The Asian Journal of Applied Linguistics
Vol. 6 No. 2, 2019, pp. 138-152

AJAL

Collaborative knowledge co-construction about an English article system

Yu Tomiwa
Todaiji Gakuen Junior and Senior High School

Pair work and group work are widely researched in the field of second-language education and there has been considerable focus on exploring their effectiveness and the nature of learning they represent within the Vygotskian sociocultural theoretical framework. However, there is little consensus about how learners solve problems together and what influence such experiences have on their linguistic knowledge, particularly in grammar-focused tasks with a special focus on complex linguistic items. This paper describes a case study which explores the impact of collaborative dialogue on learners' joint performance and their understanding of the English article system. The results show that collaboration helps the learners' joint performance by providing them with chances to pool their linguistic knowledge, particularly with the use of their first language for context comprehension as a basis for article selection. However, the results also suggest that such interactions do not always have a positive impact on individuals' understanding of the article system, leaving some of the questions raised during interaction unsolved. From those results, the current paper notes the importance of establishing an appropriate learning condition with the aim of maximising the learning opportunities collaborative work generates.

Keywords: Collaborative learning; collaborative dialogue; article system; language related episodes (LREs)

Introduction

In the field of second-language acquisition, peer interaction is regarded as an important source of learning (van Lier, 1996), and pair work or group work have gained much attention (Sato & Ballinger, 2016; Storch, 2013). Their effect has been particularly supported within the Vygotskian sociocultural theoretical framework, which claims the importance of the scaffolding and internalisation of target knowledge/skills. However, other research has pointed out various factors affecting pair/group work. One of these factors is the learning target, and particularly its complexity, which can affect considerably the outcomes of the pair or group work. In addition, in most projects using pair or group work, participants are asked to use their L2 for peer-to-peer interactions, and this might limit the degree to which they can examine the target. The project reported here investigated learners' collaborative problem-solving process using their L1 for solving complex L2 grammatical problems and the impact of that process on their understanding of target items.

ISSN 2308-6262
http://caes.hku.hk/ajal

Literature review

L2 pair work within the Sociocultural Theoretical Framework

Sociocultural Theory (SCT) assumes that development occurs in the internalisation of scaffolding from more capable members of society, including peers, or cultural artefacts. It is a key theory in the research on L2 pair work and specifies that the goal activity must be set within learners' zone of proximal development (ZPD) which is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). SCT considers language as a powerful mediational tool to support a higher mental activity.

This role of language has attracted L2 teachers and researchers (Lantolf, 2007) because language can be used to examine, reshape, reorganise, and recreate an idea to reinternalise it. This process is referred to by Swain (2006) as *languaging*, and has been reported to contribute to the development of grammatical concepts (Lapkin, Swain, & Knouzi, 2008). This function of language is useful in peer-to-peer interactions that focus on language use (referred to as collaborative dialogue, Swain, 2000). In these interactions, learners participate in linguistic problem-solving and knowledge co-construction to achieve more than they can as individuals. Learners provide support to each other in terms of both linguistic knowledge and the use of selective attention (Ohta, 2001), deepen their understanding, and create new ideas about the target language (Swain, 1997). Learners also seem to be more motivated to focus on grammar when working in pairs, resulting in more accurate performances (Storch, 1999).

Effectiveness of collaborative dialogue

The effect of collaborative dialogue (CD) on L2 learning has been documented (e.g., Donato, 1994; Storch, 2005; Swain & Lapkin, 1998), but collaborative learning experiences seem to be affected by various factors (Storch, 2013). Storch (2007) reported easier problems were more correctly solved through pair work than through individual work, but she reported that there were no significant differences particularly in the domain of verb morphology and article use. Other research has also shown positive results with simpler items (Ammar & Hassan, 2018; Storch, 1999, 2005). Conversely, Baleghizadeh (2009, 2010) found that collaborative workers perform better than individual workers with complex items, such as articles, conjunctions, and prepositions.

Nassaji and Tian (2010), who conducted a comparative study of collaborative and individual learning of phrasal verbs, reported that collaboration helped learners perform better but did not result in significant improvements after they returned to post-collaboration individual work. Kuiken and Vedder (2002) reported similar results about individual learners' passive form development even though they captured several potential opportunities for knowledge transfer within groups. Thus, the previous research shows no agreement about how CD influences problem solving and language learning, particularly with regard to complex grammatical items.

