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The Effects of Peer-Mediated and Individual Writing Conditions on the Fluency, Complexity, and Accuracy of Iranian EFL Learners' L2 Writing

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Abstract
Vygotsky (1978) states that based on sociocultural theory (SCT), learning is an interactive process; therefore, when learners are involved in collaborative writing, the opportunity of the interaction among them is increased (Aljaafreh & Lantolf, 1994). To this end, this study was an attempt to explore the impact of peer-mediated and individual writing conditions on intermediate female EFL learners' writing fluency, complexity, and accuracy. Before the treatment, through a PET test, the researcher selected 48 intermediate female learners randomly from among 85 and assigned them into two groups, namely, experimental and control groups including 24 learners in each class (i.e., 12 pairs in peer-mediated and 24 learners in individual groups). All the learners in both groups wrote 7 compositions either in pairs or individually in seven sessions during seven weeks and the eighth composition having the same topic as the first one was used as post-test. The results of independent-samples *t*-test revealed that peer-mediated group outperformed the individual one in terms of fluency, complexity, and accuracy. The implications are presented regarding the advantages of peer-mediation in EFL writing courses.
Keywords: fluency, accuracy, complexity, peer-mediated writing, sociocultural theory

INTRODUCTION

Foster (2008) states that writing is used for expressing ideas and thinking, thus, it is very important in learning a language and for communication (Weigle, 2002). Due to the changes from the teacher-centered classes to the student-centered ones, communicative approaches have focused on L2 learning in context. In Communicative Language Teaching (CLT), the teachers' and students' roles have changed, in other words, teachers and students have modified their roles (Brown, 1994). The teacher is a facilitator who helps students in constructing their knowledge and regards learners as

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active participants in learning process (Fahim & Haghani, 2012; Aidinlou & Ansari Kejal, 2012).

According to Liu and Hansen (2002), the use of collaborative writing (CW) is emphasized in Vygotskian SCT theory. *Mediation* is an important aspect of SCT. Lantolf (2000) states that mind is mediated in SCT by artifacts, activities, etc. through collaboration with others, people are able to utilize tools control the world, therefore, tools get the role of a mediator (Aidinlou & Kejal, 2012). People use both physical tools and symbolic tools to mediate their relationships with each other and make changes in their environment (Fahim & Haghani, 2012).

Moreover, Vygotsky introduced the concept of Zone of Proximal Development (ZPD), that is, the distance between actual developmental level and potential level of development (Turuk, 2008). Collaborative learning, as Bruffee (1984) states, encourages the learners to complete tasks they could not do by themselves through collaboration and negotiation with each other (Hirvela, 1999).

Vygotskian approaches also underline the importance of social interaction with peers. Otherwise stated, Vygotsky's (1978) ZPD suggests that writing skill can be enhanced by the mediation and help of others. As Lantof (2000) states, researchers can access the learners' cognitive processes and investigate the effect of collaboration on language learning by studying their talk during the co-construction and revision of their writings (Swain, 2000).

Although Vygotsky does not ignore the role of biological factors in the emergence of primary processes, he believes that socio-cultural factors are very significant in the human's mental development (Fahim & Haghani, 2012). For Vygotsky (1978), socio-cultural factors are essential in the development of higher mental activities. According to John-Steiner and Mahn (1996):

> Sociocultural approaches highlight the relationship between social and individual processes in the co-construction of knowledge and human activities that take place in cultural contexts, are mediated by language and other symbol systems, and can be best understood when investigated in their historical development (p. 191).

The emphasis of collaborative learning is on the interaction between students with a wide variety of skills (Tsai, 1998). There are various definitions of CW. Ede and Lunsford (1990) using the term "group writing" define CW as "any writing done in collaboration with one or more persons" (p. 14). According to Allen, Atkinson, Morgan, Moore, and Snow (1987), "shared-document collaboration as collaborators producing a shared document, engaging in substantive interaction about that document, and sharing decision-making power and responsibility for it" (p. 70).

