

Feature Article: Makoto Abe

Scaffolding and knowledge co-construction in collaborative L2 writing

ライティングの共同学習におけるスキヤフォールディングと知識の共構成

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英語ライティングの指導は複雑で時間を要します。学生の自律的な学習を促すためには、教師が英作文を添削してあげるだけでは不足かもしれません。学生の自主学習をサポートするために、私は2つのことを考えました。一つは学生に模範文を渡すことです。自分の書いた英作文と模範文を比較することで学生はいろいろな言語的な側面に気づき、ライティングの技術を向上させることができます。もう一つは友人と一緒に学ぶ環境を用意することです。同じ目標をもった学習者が共に英作文を書き、模範文と比較することで、言語への気づきだけでなく、対話を通して様々な知識や理解を共に作り上げていくことができると考えたのです。

本研究は日本の大学に通う2組4人の大学生による英語の共同学習のプロセスを報告します。題材となったライティングタスクは英検準1級の面接試験で使われる問題です。結果は、学生は模範文との比較をすることで、語彙や文法といった言語的な側面だけでなく、タスクがどのような解答を求めているのかという内容的な側面にまで細かくディスカッションできたことを示しています。本研究はさらに、習熟度に差のあるペアが自分の個性を發揮しながら、共にライティングタスクに関する知識を深めていくプロセスを分析、報告しています。



Introduction

This paper explores the interaction between student peers as a source of learning support for each other in the context of constructing a narrative based on a picture-story. There are various feedback tools in L2 writing instruction. Traditionally, teachers' correction was regarded as superior to peer-feedback until the late eighties, when research studies started to show that students do not necessarily learn from having their errors corrected directly by a teacher. (Ferris, 2003, p. 59). As the view of language education has changed from favouring explicit teaching to more implicit support, English teachers need to think about the most effective ways of supporting students to learn L2 writing autonomously. The most accessible resource may be a model text in textbooks for L2 writing as a model text "encourages and guides learners to explore the key lexical, grammatical, and rhetorical features of a text and to use this knowledge to construct their own examples of the genre" (Hyland, 2002, p. 88). Abe (2008) found

that a model text gave opportunities to learners to critically reflect upon their own writing, notice shortcomings, and work out solutions. However, the lower the level of the learner, the less they seemed to be able to utilize the model and derive any benefit from it. Combining a model text with near-peer feedback might be a helpful way to scaffold the novice writers' understanding of the model. In this paper we will explore the dynamics of noticing as they evolved between two different pairs: one a high-level learner with a low level learner, the other two high-level learners.

Collaborative learning: patterns of pair interaction

The use of pair work in L2 instructional settings rests on Vygotsky's (1978) socio-cultural perspective arguing that human cognition develops through social interaction. According to Vygotsky, there is a gap between what individuals can do by themselves and what they cannot do even with help (*Zone of Proximal Development*, or *ZPD*). Researchers such as Wood, Bruner, and Ross (1976) called support from adults or more knowledgeable others in the ZPD "scaffolding". Based on Vygotsky's theory, his followers have argued that knowledge is constructed not in our minds but through social interaction with others. This study presents detailed analysis of the process of scaffolding that occurs in pair interaction and the co-construction of knowledge between two individuals.

A number of recent studies have demonstrated the positive impact of peer-peer interaction on L2 writing (e.g., De Guerrero & Villamil, 2000; DiCamila & Anton, 1997; Swain & Lapkin, 2002). As far as L2 writing is concerned, Donato (1994) found that collaborative writing enables L2 learners to jointly pool their knowledge to resolve their language problems.

