Abstract
Central to Vygotsky-inspired sociocultural theory (SCT) is the notion of zone of proximal development (ZPD) seen by several SLA researchers as a very useful framework within which L2 teaching and learning can take place. Van Lier (2004) argues that the ZPD could be activated in diverse proximal contexts (PCs) and is not limited to the expert-novice scenario. This study probed whether Iranian EFL learners' collaborative task performance within different ZPD-based PCs results in their development of interactional competence (IC). Young's (2011) IC model was used for constructing and developing an IC test (ICT) which was used at the pre-test and post-test times. Three intact EFL listening-speaking classes at a university at southwest of Iran were randomly assigned to the expert-novice, equal peers, and control (non-ZPD) conditions. The co-constructed interactions of the groups in (a)symmetrical ZPD-based conditions were audio-recorded and further analyzed for traces of participants' L2 IC development. A triangulation (quantitative and micro-genetic) approach was adopted analyzing the data. The results showed that whereas both the ZPD groups (equal-peers and expert-novice) outperformed the non-ZPD group on the IC posttests, no statistically significant difference was found between participants' IC development in symmetrical and asymmetrical ZPD-based PCs. Further, the micro-genetic analysis of the ZPD groups' interactions demonstrated how participation and activity in different PCs
can effectively trigger awareness of mechanisms and norms of L2 spoken interaction and, in turn, result in IC development. The findings point to the applicability of diverse ZPD-adjusted PCs, composed of equal or unequal participants, in EFL classrooms and also the efficacy of ZPD-based interactive scenarios for students' development of IC in a second language.

Keywords: sociocultural theory, zone of proximal development (ZPD), proximal contexts (PCs), interactional competence, micro-genesis

1. Introduction
During the last decade or so, the fields of applied linguistics and second or foreign language (L2) education have undergone a major shift of perspective "from viewing language learning as an isolated individual phenomenon to viewing it as inherently embedded in and shaped by situated social interactions" (Hawkins, 2004, p. 3). Through turning attention to more social theories of L2 learning and teaching, L2 researchers and practitioners have shown enthusiasm to avoid mere reliance upon cognitivist models and account further for the ecology of language use and context in their theory and practice (e.g., De Guerrero & Villamil, 2000; Donato, 1994; Johnson, 2001; Lantolf, 2000, 2005; Lantolf & Thorne, 2006; Lave & Wenger, 1991; Mirzaei & Estami, 2013; Storch, 2002; Swain, Kinear, and Steinman, 2010; van Lier, 2000, 2004). Van Lier (2004, p. 4), for instance, underscores the importance of conceptualizing second language (L2) development from an ecological perspective arguing that "ecological linguistics focuses on language as relations between people and the world, and on language learning as ways of relating more effectively to people and the world."

One of the theories contributing significantly to such perspectives has been Vygotsky’s sociocultural theory (SCT). Johnson (2004) maintains that, in effect, the combined theories of Vygotsky and Bakhtin, by providing a bridge between the learner’s external and internal realities, have offered a powerful framework for the ever-expanding field of SLA. This framework allows L2 research to examine learning processes from a holistic perspective in which the two seemingly opposite parts of human existence, mental and social, merge together in a dialectical relationship. Vygotsky's SCT is thus "a theory of the development of higher mental functions" (Lantolf & Thorne, 2006, p. 2) through engaging with social and cultural forces. In brief, SCT holds the view that language learning is similarly a higher-order mental function and is developed from gradual, active, dynamic progression from
social to psychological plane or from inter-mental to intra-mental level. In Lantolf and Thorne's (2006) words, SCT views language as quintessentially a semiotic (i.e., tool-making), communicative (i.e., meaning-making) activity of a situated, social, interactive genesis which underlies all human's subsequent higher-order developments.