Peers are valuable mediators helping each other learn and master L2 (Ahangari, 2014; Behin & Hamidi, 2011; Hansen & Liu, 2005; Maarof, Yamat, & Li Li, 2011). As Villamil and de Guerrero (1996) state, when learners work together in a writing process, they are mediated by the peers; therefore, they can create good writings. As Dillenbourg

(1999) argues, learners' learning processes are activated through interaction when they cooperate with each other. Moreover, peers reduce each other's cognitive load and enhance the internalization of the materials. According to Fung (2006), CW includes two or more people who interact mutually, work together, and share responsibilities in order to produce one document in the writing process. Moreover, in CW, sharing responsibilities and two-way interactions are emphasized.

Regarding individual versus collaborative writing, Storch (2005) investigated the impact of CW on L2 writings fluency, accuracy and complexity. The findings indicated that collaboration results in exchanging ideas and peer feedback. In addition, the findings indicated that the students writing collaboratively were able to write more accurate and complex texts compared to the individual ones. Moreover, Jafari and Nejad Ansari (2012) aimed at exploring the effect of collaboration on the Iranian EFL learners' writing accuracy across gender. To this end, 60 Iranian EFL learners were chosen and divided into two groups. The experimental group wrote collaboratively while the control group wrote individually. The results revealed that the students writing collaboratively outperformed their counterparts in the control group. Moreover, regarding the role of gender, findings indicated that females outperformed males in the CW setting.

Accordingly, Meihami, Meihami, and Varmaghami (2013) explored the effect of CW on EFL student's writing accuracy. A total of 50 male advanced learners participated in this study. The results suggested that CW is effective in enhancing EFL learners' writing accuracy. Accordingly, Biria and Jafari (2013) examined the effect of peer writing on Iranian EFL learners' writing fluency. During the study, 90 homogenous intermediate female learners were selected and randomly divided into control groups writing individually and experimental groups working collaboratively. The findings revealed that collaborative writing improved the overall quality of the learners' writing but not their writing fluency.

In the same vein, Wiggleworth and Storch (2009) investigated the advantages of CW in SLA contexts including 48 pairs. They compared the writing texts produced by learners working collaboratively with those working individually regarding accuracy, fluency and complexity of the texts. The results showed that collaborative writing enhanced learners' writing accuracy, but not fluency or complexity.

In sum, studies conducted on the effects of CW on learners' writing indicated that as a result of collaboration, their writings became more accurate and had better content, organization and vocabulary (Shehadeh, 2012, Storch, 2005). However, few studies are conducted on CW in Iranian EFL context (e.g., Meihami, Meihami, &Varmaghami, 2013; Fahiminia, Jahandar, & Khodabandehlou, 2013; Biria & Jafari, 2013). Although CW is highly recommended in classes by researchers (e.g., Barron, 2003; Hilgers, 1987; Lee, 2011; Tocalli-Beller, 2003), it is not clear for writing instructors what actually takes place during collaboration.

Moreover, most of the teachers think that collaborative writing is time-consuming and creates a disorderly situation in the classroom. Moreover, learners do not know how to write collaboratively since it is not applied in the classes at all. Some writing instructors claim that asking the learners to work collaboratively is not fair since some learners cannot work with others and conflict may happen (Stewart, 1988). Thus, more research is needed in this area to achieve more reliable results in the Iranian EFL context. Thus, the present study aimed at exploring the effect of peer-mediation on EFL learners' writing fluency, complexity, and accuracy enhancement. Therefore, the following research questions were raised:

- Is there any difference between peer-mediated and individual writing conditions regarding EFL learners' writing of fluency, complexity, and accuracy enhancement?

Moreover, the researchers postulated the following null hypothesis:

- There is no difference between peer-mediated and individual writing conditions regarding EFL learners' writing of fluency, complexity, and accuracy enhancement.