Article system as a complex learning target

Semantic complexity is a major issue in mastering a grammatical form. The novelty and abstractness appears to be crucial, and it seems that the article system is one of the hardest to acquire, particularly for those whose L1 does not have any equivalent system (Dekeyser, 2005). Several studies conducted with Japanese EFL learners have reported problems with articles even among advanced learners. Yoon (1993, cited in Master, 1997)

argued that Japanese EFL learners struggle because they lack knowledge about using the context, which suggests difficulties in understanding how meanings are expressed using the article system. Butler (2002), also looking at Japanese EFL learners' difficulties with articles, argued that referentiality and countability are causes of misuse, and that the misdetection of countability remain problematic even for advanced learners. Tanaka (2013) focused on the use of *a* and *the* and attributed the problem to the distinction between definiteness and specificity. These problems are particularly observed in overuse of the definite article (Yamada & Matsuura, 1982). Learners also seem to find it challenging to put those concepts to use according to the context (Butler, 2002). The research reviewed here shows that the article system of English causes significant problems for Japanese EFL learners.

Thus, while the previous research has shown that CD helps learners' collaborative performance, little is known regarding its impact on individuals' language development, particularly about complex learning items. Since one of the essential goals of in-class pair/group work is individual learners' development, it is important to explore the impact of collaboration on each student's understanding of the learning target. In particular, the development of complex grammatical concepts might be enhanced through the mediation of language in the learning process, as in Lapkin et al.'s (2008) individual learning of grammatical concepts.

The present study

The current study employs a microgenetic approach, exploring the process of problem solving regarding the English article system. The study investigates the participants' collaborative problem-solving process regarding complex problems and its impact on individuals' understanding of the article system. The participants were allowed to utilise their shared L1 while interacting to maximise their interaction capacity. This is important because Storch (2008) reported learning was enhanced when learners "deliberated over the language items [and] sought and provided confirmation and explanations and alternatives" (p. 100) and the use of L1 can enhance the process (Anton & DiCamilla, 1999). This paper explores:

1. What influence CD has on learners' collaborative problem-solving process during an article cloze test using their shared L1.
2. How that experience contributes to individuals' understanding of the target item.

Research design and methodology

Participants

The participants were two Japanese university students, Hana and Minoru (pseudonyms), majoring in English. This paper reports part of a larger project involving four participants selected from 25 potential candidates who were recruited from the English department of a Japanese university. The four candidates were selected to participate in the study based on their levels of article usage understanding, which was measured using an article cloze test (pre-test). In particular, this paper focuses on a pair of learners, Hana and Minoru, who produced more language-related episodes (LREs) of a more elaborate kind (as defined by Storch, 2008) than the other pair. This allows the examination of the influence of CD on the problem-solving process and the participants' understanding of the target grammar. They had taken several classes together over the course of two years and

therefore knew one another relatively well. Their English proficiency levels were upper-intermediate according to their TOEFL ITP score (527 for Hana and 567 for Minoru). The interaction pattern of their dialogue was categorised as collaborative, according to pre-determined criteria[1], for the participants' high mutuality and equality throughout the dialogue (Storch, 2002).

Tasks

The participants worked on cloze tests (Tasks 1, 2, and 3, see Table 1) and were asked to select appropriate articles and give reasons for their choices. The questions were from an article-focused textbook designed for Japanese English language learners (Shiina, 2007). The number of articles correctly chosen, unless an unreasonable reason was provided, was calculated as the score. There was no time limit set for the task. Participants were not allowed to consult any external help such as dictionaries or grammar books. Three different tasks were prepared, each with different topics; but, in every case, the participants were asked to fill 40 blanks with an article. Almost all the words used were adapted to level 3 of JACET 8000 (Japan Association of College English Teachers, 2003), an English lexical corpus covering English words used in Japanese educational contexts, to ensure consistency of vocabulary level. For certain expressions that exceeded level 3 (identified by underlining), equivalent Japanese translations were provided (see the Appendix for an example).

