

## Decision-Making in a Collaborative Writing Task

■ Merlyn Lee

De La Salle University–Dasmarinas, Philippines

**ABSTRACT:** Collaborative writing offers an authentic learning environment where students do not only develop their writing skills but also critical thinking and decision making skills. Despite studies conducted on collaboration (Leeser, 2004; Mabrito, 2006; Storch, 2005; Watanabe & Swain, 2007), few studies have focused on how students arrive at decisions, especially in an ESL context. This study describes the decision-making processes that occur during a collaborative writing task involving college freshman students. It looks into students' writing decisions and the factors that underlie such decisions. Two groups, each consisting of three female students, wrote an argumentative essay collaboratively. The writing sessions were audio and video-taped and a stimulated recall interview was conducted immediately after each session. Verbal transcripts of the interaction were analyzed according to topical episodes and classified based on Burnett's (1993) categories of decision making, which include immediate agreement, elaboration, considering alternatives, and voicing explicit disagreement. Patterns of decision-making were identified in each category. The stimulated recall protocols were used to explain participants' decisions during the stages of prewriting, drafting, and revising. The study revealed participants' less attention to planning but more time spent on translating ideas into sentences. More patterns and longer turns were noted under Voicing Explicit Disagreement and focused more on ideas and translating or phrasing ideas. Conflicts were attributed to participants' differences in their knowledge about writing itself and views about what constitutes good writing. The study recommends explicit teaching of collaborative skills and composing strategies and correction of students' misconceptions about good writing.

### Introduction

With the value placed on collaboration in both academic and workplace settings, teachers are beginning to realize the need for more opportunities for students to develop collaborative and decision-making skills. Writing, which is traditionally viewed as a solitary activity, could be a venue for enhancing students' collaborative skills (Rochelle & Teasley, 1995; Storch, 2005; Wigglesworth & Storch, 2009; Yong Mei, 2010). Despite these benefits, researchers suggest further investigation especially on learner interaction (Putnam & Rafoth, 1990; also cited in Rymer, 1993) and on how a group arrives at decisions. Roskams (1999) explains that many teachers believe that active participation and accurate, appropriate, and meaningful feedback in Asian cultures are constrained by fear of mistakes and politeness norms. Gokhale (1995) also stressed that more evidence has yet to be presented to establish its effectiveness at the college level. Hayes (2000), moreover, draws attention to the few studies on problem solving and decision-making processes in classroom writing. In addition, the researcher sees the need for a study on this area because projects or academic requirements in universities are often done in small groups. Undergraduate

essays, term papers, and research projects are often accomplished collaboratively because of the big number of students per class.

This paper describes student decision-making during a collaborative writing task. It analyzes patterns of decision-making during the prewriting, drafting and revising stages of writing and investigates how decisions are arrived at.

### **Theoretical framework**

This study on collaborative writing draws on dialectical or social constructivism. Dialectical or social constructivism according to Moshman (1982; also cited in Applefield, Huber, & Moallem, 2001) refers to the "...origin of knowledge construction as being the social intersection of people, interactions that involve sharing, comparing and debating among learners...." (p. 35-36). Writing as social constructivism stresses collaborative social interaction, where learners build knowledge as they interact with one another. Knowledge therefore, is considered a product of social processes where learners experience problem solving and decision-making. Social negotiation takes place as they consult one another about how to write (Derry, 1992; also cited in Benton, 1997).

Two dimensions are addressed in this study: the social and cognitive dimensions of collaborative writing. As members of a group work together to write, they share ideas, debate with one another, and make decisions. In this social context, certain thought processes are happening. An individual tries to process and understand information based on his/her existing schemata or knowledge, which helps determine how the topic or issue is approached. When students' ideas vary, disagreement may arise and explanation becomes necessary. In this sense, thinking is tied to the social context of the learning experience.

This collaborative activity may reveal patterns of interaction in the three stages of writing: prewriting, drafting, and revising. Four categories of decision-making are considered based on Burnett's framework (1993): *immediate agreement*, *elaboration*, *considering alternatives*, and *voicing explicit disagreement*.

