LANGUAGE-RELATED EPISODES IN LEARNER-NATIVE SPEAKER COLLABORATIVE WRITING INTERACTION

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Abstract

Synchronous online writing platforms (e.g. Google Doc) have provided a dynamic approach to deliver peer feedback and negotiation for students who work on group projects. Previous research on collaborative writing and language learning has tended to discuss collaboration among second language learners in classroom settings, with a focus on either their editing history or collaborative dialogue. This paper considers both the oral and written interaction in the collaborative writing between native speakers (NS) of English and high proficiency nonnative speakers (NNS) of English on the synchronous writing platform Google Doc. This paper uses Language-Related Episodes (LREs) to analyze the patterns of interaction between the participants during their collaboration on a shared essay. Follow-up questionnaires and interviews with participants provided insight into their perception of their collaboration in the context of online technologies. The results show that 1) there were more Lexical LREs during the oral dialogue, while more Form and Mechanical LREs in written form on the Google platform, 2) NNSs reported to benefit more from the feedback on their vocabulary and expressions, while NSs more from the feedback on organization and ideas, and 3) factors such as power relationship and partner's openness to correction influenced the interaction in collaborative writing.

1 Introduction

Due to a growing population of international students in English-medium instruction universities, and increased popularity of group work and collaborative learning in many disciplines across higher education curricula, it is common for collaborative groups to consist of both Native Speaker of English (NS) and Nonnative Speakers of English (NNS) students (Cheng, 2013). Previous research has shown that learners have been exposed to the opportunity to learn from each other by collaborating with others in the tasks of group work. Leki's (2001) study, however, found that students often "redefined the task from one that would provide an opportunity to learn or practice to a job that merely had to get done, with the focus then being on how to get it done with the greatest efficiency and least expenditure of time and energy, usually by splitting up the tasks and never reintegrating the sections" (p.59). Leki's study indicated that it is equally important to look into the interactions as well as the writing products in collaborative projects.

Collaborative writing (CW) research has gained prevalence in recent years. However, there is scant research on how students interact socially with peers to produce written texts through synchronous collaborative writing (SCW) technology (Yeh, 2014). The purpose of this paper is to investigate the interaction patterns in the collaborative writing between NS and NNS in a synchronous writing platform. Since the online writing platform ensures the participants'

ownership of the written text synchronously, I argue that the exchange of feedback among students writing on Google Doc allows them to notice content, linguistic, and organizational problems in their writing and thus leads to their meaning negotiation and grammatical error correction.

2 Literature review

2.1 Collaborative writing

Research has noted the importance of collaborative writing studies in the field of language learning. Ede and Lunsford (1990) proposed that collaborative writing should include active task engagement by two or more students during the process of writing, which creates a shared ownership to plan and produce ideas for a single written text. In this sense, collaborative writing tasks may be more conducive to second language learning than solitary writing (Fernández Dobao, 2012a). The literature has noted many benefits of collaborative writing. The theoretical basis for these projects largely rests on the work of Vygotsky (1978), whose sociocultural theory establishes learning as a fundamentally social experience and provides a rationale for the use of interaction in the classroom. The sociocultural theory values interaction between an expert (e.g., teacher, native speaker) and the novice learner as well as peer interactions. SLA researchers, informed by sociocultural theory, have focused on the nature of the scaffolding and the use of language during such interaction (Storch 2012, p. 15). Numerous studies have shown that learners scaffold each other during collaborative activities in a wide variety of L2 contexts (Suzuki & Itagaki, 2007; Swain & Lapkin, 2001; Watanabe & Swain, 2007, 2008). For instance, the findings from Wigglesworth and Storch's (2009) study on the role of collaboration and interaction in composing processes suggested that pooled knowledge acts as an enabler in collaborative writing activities, which encourages learners to produce more accurate texts as a result of shared knowledge.

The research on collaborative writing has gained an increased popularity in the advent of online collaborative platforms (Aydın & Yıldız, 2014; Kessler, 2009; Levy & Stockwell, 2006). The research on online collaborative writing can be divided into three strands. The first line of inquiry has examined students' wiki writing and revising behavior. Yang's (2014) study examined the process of collaborative writing of three groups of ESL students at two Canadian business schools over one semester. He found that L1 background, L2 proficiency, and group rules appeared to either facilitate or constrain the process of collaborative writing across the three groups. The results confirmed Swain's (2006, 2010) statement that the extent of success of collaborative writing is found to be greatly influenced by the language proficiency of team members, the nature of collaborative writing tasks, and interaction patterns. Neumann and McDonough (2015) found that although structured collaborative prewriting tasks elicited student talk about content and organization, there was only a moderate relationship between these prewriting discussions and the students' written texts. In particular, the groups where students merely took turns to state their ideas tended to stick to their own individual ideas than the groups where members gave each other feedback. Their study also confirmed Shi's (1998) study, which found that students generated a lot of ideas but did not spend as much time evaluating them and never talked about ordering them.

The second research strand has focused on interaction patterns before or during collaborative wiki writing. Bradley, Linstroem, and Rystedt (2010) detected three distinct patterns of

interaction in an ESP collaborative writing course: a lack of visible interaction, where only one individual posted a full piece of text; cooperation, where individuals worked in a parallel fashion; and collaboration, where individuals engaged with each other's ideas and jointly wrote the essay. Yet their study examined the interaction more from the writing product perspective. Research on face-to-face collaborative writing (e.g., Storch, 2002; Watanabe, 2008) shows that interaction patterns influence students' writing performance and their learning outcomes. Storch (2002) conducted a collaborative writing project with ESL college students and found four interaction patterns: collaborative, dominant/dominant, dominant/passive, and expert/novice. Storch explained the four patterns appeared as a result of equality and mutuality (Damon & Phelps, 1989), where equality refers to authority and mutuality refers to the level of engagement with each other's contribution. Her study reported that the pairs displaying a collaborative stance (collaborative and expert/novice) showed evidence of more uptake and more transfer of knowledge in subsequent individual work than the pairs exhibiting the remaining two patterns (dominant/dominant and dominant/passive). In Li and Kim's (2016) study on using Wikispaces in a university EAP course, the authors first used the three distinctive tools (i.e. Discussion, Comment, and History) in the online writing platform to examine the writing process. Their study recognized six scaffolding strategies students used to scaffold each other in collaborative wiki writing tasks: affective involvement, contingent responsivity, direction maintenance, instructing, intersubjectivity, and recruiting interest. Yeh's (2014) study found that through collaborative dialogues, students benefitted from text-based synchronous communication, such as clarifying their linguistic misconceptions, and receiving immediate feedback to help resolve their writing problems. The findings suggest that students could be provided with more opportunities for collaborative dialogues during the entire writing process, including the stages of generating ideas, writing reaction essays, and editing.