Table 1. Data collection procedures

Day 1 Pre-test	Day 2 Pair Work	Day 2 Post-test	Day 2 Follow-up Interview
• Individual	• Pair	• Individual	• Individual
• Task 1	• Task 2	• Task 3	• Audio-recorded
	• Video- and audio-recorded		

Procedures

Data collection took two non-consecutive days. On the first day, the participants worked individually on an article cloze test used as a pre-test (Task 1). Two weeks later, the pair work session (Task 2), another individual task (Task 3, used as a post-test), and a follow-up interview were conducted in succession. The participants worked on Task 2 together. All the dialogues were video- and audio-recorded and transcribed by the author for later analysis. After the session, the participants took a 10-minute break and then worked individually on Task 3. Subsequently, one-on-one follow-up interviews were conducted to bring each participants' perspective and voice into the data analysis. The interviews aimed to elicit the learners' English learning history, their ideas about collaborative learning and the article system, and their views about their collaborative experience, as well as what they were thinking about while engaged in CD. Pair work and follow-up interviews were conducted in the participants' L1 to eliminate worry about language difficulty in expressing their ideas and opinions.

Data analysis

The data consisted of: 1) transcriptions of pair talk, 2) follow-up interview comments, and 3) changes in scores which provided data triangulation. The scores were analysed quantitatively to understand the impact of pair work, and the pair talk and interview comments were analysed qualitatively to look into the nature of the interaction. Interactions while choosing between multiple possible articles were a particular focus to investigate the impact of pair work on each learner's understanding of articles.

The handling of language-related episodes

With the aim of understanding the process the participants used to tackle each article problem and the impact of CD on their understanding of the learning target, the transcribed data of the pair talk were coded for forty LREs, which were used to represent the knowledge co-construction process (e.g., Swain, 2000). Multiple interactions on the same question were considered as a single LRE regardless of whether the interactions were interrupted by dealing with other LREs. The data were therefore analysed on a question-by-question basis. Furthermore, with a focus on the research questions, only the article-related units of each LRE were analysed. The transcribed data were analysed based on their original talk or comments in Japanese (although for this paper excerpts have been translated into English for readers' convenience). Some of the participants' remarks were in English and these are highlighted in italics in the extracts. In addition, participants sometimes read aloud from a text and this is underlined in the extracts. Each excerpt is presented along with information about the number of the blank within the text that it relates to (e.g., #1 signifies blank 1), the expected resolution of the problem (i.e. the article that should be provided), and the correctness of the choice made (represented by ✓ or *X*).

The handling of test score comparisons

Two sets of comparisons were made of test scores. Firstly, the pre-test scores were compared with the pair work scores. Secondly, the pre- and post-test scores were compared in order to understand the effects of pair work on a) the participants' joint performance and b) each participants' knowledge reconstruction. The score data were analysed by comparing the total scores but also by looking at the use of different types of article. For the latter purpose articles were categorised into three types (a, the, and 0) following Storch (1999), who observed the way learners work on article usage in collaborative learning.

Results

Test scores

The scores for the individuals' pre- and post-tests, and for pair work (Table 2) were compared to investigate the impact of CD on participants' joint performance and on each individual's understanding of the article system. The pair performance (overall score, 83%) was higher than individual pre-test scores (65% and 50%). The scores for different article types also improved in pair work with the exception of Hana's use of the article *a* which decreased. In the post-test the improvement in the use of *0* was retained, although there was a clear decline in Hana's use of *a* and *the*. These results suggest that CD assisted

accurate article selection overall, but its influence was not positive in all cases, particularly considering its impact on each learner's understanding of the target grammar.

Table 2. Participants' score dynamics by article type (%)

	Article	Pre-test	Pair	Post-test
Hana	a	73	67	38
	0	46	81	82
	the	75	87	57
	All	65	83	65
Minoru	a	55	67	63
	0	31	81	63
	the	77	87	76
	All	50	83	63

Collaborative dialogue and joint performance

This section discusses how CD contributed to the participants' improved performance. The discussion is based on a qualitative analysis of the pair talk data. Even though the pair discussed which article to use every time they faced a blank to fill, their elaboration varied for each problem. For instance, in their interaction regarding blank No. 36 (Excerpt 1), they only confirmed they had the same resolution without any further discussions. In the follow-up interview, both participants said that they had felt that they had similar amounts of knowledge about the article and had seen no need to discuss in depth, being confident about their selection. Minoru said, "We are familiar with the phrase 'the problem is that', so *the* was an automatic resolution". Hana also reflected on the part and commented, "The phrase 'the problem is that' is quite familiar and common … We both said 'the problem is that', didn't we? I think both of us thought that must be the answer. We didn't really discuss here. It was just spontaneous decision making".

Excerpt 1 --- #36/the/✓

723 H: Is it *the* for the first blank (of the sentence)?
724 M: It should be *the problem is that*.
725 H: Yeah, we say so.

