

## **L2 Discourse Co-construction within the Learner's ZPD**

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### **Abstract**

This study examined the effect of the ZPD-based discourse scaffolding on EFL learners' co-construction of L2 metadiscourse performing collaborative writing tasks and explored the discourse scaffolding dynamics. The participants were 160 EFL students that were assigned to four different treatment conditions: (i) formal teaching, (ii) input enhancement, (iii) non-ZPD interaction, and (iv) ZPD-based L2 discourse scaffolding. The ZPD learners were required to audio-record their task-focused social interactions and also write four weekly compositions and one delayed essay. The results showed a substantial effect for the ZPD-based L2 discourse scaffolding on the ZPD participants' use of English metadiscourse. Further, the microgenetic analysis of the social interactions revealed that the ZPD groups employed manifold scaffolding dynamics at various ZPD levels to expedite task performance and their peers' use of L2 metadiscourse. The asymmetrical discourse construction grew mutual with the less capable peers offering increasingly more self-initiated repairing moves within their activated ZPD. Also, the students' essays were rated as more reader-friendly over time. Finally, the implications for L2 research and pedagogy are discussed.

**Keywords:** 1. ZPD (The Zone of Proximal Development) 2. Discourse Scaffolding 3. Co-construction 4. Metadiscourse 5. Scaffolding Dynamics 6. Microgenetic Analysis.

### 1. Introduction

The recent history of second language learning (SLL) research has witnessed a theoretical and methodological controversy over whether L2 learning is primarily cognitive or social. Most notably, Firth and Wagner (1997, 1998, 2007) argue that the theoretical imbalance between the social and cognitive dimensions of S/FL use and acquisition that is in favor of individual cognition hinders progression within the field and thus results in "distorted descriptions of and views on discourse and communication, and interpersonal meaning--the quintessential elements of language" (1997: 288). They then call for a critical assessment of current presuppositions, methods, and fundamental concepts in second language acquisition (SLA) and, subsequently, for a reconceptualization of SLA as a more socially and contextually oriented enterprise. This social, situated view of L2 learning has received extra impetus since the 1990s by an increasing interest in the application of Vygotsky-inspired sociocultural theory (SCT) to second and foreign language research. As Lantolf (2000, 2002) points out, the central and distinguishing concept of SCT is that human mind is always and everywhere socially and semiotically mediated within the Zone of Proximal Development (ZPD), or "the domain of knowledge or skill where the learner is not yet capable of independent functioning, but can achieve the desired outcome given relevant scaffolded help" (Mitchell and Myles, 2004: 196).

Sociocultural tenets and concepts have almost been neglected in Iran, and most studies have focused on linguistic, cognitive, and affective aspects of SLA. Also, sociocultural studies to date have typically been mostly case studies concentrating on individual lexical or morphosyntactic features as defined in traditional descriptive grammars. Ohta (2005: 515) argues that future research should attempt to "bring the ZPD out from the shadows" and investigate what these sociocultural notions have to say regarding the development of learner discourse over time. Future SCT L2 research should also focus on how L2 discourse scaffolding process unfolds in time among different ZPD-groups in different proximal contexts, and what scaffolding

strategies or mechanisms are employed by different co-participants of the learning process. This study was thus an attempt to shed light on these issues.

## 2. Background

Vygotsky's work was part of a comprehensive attempt to create an appropriate methodology or a qualitatively new analytic framework, different from 'naturalistic' approaches to history, for the study of human development, specifically, the development of what he called "the higher intellectual functions" (Vygotsky, 1986: 66). Vygotsky rejects a Cartesian dualistic view of mind and embraces instead a view attributed to Hegel, whose philosophy rested on notions of historical and cultural situatedness (Platt and Brooks, 2002). A socioculturally inspired perspective on 'language as communicative activity' (LCA) then calls into question the ontological distinction between language and the world and is "characterized by its concern with the interaction between communicative activity and psychological processes" (Lantolf and Thorne, 2006: 18). Lantolf (2004: 30-31) holds that SCT is not a theory of the social or cultural aspects of human existence. It is, rather, a theory of mind that recognizes the central role that social relationships and culturally constructed artifacts play in organizing uniquely human forms of thinking. SCT, according to Thorne (2005), "offers a framework through which cognition can be investigated systemically without isolating it from social context or human agency" (393).

### 2.1 Mediated learning, ZPD-based scaffolding, and microgenesis

As noted, the integral theme of Vygotsky-inspired SCT is that the human mind is always and everywhere *mediated* primarily through linguistically based communication. Lantolf (2000) believes that genetically determined mental processes and capacities are reorganized into specifically human forms of consciousness as a result of the culture-specific interactions individuals have with others (social mediation) and with the simple or complex, physical or symbolic artifacts constructed and developed by the culture (semiosis). For any type of mediation to be useful and result in further development, "it must be sensitive to the individual's or even group's *zone of proximal development*" (Lantolf, 2000: 80; emphasis in original).