Immediate agreement takes place as a result of a shared understanding among the members. In this category, members do not engage themselves in discussion but merely accept the idea proposed by another member. There could be elaborations but they come after an agreement has been reached. Burnett explains that immediate agreements are important in decision-making; however, they "... are only detrimental if they are the predominant kind of decision-making...." (p. 153). In her study of substantive conflict, the pairs which produced high-quality documents deferred consensus through considering alternatives and voicing disagreements but such types of conflict were not so evident in pairs who produced low-quality documents.

During decision-making about how to solve a problem, conflicts may arise as a result of differences in ideas. While most teachers probably would demand that students avoid disagreement, Brown and Palincsar (1989; also cited in Van Boxtel, Var Linden, & Kanselaar, 2000) argue that conflict is important in social interaction because it can lead to explanation, justification, reflection, and a search for further information. Bruffee (1999) highlights the importance of disagreement in collaborative learning as part of teaching interdependence to students. Moreover, Burnett (1993) explains that not all conflicts can be detrimental to the group such as substantive conflict, which includes considering alternatives and voicing disagreement. Both are considered productive because they defer consensus and allow for possibilities or options to be explored. Members, while their ideas are in conflict with one another, are actually engaged in what Trimbur calls "intellectual negotiation" (Burnett, 1993).

Topical episodes in the category *Considering Alternatives* show members offering other options to a point presented instead of raising arguments against it. In doing so, explanations are sometimes necessary. Elaborations are necessary when there is a breakdown in mutual intelligibility. They are therefore helpful in decision-making and an important aspect in collaboration. According to Anderson, Mayes, and Kibby (1995), "...in explaining something to a peer, he or she must clarify and organize the material learned and in so doing may discover gaps in his or her knowledge, or

inconsistencies with others' work, which in turn stimulates a search for further information...." (p. 29).

## **Methodology**

### *Participants of the study*

Six female students enrolled in a college freshman writing class served as participants. They were asked to write an essay in English individually prior to the conduct of the study. The essays were rated by three English teachers in the same university. The Kendall Coefficient of Concordance was used in determining inter-rater reliability. With the level of significance at 0.05 and a 95 % level of confidence, the computed value was 0.83. Since the null hypothesis was rejected, it could be concluded that there was a significant agreement among the three raters. The essays were ranked according to the average of the rankings of the three raters. Mixed ability grouping was observed. Ranks 1, 4, and 5 were in Group A, and ranks 2, 3, 6 were in Group B. Each group consisted of one "high", "average", and "low" member. The descriptions were only labels that distinguished participants from one another in terms of their performance in the essay and did not refer to their ability in class.

### *Data-gathering procedure*

Two weeks before the study took place, the participants were given an orientation about collaborative writing such as participant roles, group dynamics and decision-making. The participants were also briefed on the conduct of the stimulated recall method. Each group went through the following procedure before the actual conduct of the study. They were asked to undertake a prewriting task, which was being videotaped. A stimulated recall was conducted and during this time, the participants had the chance to obtain clarifications about the method. A similar activity was conducted again as a form of training for them.

*Writing task:* The writing task was done in three stages: prewriting, drafting, and revising. The participants wrote an argumentative essay on the topic of "Computer technology: A curse to mankind". A week before the topic was made known to the participants so that they could read articles about the topic or gather ideas about it. Since the study did include language as a variable, participants were allowed to use their first language, which is Filipino, or English, their second language.

*Verbal protocol:* Interactions during the prewriting, drafting and revising stages of writing were transcribed using Allwright's (1990; also cited in Allwright & Bailey, 1991) transcription conventions. Annotations were provided where necessary but only those conventions that were relevant to the study were considered. Topical episodes which did not relate to the writing task like deciding as to who would take down ideas were excluded.