METHOD

Participants

Through a PET test, 48 homogenous intermediate female EFL learners were selected randomly out of the pool of 85 ones in an English institute called Jadaddaneshgahi Institute in Urmia, West Azerbaijan, Iran. Then participants were all females divided into 2 groups, that is, experimental and control groups. Each group included 24 learners, that is, 24 learners wrote in pairs (12 pairs) and 24 ones wrote individually. The participants had at least a three-year experience of learning English, were between the age ranges of 16-20 and spoke Azeri and Farsi.

Instruments

The researchers used two kinds of instruments in the study, that is, PET test as a proficiency test for selecting homogeneous intermediate learners and writing topics similar to the ones in the learners' books in pre-test and post-test. Moreover, for the purpose of analyzing the learners' written pieces, the researchers used Wigglesworth and Storch's (2009) method for measuring fluency, complexity, and accuracy (see Table 1).

Procedure

Prior to any treatment, the researchers used PET test to select homogeneous intermediate learners. In other words, the homogeneity among the learners was established before the study. Having administered the PET test, the researchers selected 48 intermediate female learners randomly and assigned them into two groups (i.e., experimental and control ones). Each group consisted of 24 learners, that is, 24 learners

(i.e., 12 pairs) wrote in pairs in experimental group and 24 learners in the control group wrote individually. Before embarking on the treatment, the researchers informed the learners in the peer-mediate group of the rules for writing in pairs, for example, how to interact, plan, generate ideas, listen to each other, etc. During the study, the first composition written by the learners was used as pre-test to check the homogeneity of the learners in both groups before the treatment. Then the researchers analyzed the texts written in pre-test and calculated the inter-rater reliability using Pearson product-moment correlation coefficient. A high inter-rater reliability, that is, .85, was established by the researchers.

Having made sure that both groups were homogeneous regarding their writing fluency, complexity and accuracy, the researchers started the treatment. To this end, researchers asked the learners in both groups to write 7 compositions during 7 weeks, that is, every week they were supposed to write one composition. Then the researchers collected the papers written each session for the purpose of providing feedback. The researchers underlined the errors and gave them back to the learners to correct the next session. Learners in the peer-mediated group checked and corrected the errors underlined by the teacher collaboratively; however, learners in control group followed the same procedure of correcting the errors individually. Then they returned the papers to the teacher.

All the groups wrote 7 compositions, including at least 120 words, on topics similar to the ones in their books in 45 minutes (for example, *how do you prefer to travel, by car or by plane?*) in 7 sessions. This procedure was followed for 7 weeks and the eighth composition, having the same topic as the one in pre-test, served the purpose of the post-test. For analyzing the learners' writings, the researchers used Wigglesworth and Storch's (2009) method of measuring learners' writing fluency, complexity, and accuracy (see Table 1). The same measures were used by other Iranian authors too (e.g., Tavakoli & Rezazadeh, 2014).

Table 1. Complexity, Fluency, and Accuracy

Fluency	Average number of words per text
	Average number of T-units per text
	Average number of clauses per text
Complexity	Proportion of clauses to T-units
	Percentage of dependent clauses of total clauses
Accuracy	Percentage of error-free T-units
	Percentage of error-free clauses

Data Analysis

By means of the SPSS (Statistical Package for Social Sciences) software, the researchers conducted an independent-samples t-test to compare the writing fluency, complexity, and accuracy of the experimental and control groups in pre-test and post-test to see whether the treatment had any significant effect on the experimental group's writing fluency, complexity, and accuracy.

RESULTS

Quantitative Data Analysis for Fluency

Table 2 shows descriptive statistics for fluency differences between the experimental and control groups regarding word number, T-unit number, and clause number in post-test.

Table 2. Descriptive Statistics for the Fluency in the Post-test

Fluency	Groups	N	Mean	Std. Deviation	Std. Error Mean
Word Number	Control group	24	66.38	13.08	3.08
	Experimental group	24	114.33	33.16	7.81
T-unit Number	Control group	24	5.61	1.53	.362
	Experimental group	24	9.83	4.44	1.048
Clause Number	Control group	24	8.11	2.34	.553
	Experimental group	24	13.55	5.52	1.301

According to the mean scores, there was a difference between two groups and an independent-samples t-test was employed to confirm it (see Table 3).