The third strand of research concerns the learners' perception of collaborative writing. Research in this line shows that most students hold positive attitude towards the impact of collaborative writing on their language skills (Fernández Dobao & Blum, 2013; Kwon, 2015; Shehadeh, 2011; Storch, 2005). In Kwon's (2015) 8-week study of EFL student collaborative writing, for instance, students mostly reported an improvement in their English accuracy because of collaborative writing and peer feedback. However, Kwon was not sure whether the improved accuracy could also be the result of his grammar instruction. Nevertheless，studies in this line reported that the L2 learners also showed concern for their lack of contribution and overly appropriation in collaborative writing tasks.

While the value and potential role of collaborative writing is well established in first language writing and ESL contexts (Storch, 2013), there is some uncertainty about how to implement collaborative writing tasks between NS and NNS, even though it is now common for collaborative groups in higher education to include both NS and NNS in the United States (Cheng, 2013). Previous research showed there is a power inequity in curricular activities that include both NS and NNS students (Cheng, 2013). The NS peers either consciously or subconsciously assumed the roles of experts and positioned NNS students marginally (Leki, 2001). In contrast, NNS were disadvantaged when interacting with NSE peers (Morita, 2004; Zhu, 2001). Research on collaborative writing among L1 writers and ESL learners has been well established. Few studies have investigated how NS-NNSs interact in collaborative writing tasks and how they perceive their interaction and power relation in the same task.

2.2 Language-related episodes (LRE)

In research on collaborative writing, the unit of analysis tends to be a language-related episode (LRE) (Storch, 2013). According to Swain and Lapkin's (2002) extended definition, LREs are a group of utterances or any segments of dialog "in which the group members are talking about the language they have produced or are producing, correct themselves or others, or question or reflect on their language use (p.292)". An LRE is a segment in the learners' talk where learners deliberate about language while trying to complete the task (Swain, 1998; Swain & Lapkin, 1995, 2001). That is, in these episodes learners focus their attention explicitly on language use. In Storch's (2013) book, she categories LREs in collaborative writing into 5 kinds: Form-based LRE, Lexis-based LRE, Mechanical LREs, Discourse focused LRE, and Incorrectly resolved LRE. The LRE does seem to provide a useful unit of analysis for learners' deliberations about language. In her book, Storch (2013) showed that the writing phase of the task elicited more LREs than the speaking only phase since the former one tend to stimulate more lengthy discussions about language than the latter one. Insight into the interaction patterns in the writing phase task and how this oral discussion influences learners' writing products is important to look at.

2.3 The present study

The focus of this study is to investigate what Language-Related Episodes may be spontaneously generated in Learner-Native interaction and what factors might affect the interaction patterns. Furthermore, although previous research was done in ESL contexts, most of the studies were conducted in language classroom settings. Excluding native speakers of English in research to some extent ignores the real situation in an ESL context where non-native speakers are taking classes in their majors or otherwise outside of language-specific classes, which is the goal of many (although not all) language learners in university-level ESL programs. Research on collaborative writing between native and non-native speakers is under developed.

This study was also conducted in the Google Doc environment, where the members of the participant pairs can see each other's feedback, correction, and revision, on their own screens synchronously. Inspired by both Amirkhiz et al.'s (2013) and Fernandez Dobao's (2012b) studies that used LREs as a unit of analysis in studies of collaborative writing on Wikis, I hypothesized that the technology could make the Language-related Episodes more visible and focus. The research questions of this study are as follows:

1. What are the Language-Related Episodes (LREs) of native and non-native pairs like in the course of collaborative writing?
2. How do students perceive group work in terms of learning opportunities and collaboration?

3 Methodology

3.1 Participants

The study included 6 native speakers of English and 6 learners of English with various L1 backgrounds. These participants were recruited through my personal contacts. All but one pair of participants already knew their writer partners before the study began. Two pairs of the participants were dating or married, in closer relationships than the rest of the pairs. Most of the participants were pursuing graduate degrees in various fields, including Applied Linguistics, Anthropology, Fine Art, and Oceanography, in the United States. The biodata of the participants are provided in Table 1 (the participants' pseudonyms are given):

Table 1. Characteristics of group participants

Pair No.	Pseudonym	Gender	English Proficiency	Years in English-speaking countries	First Language	Relationship
1	Jung	F	Advanced	1	Korean	Couple
	Ben	M	Native	28	English	
2	Mukti	F	Intermediate	1	Urdu	Acquaintance
	Ashley	F	Native	27	English	
3	Junko	F	Advanced	0.5	Japanese	Never met before
	Beth	F	Native	28	English	
4	Mo	F	Intermediate	2	Thai	Acquaintance
	Megan	F	Native	24	English	
5	Taro	M	Advanced	2	Japanese	Acquaintance
	Kate	F	Native	33	English	
6	Ming	F	Advanced	7	Mandarin	Couple
	Chris	M	native	21	English	

3.2 Instrumentation

3.2.1 The writing prompt

The writing prompt for the research came from the argumentative writing section of the IELTS exam. According to Hess' (2011) Cognitive Rigor Matrix for reading and writing, argumentative tasks were considered to be cognitively and linguistically more demanding than the informative task in general. A task that is more cognitively demanding requires more collaboration between the participants. The essay prompt was as follows:

> In most countries disabled people are not catered for adequately, e.g. buildings are often inappropriately designed. Governments rely too heavily on charities and voluntary organizations to provide assistance and funding. What further measures could be taken to assist disabled people? (IELTS Writing Task 2 Sample 713)

The participants were told to use as much time as needed to complete a 300-500 word essay on this topic. The prompt asked the participants to check with their partners to make sure the essay is complete, succinct and logical. They were allowed to discuss with their partners and comment, edit, or revise their partner's writing during the task.

3.2.2 The survey instrument

The questionnaire (See appendix B) was adapted from Aydin and Yildiz's (2014) study on collaborative EFL writing and revised to apply to both the nonnative and the native speaking participants in this study. The questionnaire included questions about their biodata background information, their attitude to this specific experiment, and their overall experience with the use of Google Doc and the efficacy of collaborative writing. There are 17 rating items on a five point Likert Scale.

3.2.3 Follow-up interview

After the writing task, one participant in each pair participated in a 10 minute interview while the other one was completing the questionnaire. The participants then switched positions to complete the task they had not already done. The interview was used to elicit more information about whether the participants had learned some writing skills or linguistic knowledge from the collaborative writing process, and further questions asked about their attitude towards the collaborative writing on their language learning and writing skills development. The interview prompts were divided into two parts: first, questions specific to the experiment's writing task itself, and some impromptu questions based on the pair's interaction during the task, and second, more general questions about their experience in collaborative writing and their opinions on the experience. The interview protocol is included in Appendix C. These interview prompts were developed from the response to a pilot open-ended survey on Google Doc writing and English learning from two Japanese learners of English conducted before this study.