*Stimulated recall method:* After each writing session, the participants and the researcher viewed the tape. The participants were given instructions to explain or describe what was happening. Following the guidelines of Eisenhart and Borko (1993), questions asked were minimal and general (e.g., "Tell me what you are/were thinking" rather than specific (e.g., "Were you thinking of any alternative actions?"). The stimulated recall is an alternative to the think-aloud procedure, where participants speak out what they are thinking about while writing. Such a method is not possible in a collaborative writing task since participants work as a group.

*Coding the transcripts:* The verbal protocol of the interaction was analyzed for identification of topical episodes. A topic episode is a segment of the interaction where a decision was arrived at. In the category *Voicing Explicit Disagreement*, only those episodes which showed open arguments or where negative feedback was introduced by "No", "That's wrong", or their equivalent in Filipino were considered. The transcripts were coded twice. The second coding took place one week after the first coding to see if the results were similar. To check on the validity of the researcher's coding,

two language teachers (Filipino and English) also coded the transcripts. Where disagreements occurred, the three conferred to arrive at a consensus.

The content of talk in the topical episodes was categorized based on Lockhart and Ng’s framework (1995), which considers procedure, phrasing/wording, organization, ideas, style, word choice, and grammar. Patterns of decision-making were identified based on McDonough and McDonough’s (1997) guideline in determining patterns in that for a pattern to exist there should be several samples of it. Given the varying number of topical episodes in each category in the three stages of writing, the researcher decided that in a particular category where the number of topical episodes was small, that is from four to six, the pattern should appear at least twice. If the number of topical episodes was more than six, it should recur in at least three topical episodes.

**Results and discussion**

Each group spent an average of 40 minutes on each session. The participants were told they had up to seven sessions to finish the task. Group A spent one session for prewriting, two for drafting, and one for revising. Group B spent one for prewriting, three for drafting and one for revising. Based on the number of sessions, it is apparent that the participants spent less attention to planning. This finding is in contrast with Storch’s (2005) and Cumming’s (1989; also cited in Storch, 2005) findings, where learners spend more time generating ideas than working on language.

In all 15 topical episodes were identified in both groups. The small number of episodes may be traced to the time spent on this stage. The groups spent one session on prewriting only, showing that the groups did not spend much time planning how the essay should be written or how the ideas should be organized. It is also likely that there were more episodes in Immediate Agreement and Elaboration since at this stage participants were still gathering ideas about the topic. Also, since all of them were enrolled in the same course, their ideas were not in conflict.

*Drafting*

Tables 1 and 2 present how both groups arrived at decisions based on content of talk and categories of decision-making.

Both groups focused their decision-making more on ideas and the wording of these ideas as expected since this is the drafting stage. The highest number of topical episodes is found in *Voicing Explicit Disagreement* in Group B as reflected in Table 2. This finding runs contrary to Olsen and Kagan’s observation (1992) that members who belong to the same clique or are close friends tend to agree too soon. In the present study, the participants could be considered socially homogeneous because they had been classmates for two semesters and they also admitted they

Table 1: Content of topic episodes in the Drafting stage (Group A)					
Content	Immediate agreement	Elaboration	Considering alternatives	Voicing explicit disagreement	Total
Grammar	1	0	0	0	1
Word Choice	2	0	1	1	4
Phrasing	0	0	5	6	11
Idea	3	7	1	1	12
Organization	1	0	0	0	1
Procedure	0	2	0	0	2
Style	0	0	2	0	2
Total	7	9	9	8	33

**Table 2:** Content of topic episodes in the Drafting stage (Group B)

Content	Immediate agreement	Elaboration	Considering alternatives	Voicing explicit disagreement	Total
Grammar	0	0	1	1	2
Word Choice	0	0	0	6	6
Phrasing	3	0	6	23	32
Idea	3	6	0	1	10
Organization	0	0	0	1	1
Procedure	0	0	1	3	4
Style	0	0	0	2	2
<b>Total</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>37</b>	<b>57</b>

were friends. However, it could be a reflection of the kind of task that was given to the participants. Hayes (2000) explains that “... difficult writing tasks often require writers to do a substantial amount of problem solving or decision-making.....” (p. 12).