The ZPD has been defined by Vygotsky (1978: 86) as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." The ZPD thus defines those functions that have not yet matured but are now in the process of maturation or in the state of formation, "functions that will mature tomorrow but are currently in embryonic state" (p. 86). The ZPD notion has recently been fruitfully applied to second or foreign language learning research. For instance, Aljaafreh and Lantolf (1994) in their pioneer work examine the effects of expert's negative feedback on adult learners' microgenetic development (i.e., local, contextualized, and moment-to-moment learning resulting from particular interactions in specific sociocultural settings) along a 'Regulatory Scale' in the ZPD.

The concept of scaffolding was originally used by Vygotsky and Luria in view of how adults introduce children to cultural means and was later popularized by Wood, Bruner, and Ross (1976) as a metaphor for a mother's verbal efforts to maintain conversation with her child to indirectly promote language acquisition. In educational psychology, the concept of scaffolding refers to the other-regulation process within the ZPD of a less skilled learner by which tutors--parents, teachers, or more skilled peers--prompt or help him or her solve a problem, and is supposedly most helpful for the learning or appropriation of new concepts (Guerrero and Villamil, 2000; Mitchell and Myles, 2004).

As noted, for any type of scaffolding to be useful (and result in development), it must occur within the ZPD. Aljaafreh and Lantolf (1994: 468) argue that effective scaffolding should be *graduated* (sensitive to the learner's level of help required), *contingent* (offered only when needed), and *dialogic* (achieved through the medium of dialogue). Pedagogical scaffolding is, according to van Lier (1996, 2004), contingent, strategic behavior that requires 'just-right' and 'just-in-time' responses and interventions as well as a range of concerns at various levels of pedagogical activity being integrated into concerted momentary and long-term action. Simply put, it is determined by an expert's or a (more capable) peer's scrutiny of what is easy and challenging for the learner and is guided by "a long-term sense of direction and continuity, a local plan of action, and a moment-to-moment interactional decision-making" (van Lier, 1996, p. 199).

Another basic promise is that "adult tutorial interventions should be inversely related to the child's level of task competence--so, for example, the more difficulty the child has in achieving a goal, the more directive the interventions of the mother should be" (Wood, 1980: 284).

The ZPD is viewed as an emergent and opened trait of the learner that unfolds through negotiation and expands the potential for learning by providing opportunities which are not anticipated in the first place (Wells, 1998; Nassaji and Swain, 2000). Cheyne and Tarulli (1999), following Bakhtin (1990), reject the notion of productivity-as-consensus and argue for "a dialogical mind" and "a community of different and often conflicting voices" that dialogically involve the individuals in a productive "struggle with difference and misunderstanding" (p. 89) and in actively making decisions about which actions/pathways to progress. Finally, van Lier (2004) represents an expanded, 'ecological' view of the ZPD and scaffolding that moves beyond the traditional expert-novice context by including other *proximal contexts* in the classroom: symmetrical peer-peer co-participation; interaction with less-capable peers; and self-expanding of the ZPD through inner instructional dialogue.

## 2.2 Sociocultural theory and SLA

In SCT, learning a language is viewed to be profoundly bound to social practices and contingent on the learner's participation as a competent member in the language practices of a social group (Hall, 1993; Lantolf and Appel, 1994; Lantolf and Pavlenko, 1995). Therefore, in SCT, S/FL learning is not represented as 'language acquisition' *per se* (to use the traditional metaphor) but rather as "changing participation" (Pavlenko and Lantolf, 2000: 174). In Swain and Lapkin's (1998) words, the "co-construction of linguistic knowledge in dialogue *is* language learning in progress" (p. 321). Wells (2006) holds that knowledge is 'created in the discourse between people doing things together' (in Bakhtinian sense).

SCT-based L2 research has shown how students' joint management and co-construction of L2 discourse is based on the establishment of intersubjectivity (Donato, 1994) in the sense of a state of shared focus and intention to progress in the ZPD; intentionality to recruit the learner's interest and attention in the task' (Wood, et al., 1976) and maintain goal orientation (Guerrero and Villamil, 2000); negation for meaning; and the use

of Language spontaneous playfulness (Sullivan, 2000). This research has also indicated how the classroom community serves as a mediator, defining rules of conduct that value certain forms of agency and involvement (Lantolf, 2002). In summary, the application of the sociocultural perspectives to S/FL development has been a "productive and exciting bend in the road" for the field of SLA, and continues to "generate new scholarly activity" (Ohta, 2005: 505). Mitchell and Myles (2004) argue that sociocultural theory is still a relative newcomer to SLA and thus necessitates further exploration of its original features and more investigation of its claims.