Storch (2002) investigated the nature of peer interaction in an ESL university-level class. Using two indexes, equality (i.e., equal distribution of turns, or equal contribution to the task) and mutuality (i.e., reciprocity of turn-takings), she identified four distinctive patterns of pair interaction: *collaborative*, *expert/novice*, *dominant/dominant*, and *dominant/passive*. *Collaborative* interaction consists of highly reciprocal turn-takings and equal contribution to their joint activity, where two learners share the ideas, discuss them, and are equally engaged in the same task. On the other hand, although *expert/novice* pairs are characterized by mutual interaction like *collaborative* pairs, one more knowledgeable learner leads the whole activity and continuously invites the other less knowledgeable peer's contribution. Interaction in *dominant/dominant* and *dominant/passive* pairs is prone to lack of reciprocity. *Dominant/dominant* refers to an activity carried out with little negotiation, while *dominant/passive* consists of an activity solely done by one participant with little contribution from the other participant. Storch (2002) demonstrated that *collaborative* and *expert/novice* patterns result in more opportunities for transfer, co-construction, and extension of knowledge about L2 writing.

From the perspective of developmental psychology, Granott (1993, 2005) specified nine patterns of pair interaction using two indexes: degree of collaboration and relative expertise (symmetric vs. asymmetric). This conceptual model was similar to that of Storch (2002) in that pairs with more "mutuality" were more *collaborative* and pairs with less "equality" were referred to as *expert/novice* in Storch (2002). Granott (1993) defined interactional patterns between two collaborative participants with symmetric expertise as *mutual collaboration* and asymmetric expertise *scaffolding*

(*collaborative* and *expert/novice* patterns respectively in Storch's study). However, Grannot's (2005) comprehensive review of scaffolding suggests that pair interaction with symmetric expertise also create a ZPD and scaffolding.

Based on the literature review, the two research questions explored in this study are as follows:

1. What interactional patterns are identified when a particular pair of Japanese EFL learners compares their own composition with a model text?
2. Can we identify any difference in the nature of scaffolding between different partners with interactional patterns?

Methodology

Data collection procedure

The participants were four Japanese EFL university students (all females – Aya, Eri, Sae, and Ai, all names are pseudonyms) studying English. The students' majors were English, early-childhood education, and intercultural studies. Aya, Eri, and Sae held 2nd and Ai held 3rd grades of *STEP Eiken*. In this study, the 2nd grade *Eiken* holders were regarded as intermediate learners and the 3rd grade holder as a beginning learner. The students, who were on friendly terms with each other, paired up into two dyads consisting of a high-high dyad (Aya and Eri) and a high-low dyad (Sae and Ai).

The study was conducted in a small, quiet self-study room, which the participants were accustomed to using to prepare for the *STEP Eiken* test. On this occasion, they were asked to complete a collaborative writing task, which was a new experience for all of them. The data collection procedure consisted of three stages: writing, comparing, and revising. In the writing task, the students were asked to

describe what was going on in a four-framed picture (see Appendix A). The task was adopted from a speaking task from the textbook for the *STEP Eiken* test. Each pair of students was asked to complete the writing task while discussing it with each other. Both students were asked to hold a pen to avoid unilateral completion of the task.

In the comparing stage, each pair of students was provided with a model text, the sample answer for the task contained in the same textbook (see Appendix B). Then, they were asked to discuss what they noticed when comparing their own composition with the model text. As the participants' speaking skills were not very high, they spoke Japanese in their discussion. After this, the participants in each pair were asked to revise their text, individually, based on what they noticed through discussion with their partner.

Data analysis

The students' interaction in the comparing stage was tape-recorded, transcribed, and segmented into language-related episodes (LREs). One LRE is equivalent to a segment of the conversation discussing a particular feature of the text, such as the use of a particular word or verb tense. Each LRE was translated and sorted into three categories: those related to vocabulary (lexical), those related to grammar (form), and those related to content. In order to measure the quantitative aspects of "mutuality" and "equality" seen in the participants' interaction, frequency of LREs initiated by each student was also measured, along with the number of turns (per LRE), and the length of speech (number of words) were also measured. Excerpt 1 shows a lexical LRE consisting of two turns by Aya and Eri. Words that are underlined represent phrases used in the model text.

Excerpt 1

Aya: The model says “because someone”.

Eri: Oh, “someone”.

Aya: What did we write instead?