Table 3. T-test for the Fluency in the Post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Word Number	Equal variances assumed	6.0	.01	-5.7	46	.00	-47.94	8.40	-65.02	-30.86
	Equal variances not assumed			-5.7	46.1	.00	-47.94	8.40	-65.36	-30.52
T-unit Number	Equal variances assumed	8.3	.00	-3.8	46	.00	-4.22	1.10	-6.47	-1.96
	Equal variances not assumed			-3.8	46.0	.00	-4.22	1.10	-6.52	-1.91
Clause Number	Equal variances assumed	8.4	.00	-3.8	46	.00	-5.44	1.414	-8.31	-2.56
	Equal variances not assumed			-3.8	46.9	.00	-5.44	1.414	-8.37	-2.51

An independent-samples t-test was conducted to compare the scores of experimental and control group. There was a significant difference in scores for experimental group (M=114.33, SD=33.16) and control group [M=66.38, SD=13.08; t (46) =-5.70 p=.00< .05], that is, the word number of experimental group was more than control group. Moreover, there was a significant difference in scores among experimental group

(*M*=9.83, *SD*=4.44) and control group [*M*=5.61, *SD*=1.53; *t* (46) =-3.80, *p*=.00< .05], that is, the T-unit number of the experimental group was significantly more than that of the control group in post-test. In addition, there was a significant difference in scores for experimental group (*M*=13.55, *SD*=5.52) and control group [*M*=8.11, *SD*=2.34; *t* (46) =-3.84, *p*=.00< .05], that is, the clause number of the experimental group was significantly more than that of the control group.

Quantitative Data Analysis for Complexity

An independent-samples t-test was conducted to compare the mean score of the experimental and control groups regarding the proportion of clauses to T-units in post-test. The results of the descriptive statistics are as follows (see Tables 4).

Table 4. Descriptive Statistics for the Complexity in Post-test

Complexity	Groups	N	Mean	Std. Deviation	Std. Error Mean
Proportion of Clauses to T-Units	Control group	24	1.46	.316	.074
	Experimental group	24	2.58	.498	.117
Percentage of Dependent Clauses of Total Clauses	Control group	24	20.48	7.23	1.704
	Experimental group	24	49.44	9.24	2.178

According to the mean scores, there was a difference between two groups and an independent-samples t-test was employed to confirm it (see Table 5).

Table 5. T-test for the Complexity in the Post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Proportion of Clauses to T-Units	Equal variances assumed	3.7	.06	-7.9	46	.00	-1.113	.139	-1.396	-.830
	Equal variances not assumed			-7.9	46.7	.00	-1.113	.139	-1.398	-.828
Percentage of Dependent Clauses of Total Clauses	Equal variances assumed	3.9	.05	-10.4	46	.00	-28.96	2.76	-34.58	-23.33
	Equal variances not assumed			-10.4	46.1	.00	-28.96	2.76	-34.59	-23.32

An independent-samples t-test was conducted to compare the experimental and control group regarding the proportion of clauses to t-units in post-test in the post-test. There was a significant difference in scores for experimental group (*M*=2.58, *SD*=.49) and

control group [*M*=1.46, *SD*=.31; *t* (46) =-7.9, *p*=.00< .05], that is, the proportion of clauses to t-units of the experimental group was significantly more than that of the control group. Furthermore, there was a significant difference in scores for experimental group (*M*=49.44, *SD*=9.24) and control group [*M*=20.48, *SD*=7.23; *t* (46) =-10.47, *p*=.00< .05], that is, the percentage of dependent clauses of total clauses of the experimental group was significantly more than that of the control group.