### *Revising*

Group B spent their time deciding on two aspects of the essay only, punctuation and wording of ideas. One of the two topical episodes, which consisted of more than a hundred turns, did not show the participants collaborating since the conflict involved two members only according to Baker’s (2002) framework for collaboration. Group A showed some planning on how to go about the task of revising the essay. They first analyzed the introduction and gave comments about it before deciding what should be done. Then they proceeded to other parts of the essay. Group B on the other hand, also started analyzing the introduction but no planning on how to go about revising the essay was made.

### *Patterns of decision-making*

#### *Immediate agreement*

The patterns of interaction in this category reflect shared understanding since no conflict arose when solutions were proposed. Implicit agreement was suggested by a topical shift as an indication that the group showed confirmation to the proposal by implementing the proposed solution. The patterns identified were as follows:

- Member explains the problem and proposes a solution—another member/group agrees
- Member proposes a solution before explaining the problem—member/group agrees
- Member proposes an idea—another member/group agrees

In this category, participants showed their agreement through approving responses or through a restatement of the proposed idea. As seen in most topical episodes, members readily agreed to the proposed idea or solution. One disadvantage of this pattern of decision-making, however, is that it restricts the roles of members since members immediately showed agreement, whether or not an explanation was given.

#### *Elaboration*

All elaborations during the prewriting stage focused on ideas. Since the members were still gathering ideas, it is understandable that giving explanations or reasons for ideas presented was necessary before a decision was made. No conflicts were present in this category. Members merely extended a proposed idea.

Episodes in this category for both groups focused on explanation of points or ideas. The lack of conflict in both groups is also indicative of the participants’ relative content knowledge, one

factor which has been cited to have an effect on participation in a collaborative task. Zuengler (1993) found in her study that participation patterns can be explained by the amount of knowledge members have about the topic of discussion.

The content of most discussions also shows that writing is a recursive process rather than linear. When students saw the need to generate ideas, they went back to planning and gathering ideas. While this action suggests inadequate planning as what has been observed in both groups, what is noteworthy is that the participants knew what to do. This only shows that in a way, the participants were applying one composing strategy and one problem solving strategy as well.

### *Considering alternatives*

Participants proposed alternatives directly, that is, ideas were not prefaced with polite expressions. The reason probably is that the task did not really demand a more structured kind of interaction where members only speak when they are asked to do so or that they should always introduce their suggestions with formulaic expressions. In addition, the participants were familiar with one another. The phrases were a form of persuasion but the decision could be interpreted as false consensus, which Rymer (1993) refers to as a tendency of members to agree even if they are not fully convinced as illustrated in this extract:

- 1—"Technology should do good in human race." [reading] They should help in everyday living.  
They make our living easier.
- 3—It makes our living much easier.
- 1—It makes our living na lang.
- 3—Oo.[Yes]

Most of the proposed solutions and alternatives in this category were not supported by reasons, justifications, or explanations. Since the focus was on the phrasing of ideas, it could be that the participants did not see the importance of explaining them.

The recurring pattern in this category shows a member proposing a solution/idea, followed by member/s proposing an alternative before a decision is reached.

- 3—Nowadays, computers are becoming...useful?
- 1—have become
- 2—use of computers na lang...
- 1—Sige. Use of computers.

Another pattern of interaction shows members proposing an idea in English first, then explaining the idea in Filipino when it is not acceptable. This pattern was observed when participants seemed to find difficulty in the wording of ideas and in such topical episodes, language played an important role in the resolution of the problem. Collaboration was evident when members sought help in the wording of ideas in English. Participants would often "think aloud", that is, express what they were thinking aloud. They were not alternatives but rather attempts only on their part. Often, the explicit expression of such thinking stimulated other members' thinking too. Flower (1989) claims that "... shared thoughts stimulate further the other members and results in the collaborative construction of meaning." (p. 288). This show of collaboration is an indication of shared decision-making too, for the final alternative cannot be attributed to one member but to all.