3.3 Data collection procedure

The data were collected in a lounge of a graduate student dorm during the spring recess. Before the writing task, the participants were given a brief instruction on the tools in the Google Doc platform that allow revising, editing, and commenting on the text, and counting words and checking the revising history. They were told to write how they usually wrote together with others. They needed to have a consistent and succinct essay and were therefore recommended to check with each other. Once familiarized with the procedure, they completed the main task. The pairs spent an average of an hour on the main task.

During the task, the two members of the pair sat at a table next to each other, with an audio recorder placed between them. The pair members brought their own laptops so they could see the same Google Doc page from their own screens during the writing task. Their activities on the Google Doc were synchronously screen-recorded from my laptop. Both Pair 2 and Pair 6, however, had to share the same computers during the task, because Mukti from Pair 2 forgot to bring her laptop on the day, and Chris had hurt his fingers days before the task and was unable to type.

The argumentative writing task was followed by the survey and the interview immediately after the performance of the task. I interviewed one member of the pair while the other one was filling out the survey. After the ten minute interview, I interviewed the second member while the first member was filling out the survey. The only exception was Pair 6, who participated in the interview at the same time because they said they felt comfortable in that way. The interviews were audio recorded for further analysis.

3.4 Data analysis

3.4.1 Audio recording

Audio recordings of NS-NNS interactions were transcribed for analysis using Jeffersonian convention (Johnson, 2009, see Appendix D). The transcribing process followed the Index-Transcribe protocol (McLellan et al., 2003). I listened to the recording closely and wrote down the major points of the interactions, indexed the minute and second on the recorder, and

included a short description of my opinions about the excerpt. In this study, an LRE was defined as any part of peers' collaborative dialogue that is related to language they were producing or had produced, and the revision or comment they made to their partner's or their own written text (Amirkhiz et al., 2013, Swain & Lapkin 1998: 326). For the purpose of coding the Language-Related Episodes, I coded the transcript but listen to the audio to verify what I had found in the transcript. In addition, the screen recording of the participants' producing, editing and revising activities was used to triangulate the audio data. The revising history of the written text recorded in Google Doc system was also used to triangulate the counts of LREs.

3.4.2 Questionnaire data

The results of the questionnaires were entered intro SPSS and descriptive statistics (mean and standard deviation) were calculated to compare the difference in the ratings of the native speakers of English and the nonnative speakers.

3.4.3 Interview data

I audio-recorded the interviews and took field-notes of the responses and important points brought up during the interviews with the participants. The responses recorded during the interviews were collected, reviewed, grouped into measureable categories, and analyzed qualitatively. Instead of imposing a framework onto the data from an *a priori* source, I allowed patterns to emerge from the data themselves. The coding process followed the stages in grounded theory methods, which "consist of systematic inductive guidelines for collecting and analyzing data to build middle-range theoretical frameworks that explain the collected data" (Charmaz, 2000, p. 509). Two particular types of data were attended to: one concerned the participants' attitude and opinion towards collaborative writing in general; the other concerned the participants' explanation to their idiosyncratic behavior during the writing task in this study. The results in the collaborative writing showed there are three distinct forms of interaction patterns during the writing tasks. The different patterns occurred in different phases of writing (before writing or during writing) and in different forms (oral discussion or written suggestion).

4 Findings

4.1 Language related episodes in a collaborative writing task

Three types of LREs were identified in the transcribed data of the interactions. I present some excerpts from the dyad interactions to illustrate how these analyses were conducted.

4.1.1 Form-oriented LREs (FO-LREs)

In the present study, any segment in the collaborative discourse that dealt with grammatical accuracy (e.g., verbs, articles, linking devices) was categorized as form-oriented LRE. Results show that 28 out of the 34 LREs from this category occurred when the participants comment or edited on each other's section as shown in Google Doc revising history, or when the participants spotted the errors on the screen. Here is an example when Chris (the NS) spotted Ming (the NNS) typing and revised her expression.

Example 1 (Interaction from Pair 6)
```
Ming: ((typing)) We would like to discuss uh::: what has (.) what have
already-
Chris: >what is already being done< <(taking over the typing) what is
already being done,> because it is not stopped. It's 。
Ming: ((taking back the typing))=being done, whether it is。 Whether it
needs improvement↑.
```

From this example we could see how the Google Doc platform provided the pairs with a shared platform on which they could work together. The visual collaborative platform helped the participants keep track of the partner's writing process and give more immediate feedback to their peers. Since "'s been done" and "is being done" are pronounced similarly in oral version, the written version helped Chris spot the error that Ming made.

4.1.2 Lexis-oriented LREs (LO-LREs)

Those segments in the collaborative dialogue that dealt with word choice, word meaning, or alternative expressions of the same idea were categorized as Lexis-Oriented LREs. This kind of LREs more frequently occurred during the brainstorming stage before they started new paragraphs. Here, Jung (the NNS) and Ben (the NS) negotiated the word "ramp."

Example 2 (Interaction from Pair 1)
```
Jung: You know in the entrance there is this board coming up and down
[th-]
Ben: [that's] that's a ramp as well.
```

In the above example, Jung described the concept she saw in real life, and Ben gave her the correct reference. This is one of the typical LO-LREs that occurred in the writing task, in which one of the participants (normally the NS) helped the other with vocabulary or expression. In some cases, the pairs might spend a longer time negotiating a certain expression or a certain concept. Here is an example when Jung (NNS) proposed that providing "nursing home" for the disabled and Ben (NS) suggested that "assisted living facility" might be more appropriate after he realized what Jung actually referred to by "nursing home".

Example 3 (Interaction from Pair 1)
```
Jung: but it's not for elderly, it's for disabled people.
Ben: mmhmm, right. So it's that。 (.) So you were the one who suggested
nursing home. Do we think of elderly as disabled?
Jung: But isn't a nursing home for the takecare services. For elderly
only?
Ben: (.)O::h
Jung: =I meant it by like taking care of them like the disabled people.
Ben: Okay. Yeh, a nursing home is for elderly I think.
Jung: okay. What do we call that?
Ben: Assisted living facilities. Something like that.
Jung: Okay then. The other one。
```

The example showed how the word choice interfered with Ben's understanding, and how both the participants negotiated to come up with a less misleading word in the context. Actually, the word choice here was neither right nor wrong. "Nursing home" can refer to any facility

where people receive long-term care, so the NNS was actually no less correct than the NS. This example shows that not all the feedback from NS in the LREs is the perfect resolution. Rather, the feedback could be seen as an additional option of lexical choices

4.1.3 Mechanics-oriented LREs (MO-LREs)

LREs dealing with spelling, pronunciation, and punctuation were categorized as Mechanics-oriented LREs. A total of 23 MO-LREs occurred during the six pairs' writing tasks. Here is an example when Megan (NS) revised the punctuation when reading out Mo's (NNS) text.