Quantitative Data Analysis for Accuracy

An independent-samples t-test was conducted to compare the mean score of the experimental and control groups regarding percentage of error-free t-units and percentage of error-free clauses. The results of the descriptive statistics are as follows (see Tables 6).

Table 6. Descriptive Statistics for the Accuracy in the Post-test

Accuracy	Groups	N	Mean	Std. Deviation	Std. Error Mean
Percentage of Error-free T-units	Control	48	42.20	6.18	1.38
	Experimental	48	86.05	6.09	1.36
Percentage of Error-free Clauses	Control	48	69.72	2.87	.57
	Experimental	48	88.84	2.49	.49

According to the mean scores, there was a difference between two groups and an independent-samples t-test was employed to confirm it (see Table 7).

Table 7. T-test for the Accuracy in the Post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Percentage of Error-free T-units	Equal variances assumed	.04	.83	8.67	46	.00	43.85	1.94	12.91	20.78
	Equal variances not assumed			8.67	46.9	.00	43.85	1.94	12.91	20.78
Percentage of Error - free Clauses	Equal variances assumed	.00	.94	25.0	46	.00	19.120	.762	17.58	20.65
	Equal variances not assumed			25.0	46.0	.00	19.120	.762	17.58	20.65

According to an independent-samples t-test, there was a significant difference in scores for peer-mediated writing (*M*=86.05, *SD*=6.09) and individual writing [*M*=86.05, *SD*=6.09; *t* (46) =8.67, *p*=.00 < .05] regarding percentage of error-free T-units. Accordingly, there was a significant difference in scores for peer-mediated writing (*M*=88.84, *SD*=2.49) and individual writing [*M*=69.72, *SD*=2.87; *t* (46) =25, *p*=.00 < .05]

regarding percentage of error-free clauses. In sum, collaborative writing enhanced learners' writing accuracy more than individual writing condition.

DISCUSSION AND CONCLUSION

The present study aimed at exploring the effect of peer-mediated and individual writing conditions on EFL learners' writing accuracy, fluency and complexity. The results revealed that the experimental (peer-mediated) group outperformed the control (individual) group in all measures of fluency, complexity, and accuracy. Previous research studies, with which this study is in line, have also found that learners writing in pairs produced linguistically more accurate texts than those writing alone (Storch, 2005, 2013; Storch & Wigglesworth, 2007; Wigglesworth & Storch, 2009).

In accordance with this study, Storch's (2011) study proved that collaborative writing conditions can enhance learners' production and result in meaningful revisions (Storch, 2011). In addition, Storch (1999) investigated the impact of collaborative writing on learners' accuracy. The findings indicated that the students working in pairs had more opportunity to discuss their grammatical choices and their writings were more accurate than the ones written individually; however, in contrast with this study, they were less complex. Moreover, the results accord with Storch and Wigglesworth's (2007) studies which indicated that the texts written collaboratively were significantly more accurate than those written individually.

This finding is accounted for by Vygotky's (1978) SCT according to which learning is a social activity (Vygotsky, 1978). Collaborative writing is an effective means of improving L2 learners' writing skill. Involving the learners in collaborative writing activities can increase the interaction among learners in the writing class. In line with Biria and Jafari (2013) and Meihami, Meihami, and Varmaghami (2013), this study found that CW had an influential effect on EFL student's grammatical accuracy in their writing. In other words, the collaborative dialogue in the writing process mediates language learning. As Lantof (2000) states, by means of the talk produced during the construction and revision of writings, researchers can have access to the learners' cognitive processes and investigate its effect on learners' language learning.

Ellis (2000) argues that social interaction can facilitate the learning process and help the learners in their learning process. Supporting the results of this study, Fahim and Haghani (2012) state that an individual cannot become a competent speaker of a language without help from other people since each learner has a ZPD which can be scaffolded by others; therefore, the learner can move to regulate the activity by herself/himself. Scaffolding the learners can have various forms, such as explicitly drawing the learner's attention to a form, explaining the rules, etc. (Brooks & Swain, 2009).

