses *a* or *an*.
- (2) Definite Article: A definite article indicates that its noun is a particular one (or ones) identifiable to the listener. It may be the thing that the speaker has already mentioned. It may be something uniquely specified or something identifiable to the hearer according to the context. Regardless of the countability of the noun, the definite article *the* is used.
- (3) Zero Article: Like an indefinite article, a zero article indicates that its noun is NOT a particular one (or ones) identifiable to the hearer. In principle, it combines with a countable (plural) and an uncountable noun.