> Example 4 (Interaction from Pair 4)
> ```
> Megan: ((reading the NNS's section)) In addition, this understanding
> will make other more- others you should have uh(.) 's' .
> others. >>more receptive to knowledge about the kinds of disabilities
> that people face, the need for structures to be put in place to aid in
> living with disabilities<< (.) and-((laughs)) let's put a=
> Mo: =[comma]
> Megan:[comma]. Yes. ((back to reading)) And how these structures work
> best so they can act—I don't really think here you need a comma. >I
> don't think that one is necessary< ((back to reading)) that will not
> impede the effect- effectiveness of new structures=
> Mo: =Do you want to cut here ↑and make a new sentence?
> Megan: ye::h
> ```

This example shows how Megan provided Mo with some suggestions on Mo's ways of using commas and structuring the sentence. She also added 's' after the plural noun. However, spelling errors were fewer than other errors because of the automatic spelling check of the Google Doc platform.

4.1.4 Written suggestions and comments

In addition to the oral dialogue, the Google Doc provided tools for editing, suggesting, and commenting that allowed the peers to give LREs in written form. Both the Google Doc revising history and the screen recording documented examples of the peers suggesting history. Table 2 shows the written revision Ben gave to Jung during the writing task.

Table 2. A Comparison of Jung's Original Text and Ben's Revising Suggestion

First version of Jung's text	Ben's suggestions on Jung's text
To begin with, people with disability should have equal right to have access to public buildings and transportation. The government should make legal requirements that all public transportations are safe and accessible for every passengers, including those with wheelchairs and guide animals. These will include ramps on public buses that allow wheelchairs to take on and off at stops, and grooves on the floors of metro stations that guide blinds to their destinations. Moreover, all employees of those public transportation should be aware of the safety regulations and how to help those people when necessary	To begin with, people with disabilities~~y~~ should have equal ~~right to have~~ access to public buildings and transportation. The government should ~~make~~ mandate ~~legal requirements~~ that all public transportations are safe and accessible for every passenger~~s~~, including those with wheelchairs and guide animals. These will include ramps on public buses that allow wheelchairs to get~~take~~ on and off at stops, and grooves on the floors of metro stations that guide the blind~~s~~ to their destinations. Moreover, all employees of those public transportation should be aware of the safety regulations and how to help those people when necessary

Note that Ben gave several suggestions on the form and vocabulary in the above excerpt, such as replacing "the legal requirements" with "madate" and "take on" with "get on" and deleting "s" from "every passengers" and "the blinds." The former changes are categorized as LO-LREs while the latter ones are FO-LREs. This passage shows how the written text complemented the collaborative dialogue when participants brought about LREs.

LREs in the transcripts were analyzed for form (grammar), lexis and mechanics. The quantified values of the LREs are presented for each pair below.

Table 3. Type and Frequency of LREs for the Six Pairs

Pair	Form	Lexis	Mechanics	Total words	Composition time (Minute)
1	7	10	3	508	65
2	0	9	1	315	42
3	8	6	1	383	53
4	7	11	4	478	73
5	8	13	6	309	45
6	4	15	8	456	72

According to the audio and screen recordings, the FO-LREs and MO-LREs appeared much more on the text than in their collaborative dialogue, where the lexis LREs appeared the most.

4.2 Questionnaire responses

The participants' responses to the questionnaire helped reveal their language learning profile and their perception of using the Google Doc platform for collaborative writing. Descriptive statistics and percentages for each answer can be seen in Table 4. The seventeen statements aimed to address three constructs: self-assessment of writing skills (Q6, Q7), connection to

own learning (Q2, Q3, Q8, Q11, Q13, Q14, Q15, Q16), and ideas about collaborative writing (Q1, Q4, Q5, Q9, Q10, Q12, Q17).

Table 4. Descriptive Statistics and Percentages for Participant Ratings
(1=Strongly disagree, 5= strongly agree)

Questionnaire items	NS		NNS		t	Significance of Difference (p)
	Mean	SD	Mean	SD		
1. It took me more time to finish the task because of using Google Doc	1.50	.5477	2.00	1.0955	-1.000	.341
2. I felt comfortable while editing my peer's work	3.67	1.0328	3.67	1.0328	.000	1.000
3. I learned new things while reading and editing my peers' contributions	3.50	1.6432	4.33	.8165	-1.112	.292
4. The goal of the pair writing activity was to learn from each other	3.67	1.2111	4.00	.8944	-.542	.599
5. The goal of the pair writing activity was to make the essay more easy for readers to understand	4.17	1.1691	3.83	1.1691	.494	.632
6. I'm a confident writer in English	3.83	1.4720	2.67	.8165	1.698	.120
7. I'm very articulate when I write in English	3.67	1.3663	2.83	.7528	1.309	.220
8. The use of Google Doc helps me interact more with my partner(s)	4.17	1.3292	4.17	.4083	.000	1.000
9. I often check the previous changes before I edit on Google Doc	3.00	1.6733	3.00	1.5492	.000	1.000
10. Because of using Google Doc, my groups are able to come to an agreement faster than face-to-face	3.17	1.1691	3.17	1.1691	.000	1.000
11. Contributing to the Google-Doc writing tasks helps me write better essays in the classroom	3.50	.5477	3.67	.8165	-.415	.687
Questionnaire items	NS		NNS		t	Significance of Difference (p)
	Mean	SD	Mean	SD		
12. Overall, I had a positive experience with writing in groups online compared to face-to-face	3.83	1.1691	3.50	1.0488	.520	.614
13. Doing assignments collaboratively on the Google Doc enables me to	3.50	1.0488	3.17	.7528	.632	.541

study more regularly						
14. Doing assignment collaboratively on the Google Doc enables me to evaluate my own performance	3.50	1.0488	4.33	.5164	-1.746	.111
15. Doing assignment collaboratively on Google Doc helps me learn from my own mistakes.	4.00	1.0955	4.50	.5477	-1.000	.341
16. Writing with others on Google Doc helps me to improve my writing skills	3.83	.9832	4.50	0.5477	-1.451	.177
17. In general, I like writing in groups for course papers/essays	3.33	.8165	3.33	1.2111	.000	1.000

4.2.1 Self-assessment on writing skills (Q6, Q7)

According the results, the two groups showed greatest discrepancy in 'self-assessment' category. Most native speaking participants agreed that they were confident in English writing and that they were articulate when writing in English. In contrast, the non-native speaking participants stayed neutral to these two statements when they assessed their own writing skills.