The findings of the study have great implications for the teachers regarding the usefulness of CW in L2 writing classroom. CW can be used as a tool to increase collaboration among learners in the classroom. In other words, through CW, learners

can move from other-regulation to self-regulation. Moreover, writing teachers should help learners work collaboratively with each other which results in more autonomous and responsible learners. To enhance collaboration in the classroom, teachers should spend should teach the rules and skills of collaboration to the learners. Moreover, learners can increase their tolerance and cooperation when they work with each other.

As any human production, this study has some limitations. The first one was the gender of the participants limited to female learners; hence, the results may be different with male learners. In addition, the results of this study may be unique to this particular population under investigation, and may not be universal in nature. In order to gain more reliable information and findings about the study variables, other studies should be carried out with more participants in different contexts. The used tools in this study were written essays and the questionnaires, and the other useful tools such as observations, diaries, and think-aloud protocols which can add to the reliability of the findings were not used. Therefore, due to the pedagogical and contextual restrictions, further research is called to push the frontier knowledge so as to provide a fruitful English teaching and learning conditions especially regarding writing skill in English classes.

As the findings indicated, collaborative writing in second language writing is an effective means of improving L2 learners' writing skill because it mediates language learning and helps learners to improve confidence and motivation and think critically. In Iranian EFL context, learners' L2 writing skill is not well-developed due to time restrictions and lack of motivation. Therefore, giving and receiving feedback from peers not only promotes the level of the learners' writing but it also offers them opportunities to communicate with each other, share ideas and give useful comments and suggestions.

REFERENCES

Ahangari, S. (2014). The effect of self, peer and teacher correction on the pronunciation improvement of Iranian EFL learners. *Advances in Language and Literary Studies, 5*(1), 81-88.

Aidinlou, N. A., & Kejal, D. A. (2012). Socio-cultural factors and teaching a foreign language. *International J. Soc. Sci. & Education, 2*(2), 139-143.

Aljaafreh, A., & Lantolf, J. P. (1994). Negative feedback as regulation and second language learning in the zone of proximal development. *The Modern Language Journal, 78*, 465–483.

Allen, N., Atkinson, D., Morgan, M., Moore, T., & Snow, C. (1987). What experienced collaborators say about collaborative writing. *Journal of Business and Technical Communication, 1(2),* 70-90.

Barron, B. (2003).When smart groups fail. *Journal of Learning Science, 12*(3), 307-359.

Behin, B., & Hamidi, S. (2011). Peer correction: The key to improve the Iranian English as a foreign language learners' productive writing skill. *Procedia-Social and Behavioral Sciences, 30*, 1057-1060.

Biari, R. & Jafari, S. (2013). The impact of collaborative writing on the writing fluency of Iranian EFL learners. *Journal of Language Teaching and Research, 4*(1), 164-175.

Brooks, L., & Swain, M. (2009). Languaging in a collaborative setting. In A. Mackey & C. Polio (Eds.), *Multiple perspectives on interaction: Second language research in honor of Susan M. Gass* (pp.58–89). New York: Taylor & Francis/Routledge

Brown, D. (1994). *Teaching by principles. An interactive approach to language pedagogy.* New Jersey: Prentice Hall Regents.

Bruffee, K. A. (1984). Collaborative learning and the conversation of mankind. *College English, 28*(1), 181–8.

Dillenbourg, P. (1999). *Collaborative learning: Cognitive and computational approaches. Advances in Learning and Instruction Series.* New York, NY: Elsevier Science, Inc.

Ede, L., & Lunsford, A. (1985). Let them write- together. *English Quarterly, 18*(4), 119-127.

Ellis, R. (2000). Task-based research and language pedagogy. *Language Teaching Research, 4*(3), 193-220.

Fahim, M., & Haghani, M. (2012). Sociocultural perspectives on foreign language Learning. *Journal of Language Teaching and Research, 3*(4), 693-699.