The two patterns of interaction identified in this category reflect the ways in which groups can arrive at a decision without resorting to open arguments. What is significant is that groups considered more than one alternative before choosing the final option, which shows that the participants were trying to find the best solution. Baker (2002) argues that collaboration requires a high degree of symmetry. He explains that when a proposed idea is rejected without discussion, then it is not collaborative nor an interaction where one participant is doing all the problem solving. Following Baker's line of thought, it could be said that students need to be taught skills in argumentation such as supporting one's views or giving reasons for rejecting an argument.



### *Voicing explicit disagreement*

Most topical episodes categorized under *Voicing Explicit Disagreement* were noted in the drafting stage. The content of talk focused more on the phrasing of ideas as expected since it is at this stage that ideas are translated into sentences or paragraphs. Most episodes were long. For example, it took more than one hundred turns for the group to finally arrive at a solution when the problem was on how to finish a sentence which begins with *on the contrary*. After much talk, the group decided to write it as "*On the contrary, it gives bad effects*". The long episode may be explained by the participants' lack of linguistic resources, which is similar to Philp, Walter and Basturkmen's observation (2010) in their study of peer interaction. First, a member proposes an idea/solution followed by a disagreement from a member or the group. At one glance, this pattern seems ideal since conflicts are resolved immediately. However, according to Baker (2002), when members in a group disagree to a proposed solution without an explanation, members may just be attending to the task but they are not collaborating. In this kind of decision-making, where no explanations are given, members are not getting higher-level help. They may just agree without really knowing the reason for the solution. While Storch (2002) concluded in her study on patterns of interaction in ESL talk that language helped in the negotiations dealing with language issues, in the present study, the participants failed to utilize language as a tool for providing support to their arguments, which could be explained by their relatively low level of language competence.

The second pattern shows this series of events: a member proposes a solution, a member disagrees, another member proposes an idea/solution, a member reacts, another member proposes until a decision is made. This pattern often leads to lengthy discussions. Gollin (1999) however, supports the value of contestation or conflict during interaction in that while it is "...complicating and often prolonging the writing process, is also seen as one of the major strengths of collaborative writing..." (p. 279). On the other hand, in order for a conflict to be considered substantive, the point of contention should be valid to rationalize for the length of discussion. For example, Group B's topical episode which was a prolonged argument on whether to use "*are assure*" or "*assured*", does not seem to justify its length since it focuses on a local feature.

The third pattern of interaction shows members providing explanations or justifications to negative feedback or disagreement. This kind of interaction shows one of the strengths of collaborative writing. Learners develop skills in argumentation and at the same time allow them to check their knowledge about content and writing. There were topical episodes however, showing members accepting counter-suggestions or disagreements without listening to explanations. For example, using "*Kasi ayoko talaga. Ang pangit.*" [*Because I don't like it. It's awkward.*] as a justification to one's disagreement does not provide much information to the members. Although the group knew something was wrong with the proposed sentence, the data does not suggest that what they knew was valid. One goal of collaboration is the sharing of knowledge so that a member can refine or make modifications in her existing knowledge if necessary. Also, this lack of elaboration deprives other members of the opportunity to learn from one another. In addition, better decisions are more likely to happen if members do not just agree without listening to explanations. Even if the conflict has been resolved, this kind of resolution does not guarantee that it will improve the decision-making skills of the participants, which is one of the benefits of collaboration.

Participants' decision-making in this category could be explained by the stimulated recall protocol. The reasons for their conflicts and disagreements centered on their differences in their knowledge about writing as expressed by the participants' explanations or arguments as follows:

Words/terms should not be repeated (e.g., Some people... Some ladies; other; people; every day). A good composition should have new words to create "excitement and curiosity" for the reader.

"Higher English" should be used in college which means using another term rather than mentioning it again.

Repeating words gives the impression that the writer's vocabulary is limited.

Effective communication of ideas should be prioritized over style or choice of words.