### 2.3 Null hypotheses

This study, adopting a triangular data-elicitation approach and a *pretest [treatment] posttest control group design*, intended to probe into the co-construction of L2 discourse through activity-based social interaction, examine the effect of peer/expert scaffolding on the L2 learner's development of metadiscourse within the ZPD, and compare the socioculturally-inspired L2 pedagogy with other approaches to L2 instruction, especially Krashen's (1982, 1985) Input Hypothesis. This study, thus, aimed to address the following two null hypotheses through the quantitative analysis of the participants' writing pretests and posttests:

1. ZPD-sensitive dialogic L2 discourse scaffolding has no effect on the development and use of the L2 metadiscourse in EFL learners' task-based writing.

2. There are no significant differences among the instructional situations of ZPD-based L2 discourse scaffolding, non-ZPD mediation-in-interaction, teacher-directed formal teaching, and only-comprehensible-input enhancement without talk-in-interaction considering their effects on EFL learners' development and use of metadiscourse in their task-based writing.

The study also addressed the following research questions by adopting a qualitative, microgenetic approach to the ZPD participants' transcribed social interactions:

3. What discourse scaffolding mechanisms do ZPD peers employ doing writing tasks to both contribute to the emergent discourse and overcome the discursal impasses?

4. What is the effect of the ZPD-based L2 discourse scaffolding on the EFL learners' inter-session use of metadiscourse in their task-based writing?

### 3. Method

#### 3.1 Participants

The participants of this study comprised 160 EFL learners enrolled as undergraduate (mainly third-semester) students majoring in either 'English Translation' or 'English Literature' at Allameh Tabataba'i University in Tehran. Forty of them took part in the 'instrument-development' phase, and 120 others participated in the 'instruction' phase of this study, and they were both male and female; native speakers of Persian (one Chinese); mainly in their early twenties; attended four intact EFL writing classes at the university (February-June, 2007); and had not been to English speaking countries. The researcher was the instructor of the ZPD class and attended the other classes with their own instructors leaving the classrooms except for the 'formal-teaching' (or Control) class that was basically conducted by its original instructor.

#### 3.2 Instruments

An actual version of TOEFL (ETS, Aug. 2002) was first used to explore the homogeneity of the participants. A task-based (metadiscourse-oriented) writing test was also developed and was used by the researcher to assess the participants' use of English metadiscourse resources in writing at the pretest and posttest times. The test comprised three (one 'indirect' and two 'direct') writing tasks each demanding a different discourse mode for its operation: (i) a cloze passage; (ii) a picture-cued narrative writing task, and (iii) a quotation- and pie-graph-motivated essay writing. The validation process of the writing test was based on Weigle's (2002) guidelines as well as Weir's (2005) contributory conception of construct validity. As for the *a priori* theory of the construct in the test specification, Hyland's (2005) classification of metadiscourse in writing was adopted. Also, think-aloud protocols and retrospective interviews were used in the "empirical task analysis" (Chapelle, 1998, p. 51; Weigle, 2002, p. 50) to ensure that the processes and operations documented doing the writing tasks were similar to those included in the definition of the construct.

The task-specific scoring scale integrated an analytic scoring technique

with Hyland's (2005) recent model of metadiscourse: (i) the exact word method for Task A, (ii) a scoring scheme for Task B, and (iii) another scoring scheme for Task C. The three subscales were combined in a single composite-score of 1-20 for each individual's performance on the writing test. Several consecutive standardization meetings were held between the raters. The piloted scoring schemes of the writing test enjoyed high degrees of, respectively, test-retest and interrater reliability (Task A: (test-retest)  $r = .92$ ; Task B: (interrater)  $r = .86$ , *Adjusted rxx'* = .924; Task C: (interrater)  $r = .83$ , *Adjusted rxx'* = .907). In Weir's (2005: 22) sense, the test therefore enjoyed high estimates of "scoring validity" as well.

### 3.3 Data collection procedures

A triangular approach utilizing both quantitative and qualitative research methodologies was adopted as the data-elicitation methodology in this study, including:

1. pretesting-posttesting the groups' development and use of metadiscourse in writing
2. audio-recording and transcribing the ZPD groups' social interactions for subsequent microgenetic (i.e., intra-session) analysis, and
3. macrogenetic (i.e., inter-session) analysis of the learner-specific weekly compositions and their 'delayed' essay (nearly) three weeks after the posttests.

The four different treatments administered in this study were as follows:

**A. Teacher-directed formal teaching:** This class was basically teacher-fronted and followed the normal seatwork procedures or processes of most L2 classrooms in Iran.

**B. Input-enhancement:** This setting began with comprehensible 'input-flooding,' without allowing for any social (dialogic) interaction inside the classroom.