Therefore, SCT-oriented metaphors and notions have offered fresh insights markedly different from the dominant discourses of L2 learning (Mitchell & Myles, 2004), viewing environmental, linguistic affordances and the social not as resources of L2 use or influences on learning but as sources of L2 learning and development (Swain et al., 2010). This epistemological stance needs further attention and consideration due to the still unbalanced focus of the field on linguistic, cognitive, and affective aspects of L2 learning. Further, SCT-motivated L2 research has been largely case studies focusing on particular lexical or grammatical features from a descriptive, morph-o-syntactic perspective, mostly adopting an expert-novice scenario for the design. The application of other (equal- or unequal-peer scenarios) to the development of the learner interactional competence, however, has been neglected. Therefore, future research should attempt to bring the ZPD out from the shadows and investigate what these sociocultural notions have to say regarding L2 learners' micro-genetic development of interactional skills in social mediation-in-interaction (Ohta, 2005). In sum, this study adopted van Lier’s (2004) expanded view of the use of different kinds of Proximal Contexts (PCs) (i.e., equal peers, less capable peers, more capable peers, and self-access) in learning. It also sought to go beyond the classical expert-novice context (Vygotsky, 1978) and explored how talk-in-interaction in different PCs leads to the development of EFL learners' interactional competence (IC). It is worth mentioning that, for practical reasons, this study focused merely on two kinds of the aforementioned PCs, that is, equal- and unequal-peer groups.

2. Theoretical Background

2.1 Vygotsky-Inspired SCT, ZPD, and Proximal Contexts (PCs)

Since its inception at the turn of the century in Western academic-educational circles, Vygotsky-inspired SCT has largely impacted the development of social theory and in turn led to theoretical developments in a wide range of disciplines and professions, including L2 education (Mirzaei & Eslami, 2013). In essence, SCT offers a framework for studying cognition systemically without isolating it from social context or human agency
(Thorne, 2005). Vygotsky challenges a Cartesian dualistic view of mind and instead argues for the social, historical, and cultural formation of mind, a view that is also attributed to philosophers such as Hegel, Spinoza, Marx, and Engels (Daniels, Cole, & Wertsch, 2007; Platt & Brooks, 2002). The SCT is most compatible with theories of language that focus on communication, cognition, and meaning rather than on formalist positions that privilege structure (Lantolf & Thorne, 2006).

Compared to the traditional (and fairly universal) approaches in which an innate human mechanism is solely responsible for individual mental development, Vygotsky holds the view that social, institutional, and cultural environments are instrumental in human mental growth (Johnson, 2001). In the other words, the SCT seeks to connect cognition and human action through communicative activity (or language). Specifically, for Vygotsky, meaning does not reside in some abstract underlying sentence in the mind of the individuals (or even in language *per se*), but in concrete human activity in the world of social interaction (within which the use of language is embedded) (Lantolf & Thorne, 2006).

When applied to practice, the SCT is not a framework for 'how to do,' but rather, for 'how to think about' what to do, for instance, in L2 (teacher) education (Johnson, 2009). One of the most fundamental notions that had much influence on educational practice was the view that culturally-situated social relationships (referred to as social mediation, or scaffolding in education) as well as culturally-constructed materials, signs, and symbols (or semiotic mediation) can effectively function to re-organize the natural mental processes and capacities and turn them into uniquely human forms of higher-level thinking and learning (Johnson, 2009). Another key element of any meditational process is the zone of proximal development (ZPD), or an optimal ‘ecosystem’ wherein the learner enters into active, social relationships with others or the environment and learning can most productively take place (van Lier, 2000, 2004; Mirzaei & Eslami, 2013). Vygotsky (1978) defines the ZPD 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" (p. 86).

According to Haywood, Brown, and Wingenfeld (1990), what seems to be of prime importance to Vygotsky was not the mature cognitive processes (represented by the actual level of performance), but the level of performance children can potentially reach with the assistance of adults or
more capable others. Therefore, L2 learners with similar actual developmental levels (as may be determined through using single-shot tests of, say, vocabulary or grammar) can demonstrate different potential developmental levels and dynamics (that can be documented through 'dynamic assessment' frameworks). This ZPD-based learning (or education) precedes and shapes development. In other words, learning is assisted performance, whereas development occurs when assistance is internalized and leads to the regulation of mental and social activity (Lantolf & Thorne, 2006).