4.2.2 Connection to own learning (Q2, Q3, Q8, Q11, Q13, Q14, Q15, Q16)

According to the descriptive statistics, the non-native participants showed stronger agreement on most of the statements (Q2, Q3, Q11, Q14, Q15, Q16) under this category. These statements indicate the benefits they gained from the peer feedback and also using online collaborative writing systems. It suggests that the group member with relatively lower proficiency might benefit more from the collaborative writing task.

4.2.3 Ideas about collaborative writing (Q1, Q4, Q5, Q9, Q10, Q12, Q17)

The two groups of participants didn't show a significant discrepancy towards the statements under this category. The results showed an overall positive attitude towards collaborative writing and participants said that collaborative writing did not slow them down in finishing the essay. It helped them to reach agreement more conveniently and was good for course papers/essay writing.

However, independent t-test between the two samples (NS and NNS groups) showed there is no statistically significant difference ($p > .05$) between the two groups even on "self-assessment" and "connection to their own learning" categories, where there were discrepancies in their mean values. Since that sample size plays an important role in p-value (Larson-Hall, 2012), we might consider that the statistically non-significant result (where the p-value is above .05) is the result of the small sample size of twelve participants.

4.3   Interview data

The interview protocol (see Appendix C) concerned two major themes: the interaction of this specific writing task, and their perceptions of collaborative writing in general. Many of the participants made similar comments in their interviews. I examined the themes and categorized the comments made by participants into each. The response can be categorized into three themes: a) learning opportunity in collaborative writing, b) factors that influence the interaction in collaborative writing, and c) perceptions towards NS and NNS relationship during collaborative writing.

4.3.1 Learning opportunity in collaborative writing

The results showed that NNS generally perceived more learning opportunities than the NS participants. More specifically, several NNS participants pointed out that they had learned mostly some vocabulary and the expression and the function of some punctuation during the writing task. This result is not surprising since they only worked on a single task for a short amount of time. Vocabulary might be more likely for them to recall without prompts in the post-task interview.

The following examples showed how Taro from Pair 5 negotiated with Kate on some vocabulary and how he recalled this learning opportunity in the later interview.

```
Example 5a (Writing interaction from Pair 5)
Taro: the accessibility of the bathroom
Kate: yeh yeh yeh
Taro: Slopes [and –
Kate: [Ramps]
Taro: (.) Ramps?
Kate: Ramps. Like to go up.
Taro: >ah ah ah< (.)it's called the ramps?
Kate: yeh yeh yeh
Taro: not slope?
Kate: not stairs. Just ramps.
```

In the above dialogue, Kate pointed out that "ramp" might be more appropriate than "slope" in this case. And the follow-up interview showed that Taro had taken up the feedback from this Lexical LRE.

```
Example 5b (Interview with the Taro from Pair 5, IR=Interviewer)
IR: Did you learn something from your partner's feedback that you
think will help your writing?
Taro: Y:es
IR: Can you give me some examples?
Taro: Kind of uh vocabulary. Kind of "ramp"
IR: A ramp.
Taro: Yes, not slope.
IR: Ah I see.
 ((a different point of the interview))
Taro: these vocabulary. And sometimes good sentences. You know those
sentences that look more beautiful.
```

In the interview, Taro reported that collaborative writing not only gave him the chance to learn more accurate vocabulary, but also better sentences and expressions. On the other hand, some NS participants also mentioned that they learn from NNS peers on some ideas, and organization of the article. However, NS mentioned the learning opportunities much less than the NNS participants. Here is one example showing how Chris benefited from his NNS partner's thinking style during the writing stage.

> Example 6 (Interview with the Chris from Pair 6, IR=Interviewer)
> ```
> IR: Did you learn something from your partner's feedback that you
> think will help your writing?
> Chris: For me it was uh (.) thinking(.) Ming often referred back to
> the question, and that's nice. So it kind of gets me back on track to
> the topic.
> ```

In the above example, Chris pointed out that his partner had kept him on the topic during the discussion. This example, as well as other interviews with NSs, showed how NNS partners could provide useful feedback on ideas, structure and organization of the essay.

4.3.2 Factors that influence the interaction and individual contribution in collaborative writing

In the interviews, participants brought up that some factors would influence the dynamic of the interaction are the relationship between the two participants, the partner's perceived openness to corrective feedback, and perceived authority of the person who gave the feedback. Here is an example when Chris talked about how language can influence his acceptance of the feedback given to his second language in the interview.

> Example 7 (Interview with the Pair 6 IR=interviewer)
> ```
> IR: so the relationship is really important.
> Chris:  Really really important (.4) but you know there is exception
> to that. When somebody is my teacher, my Chinese teacher, and they
> corrected me-
> Ming: AUTHORITY
> Chris: =the authority part. That changes it. Right?
> ```

In the above example, Chris mentioned that the relationship between the peers can influence the dynamic of the interaction in writing. But if one has the authority over the other on the language, the interaction might also work well no matter how close the relationship is. Chris and Ming had been a couple for a long time when they participated my study. As proficient in English as Ming was, she admitted that Chris was better at writing, and she usually asked his opinion when she wrote course papers. A counter example to their collaboration might come from Junko and Beth in Pair 3. Junko reported that she was overly dependent on Beth because she felt Beth was more familiar with the topic and language. Beth reported the same in the interview, but said she had tried to avoid totally dominating the writing by frequently checking with Junko and asking her opinion.

In addition to close relationships, several participants also mentioned that the suggestion tool in the Google Doc platform also allowed them to avoid direct conflict on the correction. These participants were fond of the suggestion tool because it wouldn't erase what the partner had written but meanwhile highlighted the revision to the partners.

Example 8 (interview with the Jung (NNS) from Pair 1, IR=Interviewer)
```
IR: Did you feel comfortable changing or editing your partner's work?
Jung: yah↓ it's just suggestions(.) right? ((laugh)) whether or not
accepting them is his choice.
```

In the interview, Jung mentioned that she was very comfortable making changes to the text with the suggesting tool, which gave her partner the chance to accept the revision critically. I noted that almost all participants who wrote on their own laptops gave suggestions instead of direct correction to their partners' texts. The exception was content from the partner to directly revise a certain part of the article. For instance, when Kate noticed there were many typos in one of Taro's paragraph, she asked if she could directly change his text. With Taro's consent, she revised that part directly under Taro's observation. Chris (NS) from Pair 6 also pointed out that the suggestion tool was very useful; he even said the platform should also include some tools to record voice or video for your writing partners, so they would know what were you thinking when you made the suggestion or revision. The participants were fond of the less confrontational or appropriating but more informative feedback from their partners on the Google Doc platform.