Eri: It’s “unknown people”. I think it is OK.

This episode implies that Aya and Eri noticed lexical aspects by comparing their original composition with the model text. So, one instance of “noticing” can be defined as equivalent to a “language-related episode” for this study. Below we will see how the interactional patterns of the two pairs relate to Storch’s patterns and explore the scaffolding in each type of interactional pattern.

Findings

Students paired high-high: a collaborative pair

First, the data was globally analyzed based on Storch’s (2002) four patterns of dyadic interaction (*collaborative, expert/novice, dominant/dominant, dominant/passive*). As a result of the analysis, Dyad 1 (high-high) was labeled as *collaborative* and Dyad 2 (high-low) as *expert/novice* pairs.

Excerpt 2 is an example of LREs produced by Dyad 1, Aya and Eri (high-high pair). The two participants continuously provided each other with comments and responded to them using phatic utterances such as “yeah”. This cohesiveness between their turns is one of the most important characteristics of collaborative pair work in that it enables interaction to be more mutual (Storch, 2002). The number of turns was similar between the two students as Table 1 shows, which indicated the high equality of contribution to the pair work.

Excerpt 2

L 14Aya: The model says “because someone”.

15Eri: Oh, “someone”.

16Aya: What did we write instead?

17Eri: It’s “unknown people”. I think it is Ok.

L 18Aya: “shutter”, yeah it is “shutter”. I thought that “shutter” is Japanese English.

19Eri: I see. But it seems “shutter” is the most appropriate word describing this picture.

C 20Aya: yeah. Then, oh...yeah, “it was not the first time” the model says. We didn’t mention this.

21Eri: Yeah. We should have... Maybe it is not such a big difference.

22Aya: Hmmm...

Notes. L=lexical LRE; F=Form LRE; C=content LRE.

Table 1

The frequency of LREs, turns, and the length of speech in each dyadic interaction

	Dyad 1 (H-H) Aya - Eri	Dyad 2 (H-L) Sae - Ai
LREs (lexical/ form/content)	22 (11/6/5)	24 (10/2/12)
Turns	58 (30-28)	66 (35-31)
Length of speech (n)	1035 (581-454)	1738 (1254-484)
Length of speech (%)	(56-44)	(72-28)

Notes. H=high; L=low.

Students paired high-low: expert/novice pair

Excerpt 3 shows an example of interaction by Sae and Ai (high-low pair), who were labeled an *expert/novice* pair. As is obvious from both Excerpt 3 and Table 1, Sae’s turns were more frequent and the length of her speech was longer than Ai’s.

Excerpt 3

C 6 Sae: We missed so much information which should be included in our writing. There were two solutions, right? We wrote only one.

7 Ai: Two? Yeah, yeah.

L 8 Sae: How about vocabulary?

9 Ai: Vocabulary? "Graffiti"? Oh, it is "graffiti".

10Sae: Yeah, we should have used "graffiti". We should have come up with this word. What did we say?

11Ai: "draw"...

12Sae: See? The vocabulary is better. It often rephrases words. Here it says "picture" but here it says "graffiti." We repeated "drawing pictures, drawing pictures, drawing pictures" so many times. Too much, isn't it?

13Ai: Yeah. I see.

Scaffolding and knowledge co-construction: collaborative vs. expert/novice

The results revealed that both *collaborative* and *expert/novice* pairs were willing to actively exchange their own ideas so as to co-construct and share their knowledge. In this section, I will closely examine how the two participants were providing each other with scaffolding. The following excerpt is from Dyad 2, Sae and Ai (high-low pair).

Excerpt 4

C 16Ai: We wrote "everyone was happy". But the model doesn't.

17Sae: I see. "Everyone was happy"... This is their emotion, right? The model writes only what is going on in these pictures. Maybe we shouldn't use emotional expressions in this kind of task.

18Ai: Really?

19Sae: Maybe. I don't know...
(omission)

L 33Sae: Well, we repeated the same words many times, didn't we? The model used more varied vocabulary. For example, here it says "painted", and it says "draw".