In other cases, the discussion was elaborated in detail and focused on the nature of the target noun within the given context. They carefully co-developed and examined the meaning of the text. Excerpt 2 shows how they developed the context-specific meaning

of the target noun (language). The word itself was not difficult for them, though the text contained many expressions related to language and they struggled to grasp the specific concept referred. In line 441, Hana raised a question about the meaning of the phrase *language of how they worked*, before which the participants needed to put an article. Minoru then shared topic-relevant knowledge to help make sense of the sentence (lines 455–458). This helped Hana develop a context-specific meaning of the noun (lines 459–462), and they agreed to use *the* eventually. Consider, here, their use of the phrase *if so* in deciding which article to use (lines 465 and 466); this indicates that they made a decision based on their comprehension of the text. This example shows that the co-development and clarification of the context and context-specific meanings of vocabulary helped the learners perform better in article selection.

Excerpt 2 --- #27/the/✓

440 M: *Language of how they worked*…
441 H: What does it mean?

453 H: *Knowing,* what does this mean, *how they worked*? They functioned? No? I don't
454 really understand.
455 M: Well, this *language* is different from the one we use. I mean, in the computer or
456 science field, they use something called C-language. For example, here we have
457 *phone*, and … we have *phone* here. Isn't it relevant? I don't know, maybe a basis to
458 construct such things with? I don't know … *language* … I don't know …
459 H: Oh, so this (language) means certain words about those words? I mean, taking a
460 computer, for example, we know what a computer is, and even if we don't know
461 special technical terms for its functions and how it works, still we can use a
462 computer for our practical purposes. Does it mean that?
463 M: Yeah.
464 H: Still, they posed no particular threat.
465 M: If so, the article here should be *the*?
466 H: Yeah, if so, we may want *the* here.

Collaborative dialogue and its impact on individuals' understanding of articles

As shown in the previous section, the pair reached resolutions through interactions with varying degrees of elaboration. Regardless of the depth of the elaboration, those discussions seem to have provided the learners with chances to relate their grammatical knowledge to the context by solving problems. However, it is possible that some elaborations may have caused confusion. The analysis of LREs reveals that elaborated discussions which concerned more than one article raised their grammatical awareness but did not necessarily consolidate their relevant knowledge.

Table 3 shows the accuracy of the article selection and elaboration rates of the article-related interactions. The LREs which considered context-specific reasons are labelled as elaborated LREs. In total, 33 LREs led to correct resolutions, and the learner talk was elaborated and related with compositional contexts in almost half of such LREs. Conversely, the LREs for incorrect resolutions were all elaborated. It seems that elaboration happened when the learners had problems with article selection but elaboration did not necessarily lead to correct answers and it might have resulted in confusion (as reported above, Hana's scored dropped in the post-test). Further investigation into LREs concerning multiple possible articles revealed that five out of those 13 LREs resulted in incorrect selections which constituted 71% of all the incorrectly

resolved LREs (seven cases). In two of these five cases, correct resolutions were suggested by Hana but not adopted eventually.

Table 3. Accuracy of article selection and elaboration rates of article-related LREs

	Number of LREs [max 40]	Number of Elaborated LREs	Proportion of Elaborated LREs
Correct	33	16	48%
Incorrect	7	7	100%

Excerpt 3 shows how the participants considered multiple articles. Here, Hana took the lead in the discussion, comparing *the* and *0*, while Minoru reflected upon another blank followed by *technology* (No. 25), for which they selected *0*. Hana suggested *the*; they then tried to find a clear explanation for their choice (the). Hana was open to the correct resolution (0), but the pair did not elaborate on its use and therefore missed a chance to learn. They also created a hypothesis to explain their different choices for No. 35 and No. 25 (lines 702–719). This hypothesis remains uncorrected through CD.

Excerpt 3 --- #35/0/X

692 M: Then as the article is for ***technology*** …
693 H: *The* seems to be fine.
694 M: Well …
695 H: Or maybe no article.
696 M: When we had ***technology*** before …
697 H: What did we do?
698 M: We put nothing.
699 H: But this time it says ***optical disk***.
700 M: Um …
701 H: ***Optical disk***. Optical disk technology.
702 M: Um, is there anything like a rule, such as putting nothing for one word
703 but an article if the word is modified?
704 H: Ah. Maybe. Well, we don't want to put anything for just ***technology***, one
705 word.
706 M: Uh-huh
707 H: I mean …
708 M: ***Optical***.
709 H: I mean, with an adjective, we feel like putting something. So shall we?
710 We certainly don't put anything for ***technology***.
711 M: The reason? We don't know.
712 H: Well, ***technology***.
713 M: But then they might point out that we didn't put *the* for the last
714 ***technology***.
715 H: Because we have an adjective this time?
716 M: Ah.
717 H: Does that sound reasonable? I haven't learned the rules and I am not
718 sure, but I have such an image from reading the text. With more words, I
719 want *the* but no article for just *technology*.
720 M: Well, maybe that's fine.