**C. ZPD-based scaffolding:** This study drew on Aljaafreh and Lantolf's (1994) explanation of transition from intermental to intramental functioning as the learners move through the ZPD toward self-regulation and control over the target structures (p. 470):

*Level 1.* The learner is not able to notice, or correct the error, even with intervention from the expert.

*Level 2.* This level indicates some degree of development when the



learner is able to notice the error, but cannot correct it, even with intervention.

*Level 3.* The learner is able to notice and correct the error, but solely with scaffolding through providing clues or expanding the feedback.

*Level 4.* Minimal feedback is needed for the learner to notice and correct an error.

*Level 5.* The learner is fully self-regulated and autonomous in constructing L2 discourse.

These transitional levels display three general stages of microgenetic development: other-regulation (levels 1-3), partial self-regulation (level 4), and self-regulated (level 5) as a result of the achieved microgenesis. The researchers also propose a regulatory scale (Table 1) that was partially relied upon as the basis of the ZPD-based L2 discourse scaffolding.

Table 1: Ranking L2 discourse scaffolding on a regulatory scale (from implicit, strategic to explicit)

0	Tutor asks the learner to read, find the errors, and correct them independently, prior to the tutorial
1	Construction of a 'collaborative frame' prompted by the presence of the tutor (or a more capable peer) as a potential dialogic partner
2	Prompted or focused reading of the sentence that contains the error by the learner or the tutor
3	Tutor indicates that something may be wrong in a segment (e.g. sentence, clause, line-- 'Is there anything wrong in this sentence?')
4	Tutor rejects unsuccessful attempts at recognizing the error
5	Tutor narrows down the location of the error (e.g. tutor repeats or points to the specific segment which contains the error)
6	Tutor indicates the nature of the error, but does not identify the error (e.g. 'There is something wrong with the tense marking here')
7	Tutor identifies the error ('You can't use an auxiliary here')
8	Tutor rejects learner's unsuccessful attempts at correcting the error
9	Tutor provides clues to help the learner arrive at the correct form (e.g. 'It is not really past but something that is still going on')
10	Tutor provides the correct form
11	Tutor provides some explanation for use of the correct form
12	Tutor provides examples of the correct pattern when other forms of help fail to produce an appropriate responsive action

(Adapted from Aljaafreh and Lantolf, 1994: 471)

The ZPD-class pretest performance was taken as the basis of group formation in a way that each ZPD-group had variously capable peers: a 'captain' (A) as the "more capable peer" (Vygotsky, 1978: 85), an 'assistant' (B), and one or two least achieving peers (C and D). The captains attended 'ZPD-based scaffolding-practice' (mini-) sessions before the course and before each task-performance session (Table 2). At the beginning of the first writing session, the instructor forming a large community of practice doing a whole-class cloze passage discussed Hyland's (2005) recent model of metadiscourse resources. The groups were then required to sit around constituting small "communities of practice" of their own (Wenger, 1998), get involved in social interactions doing the new task, and audio-record their task-focused interactions. It is important to note that the researcher also took turns to intervene in each group's dialogic activity and scaffolded their L2 discourse co-construction process within their ZPDs, especially focusing on metadiscourse resources. After each session, each individual was required to write another weekly essay. The instructional period lasted for five weeks.

Table 2: The instruction of the ZPD-based class

Week	Participants	Sessions	Activities	Time	Homework
1	ZPD-captains	2	ZPD-based scaffolding practice	45 Mins	
*1	ZPD- groups	1	Class Task (cloze); Task 1	75 Mins	
2	ZPD-captains	1	ZPD-based scaffolding practice	15 Mins	
2	ZPD- groups	1	Task 1 continued	60 Mins	Essay 1
3	ZPD-captains	1	ZPD-based scaffolding practice	15 Mins	
3	ZPD- groups	1	Task 2	60 Mins	Essay 2
4	ZPD-captains	1	ZPD-based scaffolding practice	15 Mins	
4	ZPD-s groups	1	Task 3	60 Mins	Essay 3
5	ZPD-captains	1	ZPD-based scaffolding practice	15 Mins	
5	ZPD- groups	1	Task 4	60 Mins	Essay 4
6	All classes		Posttest		
9	ZPD- groups				Delayed Essay

\* Those in bold type show the main instructional sessions and activities.

**D. Non-ZPD scaffolding:** In brief, neither ZPD-based group formation nor ZPD-sensitive L2 discourse scaffolding was achieved in this treatment setting. At last, all classes were posttested.

#### 4. Results

Descriptive statistics and two one-way ANOVAs computed for the TOEFL and pretest scores indicated that all four groups were normally distributed, and there were no statistically significant differences among the four groups in their general language ability and their prior metadiscourse learning. A GLM-Repeated Measures ANOVA (Table 3. Below) was then run to compare the multiple group means (i.e., Control, Input, Non-ZPD, and ZPD-sensitive) of this study at two various points in time (i.e., pretest vs. posttest).