4.3.3 Perceptions towards NS/NNS relationship in collaborative writing

Interestingly, three NNS participants mentioned that they wouldn't pay as much attention to their grammar as when they were working with other non-native speakers. They said they felt more secure about their grammar because native speakers would catch their grammar errors and point them out, whereas when working with other NNS peers, they felt they shared responsibility for checking grammar according to their proficiencies. The example below showed how Jung (NNS) would treat her own grammar more leniently when she worked with a native speaker.

Example 9 (Interview with the Jung in Pair 1, IR= Interviewer, IE = Interviewee)
```
IR: how do you think working with NS and NNS different?
Jung: Yeh, sure. Like when I'm working with Native speakers, I usually
don't care about the grammar or mistakes that I might make. Because I
know for sure that they might change ((Laugh))
IR: ((laugh))
Jung: right?
IR: Uh ha
Jung: Like this grammar thing. And when I'm writing with non-native
speakers (.5) I guess (2) well (.) I think we both need to check with
each other, for grammar and sentence structure, because we both are
not native speakers.
```

While Jung stated that she would be more careful with grammar checking when working with other NNSs, some of the participants also addressed how the power relationship between NS and NNS would influence their interaction in the collaborative writing. In the interview with Taro, he mentioned that he didn't like those NSs who sometimes might be dominant in the project and merely assign the tasks to the others. And also one NS participant from another pair mentioned how she would have been even more dominating, if she hadn't frequently reminded herself it was a collaborative writing task. Many participants, either NS or NNS, perceived the power relationship in the writing process.

On the other hand, two native speaker participants reported that they avoided correcting every error their partners made. Here is an interview with Kate (NS) showing how she avoided direct correction.

> Example 10 (Interview with the Kate from Pair 5, IR=Interviewer)
> ```
> IR: Did you feel comfortable changing or editing your partner's work?
> Kate: I felt more comfortable changing his typo than correcting his
> grammar. So—
> IR: Did you find a lot?
> Kate: There were not a lot. There were some. But sometimes I would do
> was I wait for him to get further (1.0) and then I will go back to
> change some grammar. So it's not right in front of his face.
> ```

Like the Beth from Pair 4, Kate said it was impossible to correct all the grammar errors her partner made, and she would just make the major revisions that would influence understanding, in order to meet the basic requirements of the writing task.

5 Discussion

RQ1: What are the Language-Related Episodes (LREs) of native and non-native dyads like in the course of collaborative writing?

The results of the writing tasks show that the collaborative composition process stimulated mostly FO-LREs and LO-LREs and some MO-LREs. Most of the LO-LREs occurred during the collaborative dialogue, where the participants perceived the gap in their meaning producing, and then negotiated the meaning and came up with the appropriate expression (Example 2 and 5a). In contrast, most of the FO-LREs occurred in the written text when the participants commented or edited each other's section, or when the participants spotted errors on the screen.

The synchronous online writing platform provided the writers more updated information on the text than the asynchronous platform so they caught up with the errors and made revisions more easily. They caught up with the focus of their LREs quickly by watching the activities on the Google Doc platform. The suggesting and commenting tool in the Google Doc platform provided the participants a more convenient way of correcting their partner's text since it avoid direct deleting and it was up to the other side whether to take the revision or not.

The NS participants avoided correcting every single error they spotted their partners make and just revised those major errors in order to meet the requirements of this writing task. In terms of word choice and lexical suggestion, NS usually checked and gave feedback to the words prompted by NNS to make sure they were talking about the same concept (for instance, Examples 2 and 3).

RQ2: How do students perceive group work in terms of learning opportunities and collaboration?

During the interview, most non-native speakers recalled that the group work provided them the chance to learn more accurate vocabulary and expression. In contrast, only some of the native speakers reported having learned from their NNS partners, in situations limited to organization or ideas or thinking styles. Many participants, both NS and NNS, perceived the

power relationship in the writing process. This power dynamic could be attributed to their familiarity with the topic, the proficiency in the language, or cultural background and personality. The partner with lower power, for example, with NNS status, or a lack of knowledge of the topic on disabled persons, tended to be dependent on the higher powered partner. In terms of language accuracy, the same NNS participant claimed to be more careless with her grammaticality when working with a NS than with a NNS. The notion of power relationship had been mentioned by participants like Taro and Beth. While Taro said he felt negatively when an NS dominates a group project telling what NNS participants have to do, Beth also felt that sometimes NSs have to 'take care of' the NNSs in the group. The power differences have been seen in other studies of NS-NNS collaborative writing (Cheng, 2013; Leki, 2001; Morita, 2004; Zhu, 2001), so we need to think about what we can do to make sure it's a positive experience for both partners

In addition, Google Docs provided a more convenient way for the participants to provide feedback. Most participants were fond of the suggesting tool, which avoided direct deletion of the text and also left it to the partner whether or not to take the revision. By doing so, the participants avoided direct confrontation and saved their partners' ownership of their own text. In general, the participants preferred less confronting but more informative tools to build up their feedback, such as the suggesting tool, and recommended audio notes attached to some revisions explaining why they need to change this way.

6 Limitations

Because some of the participants knew each other very well before the experiment, they shifted to work on the same laptop in some stage of the experiment, making it hard to tell from the revision log the contribution of each side by the word count in the final draft.

Factors such as personal relationship between participants in the same pairs, the background knowledge of the topic, and their writing styles as well as language proficiency, seemed to have influence on the interaction during the collaborative writing. However, I wasn't able to access information that would have helped me rule out the confounding variables completely before the research. Future studies might want to consider those factors into the analysis and come up with a more detailed background survey that can access more detailed information about the participants, such as their openness to correction in writing and their perceptions of their partner's openness to feedback during the writing.

Due to the small sample size, the results of this study might not be generalizable into other contexts. The small sample size might also be a factor in the lack of statistical significance in the survey results.

7 Conclusion

The findings of the present study provide us a close look at the interaction between native speakers and non-native speakers during writing process. This study also found that writing tasks could trigger LREs in lexical, grammatical, and mechanical items. Lexical LREs tended to appear in oral interaction, and the grammatical and mechanical items tended to happen in the written text. Discussion of the Language related episodes helped the Non-native speakers learn more accurate words and expressions.