There were other cases where the participants missed learning opportunities, even as they generated these opportunities in an LRE. Excerpt 4 shows how problems raised in the discussion were left unsolved, even though the participants' final resolution in the cloze test was correct. Here, they were working on blank No. 19. Starting with Hana's suggestion of the correct resolution (line 319), they considered multiple articles, assigning their own meanings to the context and even to the grammar system (lines 352-356). Bewildered by various possibilities, they eventually make a decision with no sound basis for the correct answer (lines 385 and 386). They addressed questions concerning article usage, but the opportunities for further learning were left untaken and the problems remained unsolved. The case is particularly intriguing because the discussion related to a problem they correctly resolved on the answer sheet. This suggests that correct answers on a test sheet do not necessarily imply success in learning.

Excerpt 4 --- #19/a/✓

319	H:	I think it is *a* somehow …
320	M:	*a source of*' …
321	H:	*The*?
322	M:	Either could come.
323	H:	Yes, either will fit, and there is a possibility for *a*.
324	M:	Yep. Well, if we consider *a*, which means one example.
325	H:	One example of *source*s.
326	M:	Yeah, one of the sources of *great ideas*.
327	H:	Could it mean that?
328	M:	Well, yeah, but I think *the* still works.
329	H:	Yeah, I find no reason not to use *the*.
330	M:	*A*?
331	H:	Yeah, I think it's *a* probably.
332	M:	Okay, then, *a*, meaning one example.
352	M:	*the high-tech field remains* … so it means, *the high-tech field* is the same
353		with … as the sentence here says *remains*.
354	H:	Ah, the same?
355	M:	You know, it takes Subject-Verb-Complement structure. And this *high-tech field* has *the* in its front. So when *the high-tech field* represents the same thing with this *source*, then *source* may also have *the* in its front. I just
356		thought so.
357	M:	Ah, it makes sense.
374	H:	But when we said *a*, it made sense to me very clearly.
384	H:	Yeah, but *the* also sounds okay to me.
385	M:	Yeah … But you know, in this kind of task, our first impression tells. We usually fail when we rethink and rewrite in exams.

The follow-up interview revealed that collaboration engaged the learners in a more in-depth consideration of their choice. Hana, reflecting on the collaborative experience, said, "Even a small decision took more consideration because we needed to exchange our ideas using language … This time I was trying to put my thoughts into language to deliver them [to my partner]" (lines 124-132). Thus, a collaborative experience seems to have generated chances to reflect upon the article system. However, a careful analysis of their problem-solving process implies that they did not necessarily improve their

understanding of the language. Pair work may have raised their general awareness of grammar, but the participants had difficulty explaining their ideas and, at times, failed to share their opinions. Minoru's interview comments represent this well: "I wouldn't offer an opinion without being sure I had good reasons to advance it. Sometimes, I had my own opinion but refrained from sharing it for the lack of clear explanation".

Discussion and implications

This case study has explored the influence of CD on learners' joint problem-solving process and individuals' understanding of the article system. The analysis has revealed that CD can assist learners in performing better than they can as individuals. The pair tackled the task with more in-depth consideration of grammar and achieved higher accuracy in article selection. Working collaboratively seems to have had a positive impact on their learning experience, providing the participants with chances of receiving and giving social assistance through language. However, the study also revealed that better outcomes on tests did not necessarily correlate with the co-construction of knowledge about the article system. Article selection requires an appropriate understanding of the dynamic context (Butler, 2002), and the participants in this study may have benefited from the co-development of text meaning.