Table 3: The glm-repeated measures ANOVA result of the writing pre/posttest (time)

#### Tests of within-subjects effects

Measure: MEASURE\_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity	177.676	1	177.676	87.880	.000
	Assumed	177.676	1.000	177.676	87.880	.000
	Greenhouse-Geisser	177.676	1.000	177.676	87.880	.000
	Huynh-Feldt	177.676	1.000	177.676	87.880	.000
	Lower-bound					
Time*InstructionType	Sphericity	214.920	3	71.640	35.434	.000
	Assumed	214.920	3.000	71.640	35.434	.000
	Greenhouse-geisser	214.920	3.000	71.640	35.434	.000
	Huynh-Feldt	214.920	3.000	71.640	35.434	.000
	Lower-bound					
Error (Time)	Sphericity	234.529	116	2.022		
	Assumed	234.529	116.000	2.022		
	Greenhouse-Geissen	234.529	116.000	2.022		
	Huynh-Feldt	234.529	116.000	2.022		
	Lower-bound					

\*Sig p < 0.05

The Mauchly's Test was not significant, meaning that the p-value labeled Sphericity Assumed given in the rows in Table 3 can be accepted with no need to get down the more conservative tests in the table. The

results of the GLM-Repeated Measures ANOVA in Table 3 indicate a statistically significant difference for the within-subjects variable of Time, meaning that the learners' mean performance and change from one time (pretest) to another (posttest) was noticeably significant ( $F = 87.880$ ,  $p < 0.05$ ). More important, a statistically significant effect was found for Time×Instruction Type interaction ( $F = 35.434$ ,  $p < 0.05$ ), showing that this significant difference of change or improvement occurred among the groups. The results of the GLM-Repeated Measures ANOVA for the between-subjects effects of Group (i.e., Instruction Type) supported this finding.

The results of the requested post hoc pairwise comparisons (using the Bonferroni test to adjust the stated probability value of  $P = 0.05$  due to making multiple possible comparisons) showed that the ZPD group outperformed or improved significantly better than the other groups (i.e., Control, Input, and the Non-ZPD groups) that received no ZPD-based L2 discourse (peer/expert) scaffolding from pretest time to the posttest time. No statistically significant differences were found among the Non-ZPD group and the other groups. Therefore, the two null hypotheses of the study were safely rejected.

Table 4: The results of the post hoc pairwise comparisons

Pairwise Comparisons						
Measure: MEASURE_1						
(I) Type of Instruction	(J) Type of Instruction	Mean Difference (I-J)	Std. Error	Sig. <sup>a</sup>	95% Confidence Interval for Difference <sup>a</sup>	
					Lower Bound	Upper Bound
Control Group	Input Group	.233	.761	1.000	-1.809	2.276
	Non-ZPD Group	.033	.761	1.000	-2.009	2.076
	ZPD Group	-2.275*	.761	.020	-4.319	-.2323
Input Group	Input Group	-.233	.761	1.000	-2.276	1.809
	Non-ZPD Group	-.200	.761	1.000	-2.243	1.843
	ZPD Group	-2.508*	.761	.008	-4.551	-.466
Non-ZPD Group	Input Group	-.033	.761	1.000	-2.076	2.009
	Non-ZPD Group	.200	.761	1.000	-1.843	2.243
	ZPD Group	-2.308*	.761	.018	-4.351	-.266
ZPD Group	Input Group	2.275*	.761	.020	.232	4.318
	Non-ZPD Group	2.508*	.761	.008	.466	4.551
	ZPD Group	2.308*	.761	.018	.266	4.351

Based on estimated marginal means

\*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Bonferroni.

#### 4.1 L2 Discourse scaffolding dynamics within the ZPD

For sociocultural theorists, qualitative methodology and close scrutiny of the participants in social interactions and social settings are of prime importance. It is argued that when social interactions are reduced to tables and figures, the whole is sacrificed for a partial picture that may not apply to any real-world situation, and other researchers are thus left with no way to see what really transpired (Foster and Ohta, 2005). The ethnographic analysis carried out here to explore scaffolding mechanisms of L2 discourse within the ZPD concentrated on the transcripts of the social interactions of the ZPD groups performing four collaborative writing tasks.

**4.1.1** The first group of scaffolding dynamics emerged within the groups operationalizing, managing, regulating, or becoming engaged in the given tasks. The captains' statements like *Read, Jane read, OK, what is our first thing about?* or *OK, we want to compare Japan and India* suggest that they wanted to make themselves as well as their peers engaged in the task. The groups' initial 'metatalk' such as *Should we write on the back of this paper?* or asking the instructor *Should we write all these statistics?* indicated that the partners were trying to understand the requirements in their own terms and gain control of the task. Their metatalk was sometimes in Persian (i.e., contingent use of L1) as a linguistic resource that facilitated communication and achievement of the task. There were also various instances of 'intentionality moves' aimed at recruiting the learner's interest and attention in the task.