34Ai: Yeah.

F 35Sae: Here, it says "this gave her an idea". We wrote "she found a good idea". Non-human subjects can be used like this sentence.

36Ai: Non-human subject.

F 37Sae: Here, again, it says "they were upset". Something "upset" these people, you know? Same thing as non-human subject.

38Ai: Is "upset" a verb?

39Sae: Yeah, it is a passive sentence.

40Ai: It looks like an adjective.

41Sae: Maybe, yeah. It can be used as an adjective, too.

C 42Ai: But it's emotion. Same as "happy"

43Sae: Right! So, we can use emotional expressions in descriptive writing!

In Excerpt 4 Sae and Ai produced content LRE questioning whether or not "emotional expressions (*kanjo hyogen*)" such as "happy" can be used in a descriptive writing task. This was their common language problem which they failed to figure out in the first content LRE (lines 16-19) but successfully solved afterward (lines 42-43). The second, third, and fourth LREs (lines 33-43) in Excerpt 4 were connected. The lexical LRE stimulated the following form LRE in which Sae noticed that use of "non-human subjects" in their composition would lead to "lexical variety". This and following form LREs were directly related to a common point of "non-human subjects" and Ai posed the question whether the word "upset" is a verb. Ai's question

triggered the more interactive form LRE, which finally led to the following content LRE where Ai deduced that it is possible to use the word “happy” as an emotional expression. Here, the important thing is that, despite the smaller contribution to the task, Ai played an important role in the dyadic interaction. She replied to her partner, posed questions, and sorted out her partner’s explanations, and noticed something that her partner failed to notice by remembering their common language problem. Sae led for the most part in the task, attempting to involve her partner in the interaction, while Ai contributed to their joint work by letting her partner notice what she could not notice and attempting to extrapolate general points from their ideas. In the revising stages, both Sae and Ai revised their texts in accordance with what they discussed (e.g., used non-human subjects) and agreed on (e.g., used “happy”) in many parts.

The other pair, Aya and Eri produced a substantial number of LREs with a number of cohesive turn-takings and phatic utterances. In spite of the high mutuality of turn-takings and equality of contribution, their interactions produced LREs which were relatively disconnected from each other. The first half (lines 14-27) of Excerpt 5 shows that although it seems that the two participants were actively transferring their knowledge, their LREs were not closely related to each other and there was no sign of co-constructed knowledge. Although the second half has the content LRE which reflects their language problem accompanying descriptive writing tasks (lines 55-58), there was no resolution between them.

Excerpt 5

L 14Aya: The model says “because someone”.

15Eri: Oh, “someone”.

16Aya: What did we write instead?

17Eri: It’s “unknown people”. I think it is Ok.

L 18Aya: “shutter”, yeah it is “shutter”. I thought that the “shutter” is Japanese English.

19Eri: I see. But it seems “shutter” is the most appropriate word describing this picture.

C 20Aya: yeah. Then, oh...yeah, “it was not the first time” the model says. We didn’t mention this.

21Eri: Yeah. We should have... Maybe it is not such a big difference.

22Aya: Hmmm...

L 23Eri: This model uses “discussion”, here.

24Aya: Yeah.

25Eri: I think it is okay to say “talk about”?

26Aya: Yeah, but don’t you think “discussion” sounds appropriate when describing this kind of meeting.

27Eri: Yeah, you are right. “Discussion” is better, here.

(omission)

C 51Aya: “the shop owners were talking”, yeah, yeah, here, wait, it says “two suggestions writing on the board” We didn’t write this information.

52Eri: Look how the model describes it... We couldn’t do this.

C 53Aya: And here, “the introduction of security camera”. We should have written more.

54Eri: We wrote just what...oh, we just didn’t write what the picture says in words.

C 55Aya: The model says “the woman was at home reading a book.”

56Eri: That kind of information is not necessary. It is too detailed.

57Aya: But, maybe, in a picture-describing task, we have to write everything in the picture.