The observed result of better performance during collaboration than for individuals contrasts with the findings of Storch (1999, 2007). One possible reason is the language used in interactions; Storch (1999, 2007) had her participants use the target L2, while the participants in this study used their shared L1. Although the use of L1 in L2 classrooms has been controversial, L1 may play a role in language learning, particularly when learners need to clarify vocabulary and meaning (Scott & Fuente, 2008; Storch & Wigglesworth, 2003), and they are not ready to self-regulate L2 use as a cognitive tool in meeting the demands of a given task (Anton & DiCamilla, 1999). In the current study, higher grammatical accuracy seems to have been due to co-developed text meaning, and L1 might have benefited the pair in "developing [that] meaning" (Swain, 2005 as cited in Nassaji & Tian, 2010, p. 399), though Baleghizadeh (2009) reported a positive result of CD even though his participants' L2 proficiency was not considered higher than that of Storch's (1999, 2007). Clearly, there is room for further discussion regarding students' proficiency in L2 as a learning target and a mediational tool.

In addition, the analysis shows that even elaborated discussion by a collaborative pair does not necessarily have a positive impact on individuals' understanding of the target item. Dialogue is thought to enhance language learning, although some questions were raised but left unsolved as was the case in Nassaji and Tian's (2010) study. This suggests that some learning opportunities were missed and CD may even have contributed to Hana's confusion. It is also noteworthy that some missed learning opportunities occurred even in LREs with correct answers. The missed learning opportunities may result from participants being insufficiently well prepared to arrive at a constructive discussion regarding the article system. This implies the importance of "learners' readiness to collaborate" (Baleghizadeh, 2009, p. 7), without which it may turn out that "interaction leads to noticing but not to acquisition" (Kuiken & Vedder, 2002, p. 354). For optimal learning the target should be within the ZPD (Vygotsky, 1978). In this study, text comprehension was within the participants' ZPD, but reformation of grammar concepts may not have been. The latter could have been better scaffolded using additional information resources, such as concept explanations or dictionaries.

The outcome of the collaborative work might have been hampered by lack of confidence, desire to save face, and other complex factors which have been noted among

Japanese learners (Takeuchi & Ueki, 2016). This underlines the importance of agency. Learners "bring to interactions their own personal histories replete with values, assumptions, beliefs, rights, duties, and obligations" (Donato, 2000, p. 46) which plays an important role in their engagement in learning tasks. Their agencies can also be negotiated and co-constructed through interaction (Pavlenko, 2002).

Through its in-depth exploration of CD this study has provided some insight into the experiences of learners working on an article cloze test using a shared L1. It shows that working collaboratively creates learning opportunities, that the participants' L1 has a role in L2 problem solving, and that tasks must fall within learners' ZPDs to help them co-construct new knowledge. The study also illustrates that test scores alone do not capture participants' learning experiences. Finally, the study shows that while CD can generate opportunities to stretch learners' linguistic abilities, it does not guarantee the mastery of complex grammatical items. Key areas needing further research are the influence of task type and learners' readiness to collaborate.

Acknowledgements

I would like to thank the anonymous reviewers and Takako Tanaka for their helpful and insightful comments on earlier drafts of this paper.

Notes

1. For the interaction pattern, this study follows Storch (2002), who defines collaborative interaction as one in which "a pair work[s] together on all parts of the task and where learners are willing to offer and engage with each other's ideas" (p. 128).

About the Author

Yu Tomiwa is an English language teacher at Todaiji Junior and Senior High School, Nara, Japan, and PhD student at Doshisha University. Her main research interest lies in the area of learner interaction and second language learning.

References

Ammar, A., & Hassan, R. M. (2018). Talking it through: Collaborative dialogue and second language learning. *Language Learning*, *68*(1), 46-82. https://doi.org/10.1111/lang.12254

Anton, M., & DiCamilla, F. (1999). Socio-cognitive functions of L1 collaborative interaction in the L2 classroom. *The Modern Language Journal*, *83*(2), 233-247. https://doi.org/10.3138/cmlr.54.3.314

Baleghizadeh, S. (2009). Investigating the effectiveness of pair work on a conversational cloze task in EFL classes. *TESL Reporter*, *42*(2), 1-12. Retrieved from https://ojs.lib.byu.edu/spc/index.php/TESL/

Baleghizadeh, S. (2010). The impact of peer interaction on an editing activity in EFL classes. *JLTR*, *1*(5), 727. https://doi.org/10.4304/jltr.1.5.721-727

Butler, Y. G. (2002). Second language learners' theories on the use of English articles: An analysis of the metalingusitic knowledge used by Japanese students in acquiring the English article system. *Studies in Second Language Acquisition*, *24*(3), 451-480. https://doi.org/10.1017/s0272263102003042

Dekeyser, R. M. (2005). What makes learning second-language grammar difficult? A review of issues. *Language Learning*, *55*(S1), 1-25. https://doi.org/10.1111/j.0023-8333.2005.00294.x

Donato, R. (1994). Collective scaffolding in second language learning. In J. P. Lantolf & G. Appel (Eds.), *Vygotskian approaches to second language research* (pp. 33-56). Norwood, NJ: Ablex.