**4.1.2** Particularly striking was the groups' establishment and maintenance of intersubjectivity (Rommetveit, 1985) by sharing a common perspective ('we') and an equal degree of commitment to the common task, for instance, by laughing at an opening joke or by achieving "joint regard" (Lidz, 1991) and trying to see the activity through other peers' eyes. Intersubjectivity is essential for the development of discourse within the ZPD and propitious for the attainment of self-regulation (Villamil and Guerrero, 2006).

##### *Episode 1*

B: Good, what did you say **we** should do?

A: OK, nothing more ... first, **we** write a topic sentence and then **we** develop it ...

B: **Our** topic sentence ... **we** should put something in it that **we** can now include it here ... for instance ... Acid rain is formed by four causes ...

A: Acid rain which is formed by four main causes ... now after it ...

B: No, there are four main causes that cause acid rain ... or which lead to acid rain production ...

A: Now, how do you want to say its effects?

B: No no ... first **we** write the causes and then its effect ... finished? ... since it is explaining this (task) ... not an essay ...

A: Since if **we** want to say all ...

B: No no ... no need to say all ... **we** have two paragraphs ... each has a separate topic ...

A: OK

C: Which sentence **we** said is better?

B: I suggested **we** say both causes and effects ...

C: That is also possible ...

A: yes ... **we** can say that too ... saying acid rain has both causes and effects ...

B: How is this? ... "Acid rain is caused by several main causes and has disastrous effects on the environment and the organisms? ... (writing)

A: You were making fun of my handwriting ... look at yours ... (laughter)

The participants' occasional use of language (spontaneous) playfulness and thus displaying humor was also notable as a social move to sustain intersubjectivity and yet attain further affective involvement in the activity. From a sociocultural stance, language playfulness is viewed to be influential in creating the ZPD in an imaginary rule-based situation within which the learner behaves beyond his average level (Sullivan, 2000). In Vygotsky's words, "What passes unnoticed by the child in real life becomes a rule of behavior in play" (1978, p. 95).

### *Episode 2*

B: First say what you want to talk about ...

C: First say a sentence that is general ... we develop it later?!!

D: In the name of God ... (a form of praying to God almost always used by Muslims as an opening of discourse) ... (laughter)

A: I'll say in Persian, you write it to be translated later ...

*Episode 3*

A: (Talking about farming methods in a developed country) ... they give a lot of manure to ...

B: to ... to their children ... (laughter)

**4.1.3** There were also various instances of 'negotiation for meaning' moves that intended to promote understanding by highlighting for the peers what was important to notice using a specific metadiscourse resource, elaborating detail, and, sometimes, marking critical features and discrepancies between what has been produced and the ideal solution (Wood et al., 1976).

*Episode 4*

A: "... meaning directly and not intermingled with a second ... material"

C: substance

B: What should we do now? ... We have defined it ...

A: Now we should say what happens in the distant regions ...hm ...the same gases ...

B: No, use a transition ...

A: **Surprisingly** ...good [khob] ...

D: **Whereas** ... whereas ...

A: No, we want to say that contrary to the fact that it isn't expected from it ... for instance ... it isn't needed ...

B: OK, **surprisingly**, the gases ...

D: the gases ... acid rain ...

A: No, I want to say ... the same gases ... can travel some 2000 km away from the spot they have been produced ...

Further, when the discourse co-construction process temporarily halted, the (more skilled) learners became involved in 'experience sharing,' 'situation extension' (Bruner, 1978), that is, extending the scope of the immediate situation to alternative situations for which an earlier solution would work, or achieved 'transcendence' (Lidz, 1991) through helping the learner make associations to related past (learning) experiences and project him/herself into the future and, in this way, served as a 'communicative ratchet,' in Bruner's (1978) sense, not to let the group slid back to a lower

level. These peers also resorted to explicit instruction or metalinguistic information.

*Episode 5*

B: OK, put *or* here ...

D: Let's finish this sentence and go to the other one ...

C: **In the meanwhile** ... excuse me, in the meanwhile?!!

B: We can't use this here ... let's move to the other

D: Why don't we put *and*

A: God [baba] ... I put *and* here ...

C: So why don't you use *in the meanwhile*?!!

A: **Meanwhile** is for the beginning of the sentence ... it can't come in the middle of the sentence ...

Likewise, they sometimes 'modeled' L2 metadiscourse resources needed (Wood et al., 1976) for the unfolding discourse.

*Episode 6*

C: Let's say usually ... one more thing ... Carbon?!!