Fahiminia, R., Jahandar, S., & Khodabandehlou, M. (2013). The impact of collaborative learning on Iranian EFL learner's belief about vocabulary learning. *An Online International Journal, 3*(2), 150-163.

Foster, J. (2008). *Effective writing skills for public relations.* Kogan Page Ltd.

Fung, M. Y. (2006). *The nature and dynamics of collaborative writing in Malaysian tertiary ESL setting* (Unpublished Doctoral dissertation). Massay University, Palmerston, North New Zealand.

Hilgers, T. (1987). Young writers facing a new collaborative writing task. *Journal of Research in Childhood Education, 2*(2), 108-116.

Hirvela, A. (1999). Collaborative writing: Instruction and communities of readers and writers. *TESOL Journal, 8*(2), 7–12.

Jafari, N., & Nejad Ansari, D. (2012). The effect of collaboration on Iranian EFL learners' writing accuracy. *International Education Studies, 5*(2), 125-131.

John-Steiner, V. & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational Psychologist, 31* (3/4), 191-206.

Lantolf, J. P. (2000). Second language learning as a mediated process. Language Teaching: *The International Abstracting Journal for Language Teachers and Applied Linguistics, 33,* 79-96.

Lee, M. (2011). *Decision making in a collaborative writing task.* Proceedings of the 3rd CELC Symposium, National University of Singapore, 159-168.

Liu, J., & Hansen, J. (2002). *Peer Response in Second Language Writing Classrooms*. Ann Arbor: The University of Michigan Press.

Maarof, N, Yamat, H. & Li Li, K. (2011). *Role of teacher, peer and teacher-peer feedback in enhancing ESL students' writing.* Faculty of Education, Universiti Kebangsaan Malaysia.

Meihami, H., Meihami, B., & Varmaghami, Z. (2013). The effect of collaborative writing on EFL students' grammatical accuracy. *International Letters of Social and Humanistic Sciences, 11,* 47-56.

Shehadeh, A., & Coombe, C. (2010). *Applications of task-based learning in TESOL*. Alexandria, VA: TESOL.

Stewart, D. (1988). Collaborative learning and composition: boon or bane? *Rhetoric Review, 7*(1), 58-83.

Storch, N. (1999). Are two heads better than one? Pair work and grammatical accuracy. *System, 27,* 363-374.

Storch, N. (2005). Collaborative writing: product, process, and students' reflections. *Journal for Second Language Writing, 14(3),* 153-73.

Storch, N. (2011). Collaborative writing in L2 contexts: Processes, outcomes, and future directions. *Annual Review of Applied Linguistics, 31*, 275-288.

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

Storch, N., & Wigglesworth, G. (2007). Writing tasks: The effects of Colloboration. In M. Garcı´a Mayo (Ed.), *Investigating tasks in formal language learning* (pp. 157–177). Clevedon, UK: Multilingual Matters.

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

Tavakoli, M., & Rezazadeh, M. (2014). Individual and collaborative planning conditions: effects on fluency, complexity and accuracy in L2 argumentative writing. *Journal of Teaching Language Skills, 5*(4), 85-110.

Tocalli-Beller, A. (2003). Cognitive conflict, disagreement and repetition in collaborative groups: Affective and social dimensions from an insider's perspective. *The Canadian Modern Language Review, 60*(2), 143–71.

Tsai, S. (1998). *The effects of cooperative learning on teaching English as a foreign language to senior high school students (*unpublished master thesis). National Kaohsiung Normal University.

Turuk, M. Ch. (2008). The relevance and implications of Vygotsky's sociocultural Theory in the second language classroom. *ARECLS, 5,* 244-262.

Villamil, O. S., & de Guerrero, M. C. M. (1998). Assessing the impact of peer revision in L2 writing. *Applied Linguistics*, *19*(4), 491–514.

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

Weigle, S. C. (2002). *Assessing writing,* Cambridge: Cambridge University Press.

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