The study also revealed that the participants' perception of collaborative writing was positive only when the power dynamic of the interaction was more balanced, instead of one dominating over the other. The power relationship is concerned with factors such as knowledge to the topic, language proficiency, cultural background, experience in group work, and openness to the correction. If the power relationship is not balanced, collaborative writing might not be as beneficial as researchers might expect (e.g., Leki, 2001).

The current study might provide some useful pedagogical implications. Firstly, the collaborative writing tasks should be an optional and should allow students to choose their own partners. The study showed that the relationship and the perceived partner's openness to correction are important factors that could influence the interactions of collaborative writing. Secondly, the Google Doc platform might be a suitable environment for the students to perform their collaborative project. The suggesting and comment tools provide them a more confortable way of giving feedbacks. Video or audio recordings might be useful for those who work asynchronously to know more details about the reasons why their partners have made the changes.

References

Amirkhiz, S. Y. Y., Bakar, K. A., Samad, A. A., Baki, R., & Mahmoudi, L. (2013). EFL/ESL Learners' Language Related Episodes (LREs) during performing collaborative writing tasks. *Journal of Language Teaching and Research*, *4*(3), 473-479. doi:10.4304/jltr.4.3.473-479

Aydın, Z., & Yıldız, S. (2014). Using wikis to promote collaborative EFL writing. *Language Learning & Technology*, 18(1), 160-180. Retrieved from http://llt.msu.edu/issues/february2014/aydinyildiz.pdf

Bradley, L., Lindström, B., & Rystedt, H. (2010). Rationalities of collaboration for language learning in a wiki. *ReCALL*, *22*(2), 247-265. doi:10.1017/S0958344010000108

Charmaz, K. (2000). Ground theory: Objectivist and constructivist methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 509–535). Thousand Oaks, CA: Sage.

Cheng, R. (2013). A non-native student's experience on collaborating with native peers in academic literacy development: A sociopolitical perspective. *Journal of English for Academic Purposes*, *12*(1), 12-22. doi:10.1016/j.jeap.2012.10.003

Damon,W.,& Phelps,E. (1989). Critical distinctions among three approaches to peer education. *International Journal of Educational Research, 58,* 9–19. doi:10.1016/0883-0355(89)90013-X

Ede, L. S., & Lunsford, A. A. (1990). *Singular texts/plural authors: Perspectives on collaborative writing*. Carbondale, IL: Southern Illinois University Press.

Fernández Dobao, A. (2012a). Collaborative dialogue in learner–learner and learner–native speaker interaction. *Applied Linguistics*, 33(3), 229-256. doi:10.1093/applin/ams002

Fernández Dobao, A. (2012b). Collaborative writing tasks in the L2 classroom: Comparing group, pair, and individual work. *Journal of Second Language Writing*, 21, 40–58. doi:10.1016/j.jslw.2011.12.002

Fernández Dobao, A., & Blum, A. (2013). Collaborative writing in pairs and small groups: Learners' attitudes and perceptions. *System*, *41*(2), 365-378. doi:10.1016/j.system.2013.02.002

Hess, K. K (2011). Local assessment toolkit: Exploring cognitive rigor. The National Center for the Improvement of Educational Assessment. Retrieved from http://www.nciea.org/publication_PDFs/CRM_ELA_KH11.pdf

IELTS Writing Task 2 Sample 713. (n.d.). Retrieved from http://www.ielts-mentor.com/writing-sample/writing-task-2/1782-ielts-writing-task-2-sample-713-in-most-countries-disabled-people-are-not-catered-adequately

Jefferson, G. (1984). Transcription Notation. In J. Atkinson and J. Heritage (Eds.), *Structures of Social Interaction* (pp. ix-xvi). New York: Cambridge University Press.

Johnson, C. M. (2009). Transcription. Retrieved from www.cogsci.ucsd.edu/~johnson/COGS102B/JeffersonianNotation.doc

Kessler, G. (2009). Student-initiated attention to form in wiki-based collaborative writing. *Language Learning & Technology*, *13*(1), 79-95. Retrieved from http://llt.msu.edu/vol13num1/kessler.pdf

Kwon, C. (2014). Student perspectives on group work and use of L1: Academic writing in a university EFL course in Thailand. *University of Hawai'i Second Language Studies Papers, 33* (1), 85-124. Retrieved from http://hdl.handle.net/10125/40734

Larson-Hall, J. (2012). Our statistical intuitions may be misleading us: Why we need robust statistics. *Language Teaching*, *45*(04), 460-474. doi:10.1017/S0261444811000127

Leki, I. (2001). "A narrow thinking system": Nonnative‐English‐speaking students in group projects across the curriculum. *TESOL Quarterly*, *35*(1), 39-67. doi:10.2307/3587859

Levy, M., & Stockwell, G. (2006). *CALL dimensions: Options and issues in computer-assisted language learning*. Mahwah, NJ: Lawrence Erlbaum Associates.

Li, M. & Kim, D. (2016). One wiki, two groups: Dynamic interactions across ESL collaborative writing tasks. *Journal of Second Language Writing*, 31(1), 25–42. doi:10.1016/j.jslw.2016.01.002

McLellan, E., MacQueen, K. M., & Neidig, J. L. (2003). Beyond the qualitative interview: Data preparation and transcription. *Field Methods*, *15*(1), 63-84. doi:10.1177/1525822X02239573

Morita, N. (2004). Negotiating participation and identity in second language academic communities. *TESOL Quarterly*, 38(1), 573–603. doi:10.2307/3588281

Neumann, H., & McDonough, K. (2015). Exploring student interaction during collaborative prewriting discussions and its relationship to L2 writing. *Journal of Second Language Writing*, *27*, 84-104. doi:10.1016/j.jslw.2014.09.009

Shehadeh, A. (2011). Effects and student perceptions of collaborative writing in L2. *Journal of Second Language Writing*, *20*(4), 286-305. doi:10.1016/j.jslw.2011.05.010

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

Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, 14, 153–173. doi:10.1016/j.jslw.2005.05.002

Storch, N. (2007). Investigating the merits of pair work on a text editing task in ESL classes. Language Teaching Research, 11(2), 143–161. doi:10.1177/1362168807074600

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

Suzuki, W., & Itagaki, N. (2007). Learner metalinguistic reflections following output-oriented and reflective activities. *Language Awareness*, *16*(2), 131-146. doi:10.2167/la392.0

Swain, M., & Lapkin, S. (2001). Focus on form through collaborative dialogue: Exploring task effects. In M. Bygate, M. Swain & P. Skehan (Eds.) *Researching pedagogic tasks: Second language learning, teaching and testing*, (pp.99-118). New York, NY: Routledge.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Watanabe, Y., & Swain, M. (2007). Effects of proficiency differences and patterns of pair interaction on second language learning: Collaborative dialogue between adult ESL learners. *Language Teaching Research*, *11*(2), 121-142. doi:10.1177/136216880607074599