A: I don't know ... now let's write what effects it leaves behind ...

D: First, we should say where it comes from then what effects it has.

A: Aha ... now say the smoke of the factories ... hmm ... now say these greenhouse gases that were mentioned above ...

D: so-called?!!

A: No, **aforementioned** is better ...

D: What do you want to say?

A: The greenhouse gases that were mentioned above by ourselves in previous sentences ... (spelling **aforementioned** to the peers) a...f...o...r...e ...

**4.1.4** Similarly, the expert or the more capable partners displayed 'challenge to advance' (Lidz, 1991) prompts within the ZPD, or expressed their 'praise' indicating to the engaged peers that they have made some change, thereby keeping high their self-esteem:

*Episode 7*

A: (halted on two blanks in the cloze passage, Task 4) ... in general?!!



... (calls the instructor)

C: (talking to the instructor) We don't know if it is right or not ...

A: We have read up to here, but, well, we don't have one there and one here ...

Inst: (reads the sentence and after thinking for a short while aware of the fact that it is the 4<sup>th</sup> task and 5<sup>th</sup> session) Look, in the previous sentence ... you see here ... it talks about the deep-seated origins of the ... hmm ...of the elevation of the intellectual aspects of mind over ... over what?

B: Over ... hmm ... over emotional aspects ...

Inst: Right ... but look ... in the next sentence, probably the writer is going to hmm going to ... mention those ... I mean those deep-seated ...  
hmm

B: origins ...

Inst: Yeah, now look at the organizational markers given above ... see which one fits in ...

A: Historically?!!

Inst: One more thing ... look next sentence is the present perfect tense ...

C: Oh ... in recent years

Inst: Good, but this sentence ... hmm it talks about philosophers ... some great philosophers from the past...

C: Oh, Greeks ... Greek philosophers ... I mean 12 ... **Ever since the ancient Greeks** ...

Inst: Yes, bravo ...

**4.1.5** Finally, there were instances of 'contingent responsivity' moves when the mediating peer read the partner's cues related to his or her affective needs, and responded by releasing some of the tight control of the task and inviting him/her to voice his/her attitude or make decisions. For instance:

### *Episode 8*

B: Once the acid rain pours ...

A: Now, the effects ...

C: God, it's an interaction ... listen to someone's attitude ...

B: God (seemingly crying) ...she doesn't let me talk, I strangle you (joking) ... you interrupt me ...

A: OK, sorry ... I was just thinking aloud ...I know it's also your essay ... so, once the acid rain is pouring ... for instance ...it causes this and that

B: If it rains in residential areas ...

A: (referring to D) You say something ...

To sum up, these discourse scaffolding dynamics evidenced at various levels of the participants' ZPD prepared the ground for the participants' microgenetic development of self-regulation in task-related L2 discourse-building, in general, and in the use of L2 metadiscourse in order to construct a 'reader-friendly' discourse, in particular.

#### 4.2 Macrogenetic analysis of the learner-specific essays

This inter-session analysis (Table 5) aimed to explore the macrogenetic development of L2 metadiscourse focusing on the weekly essays of only 10 ZPD participants randomly selected from a total of 30 others in the class:

Table 5: ZPD-Based Inter-Session Improvement in the Use of Metadiscourse

Metadiscourse Use	Essay 1	Essay 2	Essay 3	Essay 4	Delayed
Total (Avg.*)	48	65	43	45	70
Inappropriate (Avg.)	35	22	9	6	10
Appropriate (Avg.)	13	43	34	39	60
% Appropriate (Avg.)	27.08 %	66.15 %	79.06 %	86.6 %	85.7 %

Avg.\* is Average for 10 participants chosen at random

In sum, a progressive trend was evidenced in the participants' development and use of metadiscourse (27.08 % to 86.6 %) across their weekly-composed essays. It was initially evidenced that the written texts were almost compact with metadiscourse markers--probably due to their awareness of the aim of the course--being either inappropriately used in terms of the discourse function they were to serve or structurally incorrect sometimes being literally translated from the participants' first language. Interestingly, a slight decline in their inappropriate use of metadiscourse was witnessed after the third session followed by a noticeable improvement in the appropriate use of metadiscourse (66.15 % to 86.6 %).

### 5. Discussion

The findings supported the neo-Vygotskian view of SLL as a social and co-constructed process, mediated through talk-in-interaction and discourse scaffolding within the learner's ZPD. It was evidenced that the ZPD students formed small communities of practice doing the writing tasks; participated in discursive practices of discourse co-construction at progressively changing ZPD levels; and achieved growth in the use of English metadiscourse. This was so while in the other instructional settings the participants could not comparatively achieve such a considerably high level of competency. These findings thus run counter to the strong and insufficiently substantiated claims made by the Input Hypothesis (Krashen, 1985) that comprehensible 'input-flooding' is the only necessary condition for language learning to take place.