Since phrasing has been talked about and debated on in the previous discussions, focus should shift to grammar and vocabulary in the drafting stage.

If a paragraph is already well-organized, the group should check on grammar.

The longer the sentence the better.

The shorter the sentence the better.

Words should come from the heart. When I read an essay, I look at how/what kind of words are used.

**Disagreements on how the writing activity should proceed, however, could be traced to differing preferences for writing procedures, organization and writing style as noted in the following participants' comments or statements:**

This is the first time I have worked on a very long introduction. When we worked individually, it was easier. But together, it was difficult. It was chaotic. We could not decide on whether to use a question, an explanation or a background. I suggested how we could start it with a question.

I was thinking of how we could classify and outline our ideas. There were just too many. Sentences with similar ideas should be combined.

We were just exchanging ideas but one of us wanted to include all ideas.

I observed that their examples were advantages but our composition is on disadvantages. We should introduce the advantages before citing the disadvantages, then the thesis statement to clearly show the difference.

A significant point to make here is that one of the underlying principles of constructivism is the concept of sociocognitive conflict which arises when the learner realizes that her existing understanding is being challenged. The conflicts noted in this category, despite the long discussions, could still be considered significant as the members of the groups may well have participated in the construction of knowledge.

## **Conclusion**

The collaborative writing activity revealed writing practices of students which teachers may find helpful in their teaching. The less time spent on prewriting and revising stages by the participants suggest some re-direction in the teaching of writing if the process approach to writing is observed. Poor planning results in poor drafting. As such students need to be taught how to develop good planning skills. How the patterns of interaction were arrived at in the four categories could be traced either to the participants' shared understanding or to differences in their understanding about writing. Their background knowledge as revealed in the stimulated recall protocol may have been formed by their experiences with their classmates, teachers and the people around them and their writing experiences.

The study has shown that while shared knowledge facilitates decision-making, differences allowed for the development of thinking skills as students attempt to solve the resulting conflict by adopting a strategy. Based on this observation, it could then be said that a collaborative writing task could be an effective strategy for teaching higher thinking skills. Good decision-making skills are learned and practiced and good decisions are based on knowledge. Decision-making skills therefore, should be taught to students as they could be used outside the classroom. They should also be taught about participant roles in a collaborative writing activity.

The stimulated recall method was a helpful means of getting the participants' perspective. The resulting protocol of this study has exposed students' misguided notions about writing, which may have been acquired from the kind of materials they read or from the kind of writing



they often do although a welcoming thought for teachers of writing is that the participants have constantly thought of their reader during writing. A similar study may be conducted to identify other misconceptions about writing that students hold using the think-aloud procedure or interview. An analysis of collaborative groups' output and relating it with their decision-making may also be conducted in order to determine the extent of influence of writing decisions on the output.