Watanabe, Y., & Swain, M. (2008). Perception of learner proficiency: Its impact on the interaction between an ESL learner and her higher and lower proficiency partners. *Language Awareness*, *17*(2), 115-130. doi:10.1080/09658410802146651

Wigglesworth, G., & Storch, N. (2009). Pairs versus individual writing: Effects on fluency, complexity and accuracy. *Language Testing*, 26(3), 445–466. doi:10.1177/0265532209104670

Wigglesworth, G., & Storch, N. (2012). What role for collaboration in writing and writing feedback. *Journal of Second Language Writing*, *21*(4), 364-374. doi:10.1016/j.jslw.2012.09.005

Yan, J. X., & Horwitz, E. K. (2008). Learners' perceptions of how anxiety interacts with personal and instructional factors to influence their achievement in English: A qualitative analysis of EFL learners in China. *Language Learning*, *58*(1), 151-183. doi:10.1111/j.1467-9922.2007.00437.x

Yeh, H. C. (2014). Exploring how collaborative dialogues facilitate synchronous collaborative writing. *Language Learning & Technology,* 18(1), 23-37. Retrieved from http://llt.msu.edu/issues/february2014/action2.pdf

Zhu, W. (2001). Interaction and feedback in mixed peer response groups. *Journal of Second Language Writing*, 10(2), 251–276. doi:10.1016/S1060-3743(01)00043-1

Appendix A. Writing Prompt

Please write an essay on Google Doc with your partner on the following topic. Control the length of the essay between 300 to 500 words. Check with your partner to make sure the essay is complete, succinct and logical. You are allowed to discuss with your partner and comment, edit, or revise your partner's writing during the task. Feel free to use as much time as needed for this writing task.

Topic:
In most countries disabled people are not catered for adequately, e.g. buildings are often inappropriately designed. Governments rely too heavily on charities and voluntary organizations to provide assistance and funding. What further measures could be taken to assist disabled people?

Appendix B. Questionnaire

Students' Interactions and perceptions of Online pair writing

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Biodata:

1. Name: _____
2. Gender: _____
3. Major: _____
4. Level (Please circle one): Undergraduate   graduate
    other_____
5. Years in English-speaking countries: _____
6. Your first language(s)_____; other language (s) you   have learned: _____
7. Language teaching experience _____(years) in _____ (language)
8. My English proficiency:
    a) Low   b) intermediate   c) advanced   d) Native (or near-native)
9. Have you work on projects/assignments/papers with someone else on Google Doc before this project?
    a) often   b) Sometimes   c) very rare   d) Never

Please check the ones that fit your general opinion towards online group writing!
1=strongly disagree 2=disagree 3=I don't know 4=agree 5=Strongly agree

Part 1 Today's writing					
18. It took me more time to finish the task because of using Google Doc	1	2	3	4	5
19. I felt comfortable while editing my peer's work	1	2	3	4	5
20. I learned new things while reading and editing my peers' contributions	1	2	3	4	5

21. The goal of the pair writing activity was to learn from each other	1	2	3	4	5
22. The goal of the pair writing activity was to make the essay more easy for readers to understand	1	2	3	4	5
Part 2 In General					
23. I'm a confident writer in English	1	2	3	4	5
24. I'm very articulate when I write in English	1	2	3	4	5
25. The use of Google Doc helps me interact more with my partner(s)	1	2	3	4	5
26. I often check the previous changes before I edit something on Google Doc	1	2	3	4	5
27. Because of using Google Doc, my groups are able to come to an agreement faster than face-to-face	1	2	3	4	5
28. Contributing to the Google-Doc writing tasks helps me write better essays in the classroom	1	2	3	4	5
29. Overall, I had a positive experience with writing in groups online compared to face-to-face	1	2	3	4	5
30. Doing assignments collaboratively on the Google Doc enables me to study more regularly	1	2	3	4	5
31. Doing assignment collaboratively on the Google Doc enables me to evaluate my own performance	1	2	3	4	5
32. Doing assignment collaboratively on the Google Doc helps me learn from my own mistakes.	1	2	3	4	5
33. Writing with others on Google Doc helps me to improve my writing skills	1	2	3	4	5
34. In general, I like writing in groups for course papers/essays	1	2	3	4	5

Appendix C. Interview Prompts

Interview guide for participants:

1. Could you please comment on you writing collaboration today?

2. Did you give feedback to your partner when you wrote together today? Did you feel comfortable changing or editing your partner's work?

3. Did you learn something from your partner's feedback that will help your writing? If so, could you give me some examples?

4. To what extent do you think the writing today was a collaboration of both of you? Why? Is it always the case when you write with someone else?

5. In the past, have you written papers/essays with native speakers of English on Google Doc? What about non-native speakers? If so, are those two experiences different? Why?

6. In the past, do you think you contributed enough in group writing? What do you think of other people's contribution?

7. In general, do you have any negative or positive comments on Google Doc collaborative writing? Why? Any suggestion for improvement?

8. In general, do you think writing with others helps your writing skills? In what way?

9. In collaborative writing, what factors do you think will influence the interaction between you and your partners? Your partners' personality, ideas, language proficiency, or else?

Appendix D. Transcription Notation

Jeffersonian Transcription Notation includes the following symbols (Jefferson, 1984):

Symbol	Name	Use
[text]	Brackets	Indicates the start and end points of overlapping speech.
=	Equal Sign	Indicates the break and subsequent continuation of a single interrupted utterance.
(# of seconds)	Timed Pause	A number in parentheses indicates the time, in seconds, of a pause in speech.
(.)	Micropause	A brief pause, usually less than 0.2 seconds.
. or ↓	Period or Down Arrow	Indicates falling pitch.
? or ↑	Question Mark or Up Arrow	Indicates rising pitch.
,	Comma	Indicates a temporary rise or fall in intonation.
-	Hyphen	Indicates an abrupt halt or interruption in utterance.
>text<	Greater than / Less than symbols	Indicates that the enclosed speech was delivered more rapidly than usual for the speaker.
<text>	Less than / Greater than symbols	Indicates that the enclosed speech was delivered more slowly than usual for the speaker.
°	Degree symbol	Indicates whisper or reduced volume speech.
ALL CAPS	Capitalized text	Indicates shouted or increased volume speech.
underline	Underlined text	Indicates the speaker is emphasizing or stressing the speech.
:::	Colon(s)	Indicates prolongation of an utterance.
((italic text))	Double Parentheses	Annotation of non-verbal activity.