As to the inadequacy of the teacher-directed formal instructional setting in this study, it can be argued that language, similar to other form-focused pedagogical settings, was treated as an object of study and the students as 'learners.' Whereas in the task-based pedagogy that characterized the ZPD setting of the study, language was treated as a means of communication and the participants functioned primarily as 'language users.' Further, unlike the formal-teaching setting, in this ZPD setting, students were able to control topic development, and turn-taking was regulated by normal conversational rules (favorable to grow self-regulated). More important, an emergent discourse structure with abundant opportunities to negotiate for meaning, rather than the traditional teacher-centered discourse structure of IRF (initiate-respond-follow-up) was dominant. And, discourse scaffolding (and content-focused feedback) was directed primarily at enabling students to say what they wanted to say through establishing intersubjectivity.

The interpretive analysis of the metadiscourse-related episodes enabled the observation of a set of scaffolding mechanisms that were at play during the ZPD-groups' L2 discourse co-construction process and facilitated the appropriate use of L2 metadiscourse in the negotiated 'discourses.' The first group of scaffolding dynamics, such as their initial metatalk, emerged among the peers managing and regulating the given tasks. The groups' contingent use of L1 was also notable as another mediational tool to facilitate the task performance process by, for instance, negotiating and generating content; evaluating or reflecting on the text; or creating a positive

atmosphere of collaboration by telling jokes. This use of language playfulness, as also observed by Sullivan (2000), creates the ZPD in an imaginary rule-based situation within which the learner behaves beyond his average level. The peers also constructed intersubjectivity, in the sense of attunement to the attunement of the other, and attained further affective involvement in the activity. They sometimes displayed intentionality moves to keep the interaction going and activate the ZPD for achieving higher levels of regulation.

There were also different metalinguistic 'minilessons', modeling solutions or demonstrating an idealized version of the metadiscourse option to be used, and negotiation for meaning moves generating activity-driven 'discourses' or promoting understanding by elaborating detail. The more capable peers sometimes displayed support or challenge to move forward within the ZPD and, as a 'communicative ratchet,' did not let the group slide back to a previous level. Also, there were cases of contingent responsivity prompts by which the (more capable) partners read other peers' frustration and thus responded appropriately by inviting them to take the lead and make online decisions. As a consequence, the activity performance grew collaborative with the less capable peers displaying unfolding disinhibition to engage in the L2 discourse co-construction process.

In sum, the analysis of the ZPD students' weekly compositions revealed that the metadiscourse resources used were progressively more appropriately taken from English; avoided verbosity; resulted in more 'reader-friendly' discourses; and were used correctly in terms of structure.

## **6. Conclusions**

To conclude, summary, this study found a substantial effect for the ZPD-attuned L2 discourse scaffolding on the participants' microgenetic development and use of English metadiscourse in comparison to other instructional settings. Further, the interpretive, (intra- and inter-session) analysis of the ZPD-groups' 'activity'-based social interactions was found to be extremely useful in uncovering the social genesis of discourse creation by evidencing different ZPD-based scaffolding dynamics that constituted the L2 discourse co-construction. These scaffolding mechanisms characterize the peers' attempts to contribute to the emergent discourse or overcome the discursal impasses. Similarly, a progressive session trend

was evidenced in the students' weekly essays considering their use of metadiscourse over time. Finally, the intraclass interviews revealed that most of the students enjoyed: the ZPD-based configurations of the groups; task-based writing; democratic learning setting; discourse co-construction process; and their increased self-regulation in their use of L2 metadiscourse and even other lexical-structural resources in their writing.

### 7. Pedagogical Implications

As to the implications of the study, the fact that the L2 learners could benefit from the ZPD-based social mediation and discourse scaffolding is expected to play some part in the formulation of a theoretical rationale for L2 curriculum development and syllabus design on the macro level. On the micro level, ESL/EFL teachers can benefit from the activation of the ZPD in the L2 classroom by organizing the intraclass groups in a way that the participants of each have various degrees of competence in the foreign language or have displayed different abilities in the use of specific L2 features. For instance, L2 writing can be viewed as a co-writing practice whereby all participants engaged in a discursive practice can change their patterns of social co-participation within the ZPD (Young and Miller, 2004). Language teachers can also obtain insights from the occurrence of the manifold ZPD-based scaffolding mechanisms in the transcripts for raising students' awareness of the general or culture-specific discourse scaffolding dynamics. Similarly, this study's exploration of L2 metadiscourse development and use in writing offers language teachers insights how they should go about putting it to use. In sum, developing an awareness of the ZPD transitional levels of L2 microgenesis or movement away from other-regulation to self-regulation has a lot to say for error correction.

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