58Eri: Really? Who knows it is a “book”? It may be a magazine.

From this, we can see that Eri and Aya, unlike Sae and Ai, had difficulty assigning roles in a way that would make their collaboration productive. Although they noticed more varied aspects of L2 writing than Sae and Ai (see Table 1), they failed to share a common understanding about what should be done to complete the L2 writing task. From a different perspective, excessive attention to linguistic aspects (lexical and form) may have been an obstacle to sharing and co-constructing their common knowledge. Although several refinements regarding linguistic aspects in their revised texts were added, the basic content of their composition was untouched.

Discussion

The results show that the dynamics of noticing various aspects of L2 writing in dyadic interaction enable students not only to notice the gap between their interlanguage and target language but also to provide each other with scaffolding triggering co-construction of their common knowledge. Unlike Storch's (2002) study conducted in a classroom setting, only two interactional patterns, *collaborative* and *expert/novice*, were detected in this study. That may be partly because this study was conducted in a tutoring context, where the students were actively involved in the task. The high "mutuality" of their interaction may also be attributed to a particular cultural element, namely, how Japanese people typically behave in pair work, while the observations in Storch (2002) were conducted in an ESL class with students from various cultural backgrounds. On the other hand, the dimension of "equality" of contribution in their interaction can be explained by the relative expertise as Granott (1993) suggests, at least in this study, where Dyad 1

(high-high) can be defined as *collaborative* and Dyad 2 (high-low) as *expert/novice* pairs.

Focusing on the similarity of indexes adopted by Storch (2002) – mutuality and equality- and Grannot (1993) – degree of collaboration and relative expertise, this study attempted to reveal what Storch's model does not explain. In these two case studies, all the participants indeed shared a common activity, observation, and problems, but the *collaborative* pair may have been constructing their understanding independently of each other. This indicates that the quantitative data such as frequency of LREs, turns, length of speech cannot necessarily determine a particular interactional pattern. Hence, the nature of these patterns should be closely analyzed by referring to what exactly is going on in their pair work.

In the *expert/novice* pair, both participants benefit from the interaction with the partner. That seems to be consistent with the finding of Dishon and O'Leary (1984) who claim that group work in which heterogeneous participants are engaged has more possibilities for collaborative learning than a group consisting of homogeneous participants. The participants' social roles which include initiating discussion, posing questions, explaining complicated issues, putting ideas together, and monitoring their own strategies of L2 writing may result from the heterogeneity between participants in a pair. As greater proficiency in L2 skills does not necessarily mean greater proficiency in other social skills, it is important for English teachers to take students' gender, personality, power relations, previous interactions, and willingness to communicate into account in considering the feasibility of

introducing pair work. Close examination of students' interactional moves enables English teachers to grasp students' levels of understanding as well as their degree of collaborative orientation. Thus, collecting protocol data such as students' collaborative dialogues is significant not only for research purposes but for pedagogical reasons too.

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Appendix A

You have **one minute** to prepare.

This is a story about a shop owner who wanted to deal with a graffiti problem.

You have **two minutes** to narrate the story.

Your story should begin with the following sentence:

One day, a woman was in front of her shop talking to another shop owner.



From the pre first grade STEP Test in Practical English Proficiency, 2009. Used with permission from the Society for Testing English Proficiency, Inc.

Appendix B

Sample answer

One day, a woman was in front of her shop talking to another shop owner. They were upset because someone had sprayed graffiti on their shops' shutters. The woman complained to the other shop owner that it was not the first time it had happened. Later, at a shop-owners meeting, there was a discussion about possible solutions to the graffiti problem on the shopping street. The shop owners were talking about two suggestions written on the board – the introduction of security cameras or street patrols – but could not decide what to do. That night, the woman was at home reading a book. She was sitting beside her son, who was drawing a picture of a house. This gave her an idea about how to solve the graffiti problem. A month later, on the shopping street, the woman and the other shop owner looked on as some young children painted pictures of animals on the shutters of the shops.