Donato, R. (2000). Sociocultural contributions to understanding the foreign and second language classroom. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 27-50). Oxford: Oxford University Press.

Japan Association of College English Teachers (Ed.). (2003). *JACET list of 8000 basic words*. Tokyo, Japan: JACET.

Kuiken, F., & Vedder, I. (2002). The effect of interaction in acquiring the grammar of a second language. *International Journal of Educational Research, 37*(3-4), 343-358. https://doi.org/10.1016/S0883-0355(03)00009-0

Lantolf, J. P. (2007). Conceptual knowledge and instructed second language learning: A sociocultural perspective. In S. Fotos & H. Nassaji (Eds.), *Form focused instruction and teachers education: Studies in honour of Rod Ellis* (pp. 35-54). Oxford: Oxford University Press.

Lapkin, S., Swain, M., & Knouzi, I. (2008). French as a second language university students learn the grammatical concept of voice: study design, materials development and pilot data. In J. P. Lantolf & M. E. Poehner (Eds.), *Sociocultural theory and the teaching of second languages* (pp. 228-255). London: Equinox

Master, P. (1997). The English article system: Acquisition, function, and pedagogy. *System, 25*(2), 215-232. https://doi.org/10.1016/S0346-251X(97)00010-9

Nassaji, H., & Tian, J. (2010). Collaborative and individual output tasks and their effects on learning English phrasal verbs. *Language Teaching Research, 14*(4), 397-419. https://doi.org/10.1177/1362168810375364

Ohta, A. S. (2001). *Second language acquisition processes in the classroom : learning Japanese*. Mahwah, N.J.: Lawrence Erlbaum.

Pavlenko, A. (2002). Poststructuralist approaches to the study of social factors in second language learning and use. In V. Cook (Ed.), *Portraits of the L2 user* (pp. 277-302). Clevedon, UK: Multilingual Matters.

Sato, M., & Ballinger, S. (2016). Understanding peer interaction: Research synthesis and directions. In M. Sato & S. Ballinger (Eds.), *Peer interaction and second language learning: Pedagogical potential and research agenda* (pp. 1–30). Amsterdam: John Benjamins.

Scott, V. M., & Fuente, M. J. D. L. (2008). What's the problem? L2 learners' use of the L1 during consciousness-raising, form-focused tasks. *Modern Language Journal, 92*(1), 100-113. https://doi.org/10.1111/j.1540-4781.2008.00689.x

Shiina, T. (2007). *Native kankaku ga shizen ni minitsuku Eigo no kanshi drill [English article drills to acquire the sense of native speakers']*. Tokyo: The Japan Times.

Storch, N. (1999). Are two heads better than one? Pair work and grammatical accuracy. *System, 27*(3), 363-374. https://doi.org/10.1016/S0346-251X(99)00031-7

Storch, N. (2002). Patterns of interaction in ESL pair work. *Language Learning*, *52*(1), 119-158. https://doi.org/10.1111/1467-9922.00179

Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, *14*(3), 153-173.

Storch, N. (2007). Investigating the merits of pair work on a text editing task in ESL classes. *Language Teaching Research, 11*(2), 143-159. https://doi.org/10.1177/1362168807074600

Storch, N. (2008). Metatalk in a pair work activity: Level of engagement and implications for language development. *Language Awareness*, *17*(2), 95-114. https://doi.org/10.2167/la431.0

Storch, N. (2013). *Collaborative writing in L2 classrooms*. Bristol: Multilingual Matters.

Storch, N., & Wigglesworth, G. (2003). Is there a role for the use of the L1 in an L2 setting? *TESOL Quarterly*, *37*(4), 760-770. https://doi.org/10.2307/3588224

Swain, M. (1997). Collaborative dialogue: Its contribution to second language learning. *Revista Canaria de Estudis Ingleses*, *34*, 115-132.

Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 97-114). Oxford: Oxford University Press.

Swain, M. (2006). Languaging, agency and collaboration in advanced second language proficiency. In H. Byres (Ed.), *Advanced language learning: The contribution of Halliday and Vygotsky* (pp. 95-108). London: Continuum.