---

## References

- Allwright, D., & Bailey, K. (1991). *Focus on the language classroom*. Cambridge: Cambridge University Press.
- Anderson, A., Mayes, T., & Kibby, M. (1995). Small group discovery learning from hypertext. In C. O'Malley (Ed.), *Computer supported collaborative learning* (pp. 23-28). Heidelberg: Springer-Verlag.
- Applefield, J., Huber, R., & Moallem, M. (2001). Constructivism in theory and practice: Toward a better understanding. *The High School Journal*, 84(2), 35-53. Retrieved from <http://www.proquest.com>
- Baker, M. (2002). Forms of cooperation in dyadic problem-solving. In P. Saemler & H. Benchkroud (Eds.), *Cooperation and complexity* (pp. 1-38). Paris: Hermes.
- Benton, S. (1997). Foundations of writing. In G. Phye (Ed.), *Handbook of academic learning: Construction of knowledge* (pp. 236-259). New York: Academic Press.
- Bruffee, K. (1999). *Collaborative learning: Higher education, interdependence, and the authority of knowledge*. Baltimore: The John Hopkins University Press.
- Burnett, R. (1993). Conflict in collaborative decision-making. In C. Thralls, & N. Bryler, (Eds.), *The social perspective and professional communication: Diversity and directions in research* (pp. 144-163). London: SAGE Publications.
- Eisenhart, M., & Borko, H. (1993). *Designing classroom research: Themes, issues, and struggles*. Needham, MA: Allyn & Bacon.
- Flower, L. (1989). Cognition, context, and theory. *College Composition and Communication*, 40, 282-311.
- Gokhale, A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, 1-8. Retrieved from <http://www.scholar.lib.vt.edu>.
- Gollin, S. (1999). "Why? I thought we'd talked about it before": Collaborative writing in a professional workplace setting. In C. Candlin, & K. Hyland (Eds.), *Writing: Texts, processes and practices* (pp. 267-290). London: Longman.
- Hayes, J. (2000). A new framework for understanding cognition and affect in writing. In R. Indrisano, & J. Squire (Eds.), *Perspectives on writing: Research, theory, and practice* (pp. 6-64). Newark, DE: International Reading Association.
- Leeser, M.J. (2004). Learner proficiency and focus on form during collaborative dialogue. *Language Teaching Research*, 8(1), 55-81. Retrieved from EBSCOhost database.
- Lockhart, C., & Ng, P. (1995). Analyzing talk in ESL peer response groups: Stances, functions, and content. *Language Learning*, 45(4), 605-655.
- Mabrito, M. (2006). A study of synchronous versus asynchronous collaboration in an online business writing class. *American Journal of Distance Education*, 20(2), 93-107. Retrieved from EBSCOhost database.
- McDonough, J., & McDonough, S. (1997). *Research methods for English language teachers*. New York: Arnold.
- Philp, J., Walter, S., & Basturkmen, H. (2010). Peer interaction in the foreign language classroom: What factors foster a focus on form? *Language Awareness*, 19(4), 261-279.
- Roschelle, J., & Teasley, S. (1995). The construction of shared knowledge in collaborative problem solving. In C. O'Malley (Ed.), *Computer supported collaborative learning* (pp. 69-97). Heidelberg: Springer-Verlag.
- Roskams, T. (1999). Chinese EFL students' attitudes to peer feedback and peer assessment in an extended pairwork setting. *RELC Journal*, 30(1), 79-123.
- Rymer, J. (1993). Collaboration and conversation in learning communities: The discipline and the classroom. In C. Thralls, & N. Bryler, (Eds.), *The social perspective and professional communication: Diversity and directions in research* (pp. 179-195). London: SAGE Publications.
- Storch, N. (2002). Patterns of interaction in ESL pair work. *Language Learning*, 52, 119-158.
- Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, 14(3), 153-173. Retrieved from [www.sciencedirect.com](http://www.sciencedirect.com).
- Van Bostel, C., van der Linden, J., & Kanselaar, G. (2000). Collaborative learning tasks. *Learning and Instruction*, 10(4), 311-330.
- Van Den Haak, M.J., De Jong, M.T., & Schellens, P. (2006). Constructive interaction: An analysis of verbal interaction in a usability setting. [Abstract] *IEEE Transactions on Professional Communication*, 49(4), 311-324. Retrieved from EBSCOhost database.
- W-B Olsen, R., & Kagan, S. (1992). About cooperative learning. In C. Kessler (Ed.), *Cooperative language learning: A teacher's resource book* (pp. 1-30). Englewood Cliffs, New Jersey: Prentice-Hall.
- 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. Retrieved from EBSCOhost database.
- Wigglesworth, G., & Storch, N. (2009). Pair versus individual writing: Effects on fluency, complexity and accuracy. *Language Testing*, 26(3), 445-466. Retrieved from EBSCOhost database.
- Yong Mei, F. (2010). Collaborative writing features. *RELC Journal: A Journal of Language Teaching and Research*, 41(1), 18-30. Retrieved from EBSCOhost database.
- Zuengler, J. (1993). Encouraging learners' conversational participation: The effect of content knowledge. *Language Learning*, 43(3), 403-432.