Swain, M., & Lapkin, S. (1998). Interaction and second language learning: Two adolescent French immersion students working together. *Modern Language Journal, 82*(3), 320-337. https://doi.org/10.1111/j.1540-4781.1998.tb01209.x

Takeuchi, O., & Ueki, M. (2016). Kyodo writing katsudo ga gakushusha no meta-ninchi, ninchi, joi ni ataeru eikyo ni tsuite [The impact of collaborative writing activities on learner cognition, cognition and affection]. Retrieved from https://www.eiken.or.jp/center_for_research/pdf/bulletin/vol99/vol_99_55.pdf

Tanaka, J. (2013). A multivariate analysis of L2 English article use by article-less L1 learners. In E. Voss, S. D. Tai, & Z. Li (Eds.), *Selected proceedings of the 2011 second language research Forum* (pp. 139-147). Somerville, MA: Cascadilla Proceedings Project.

van Lier, L. (1996). *Interaction in the language curriculum: Awareness, autonomy and authenticity*. London: Longman.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Yamada, J., & Matsuura, N. (1982). The use of the English article among Japanese students. *RELC Journal, 13,* 50-63. https://doi.org/10.1177/003368828201300104

Appendix (Adapted from Shiina, 2007)

Bamboozled by buzzwords

Are you bewildered by words you hear or read every day? Does it sometimes seem as if the language is being buried by (1) technological doublespeak? You may feel you are less able to do your job, buy (2) computer or read (3) manual because (4) whole swaths of English are now so incomprehensible they might as well be in Sanskrit? If so, you are not alone, according to (5) U.S.-based world-tracking outfit called the Global Language Monitor (GLM), which recently released (6) list of (7) top 10 "most confusing, yet widely used, high-tech buzzwords."

No. 1 on (8) list is not even (9) word, but (10) bunch of letters: (11) familiar HTTP. Most of us see this all the time at the start of (12) Web addresses but have no idea that it stands for (13) Hyper Text Transfer Protocol.

The same goes for the other top-ranking entries on GLM's list. No. 2 is Voice Over IP or VoIP, short for Voice over Internet Protocol, which in plain English means (14) ability to talk on (15) phone over (16) Internet.

Or take buzzword No. 3: megapixel. "A really big pixel" is GLM's helpful definition, setting up (17) obvious question: "OK, what's a pixel?"

It all just goes to prove GLM's argument: that (18) high-tech field remains (19) source of (20) great ideas and, at the same time, (21) mass confusion. The industry, with rare exceptions, has never mastered (22) basics of translating (23) new products and services into (24) everyday language."

Does this matter? It shouldn't. Historically, (25) technology and (26) language have not always been so at odds. When telephones and cars and planes were invented, people used them perfectly well without necessarily knowing (27) language of how they

worked. There were new words associated with them, of course, but somehow they posed no particular threat.

With a few shining exception—(28) Internet, World Wide Web, laptop—the latest high-tech vocabulary is not nearly so user-friendly. Nor is it always a matter of fancy acronyms and made-up words. In many cases, (29) solid English words we thought we knew have been taken over and forced into (30) new meanings that hardly seem to fit them.

Consider No. 4, 5, and 6 on (31) GLM list: plasma, robust and WORM. Plasma now refers less often to (32) blood products than to (33) kind of television screen. Robust isn't how you feel after you've taken your vitamins but how your product feels when it's running properly, and a WORM is not only a computer virus anymore, but (34) Write Once, Read Many file system used for (35) optical disk technology." But how many people know that?

(36) problem is that all these words are competing for our attention, pushing themselves into (37) center of the culture rather than staying put in the lab and the factory like (38) technological language of days gone by. That is why (39) GLM's playful list feels so liberating. Suddenly, it's all right to stop worrying and just say it: We neither know nor care what (40) HTTP stands for.

Answers:
(1) 0 (2) a (3) a (4) 0 (5) a (6) a (7) the (8) the (9) a (10) a (11) the (12) 0 (13) 0 (14) the (15) the (16) the (17) the (18) the (19) a (20) 0 (21) 0 (22) the (23) 0 (24) 0 (25) 0 (26) 0 (27) the (28) 0 (29) 0 (30) 0 (31) the (32) 0 (33) a (34) a (35) 0 (36) the (37) the (38) the (39) the (40) 0