A word of caution is in order though in modern applications of the ZPD notion to educational research and practice. As van Lier (2004) warns, "Vygotsky's own remarks on the ZPD were brief and sketchy" (p. 156). Therefore, equating the ZPD only with the asymmetrical expert-novice scenario is an under-statement, if not a misinterpretation. Similarly, Marsh and Ketterer (2005, p. 6) assert that "equating the ZPD with the apprenticeship is false." It thus is incumbent upon subsequent generations of SCT theorists and educators "to develop the idea, while taking care to preserve the spirit of the original" (van Lier, 2004, p. 156).

Following Bronfenbrenner (1993), van Lier (2004) insists that in order to understand human development, one must consider the entire ecological system in which growth occurs. The ecological system of Bronfenbrenner (1993) is composed of five further subsystems from the very microsystem (i.e., proximal processes or the interaction between individual and the immediate environment) up to the macro-system (what he defines as more remote environment or institutional patterns of culture). van Lier (2004), therefore, calls for the SCT to transcend the original expert-novice ZPD scenario and include the whole learning ecosystem (i.e., classroom microsystem as well as societal macro-system) in which the ZPD can be expanded as a learning 'space' wherein a variety of 'proximal processes can develop. Specifically, he uses the notion 'proximal contexts' (p. 157) to refer to other learning scenarios possible in this expanded notion of the ZPD and classroom ecosystem. PCs hence account for, first, what Vygotsky emphasized as "the crucial role of more expert members of the culture in providing the guidance and assistance" (Wells, 2004, p. 295). Second, the notion refers to getting assistance from equal peers, interaction with less capable peers, and or even through self-access or resourcefulness. This 'FonS' (focus on semiosis) perspective implies that rich resources must be
available for meaning making activities in the classroom and the wider social context surrounding the learners (van Lier, 2004).

2.2 Developing Interaction Competence (IC) in ZPD-Based PCs

Interaction- and discourse-based competence is a relatively recent approach to defining language knowledge and performance (Chalhoub-Deville & Deville, 2005). The concept of IC was first proposed by Kramsch (1986) to tap the social nature of language interaction and the notion of communication as the co-construction of participants. Kramsch seems to be highly intrigued by sociocultutural view of mind and language learning. For instance, her 2002 edited volume supports the ecological view that language acquisition is in essence 'language socialization,' or how novice members ('learner-as-apprentice') learn from more expert members how to use language accurately and appropriately and enact social relationships (Kramsch, 2002). In a similar fashion to the SCT conception of meaning (discussed earlier), IC theorists contend that IC is not a trait residing in an individual, nor a competence that is "is independent of the interactive practice in which it is (or is not) constituted" (He & Young, 1998, p. 7). The chief notion is that IC is co-constructed by the joint, discursive practices of individuals in context. Kramsch (1986, p. 367) maintains:

... successful interaction presupposes not only a shared knowledge of the world, the reference to a common external context of communication, but also the construction of a shared internal context or sphere of inter-subjectivity that is built through the collaborative efforts of the interactional partners.

'Inter-subjectivity' is absolutely a sociocultural concept that, according to Lantolf and Thorne (2006), is a social, situated construct, or a shared position, dialogically constructed by interlocutors. Therefore, the IC seems to be originally a SCT construct that is well cherished and operationalized in teaching and testing situations adopting a ZPD-based framework to practice.

Young (2000) argues that the IC includes six interactional resources that interlocutors resort to in a given context to jointly create their communication: (i) sequences of speech acts or rhetorical scripts; (ii) register (i.e., lexical and syntactic structures as well as semantic relations typical in a given practice), (iii) modes of meaning (i.e., interpersonal, experiential, and textual meanings in a practice); (iv) turn-taking patterns; (v) participation configuration (i.e., identifying identity resources in an interaction); and, (vi) designation of boundaries among and transition across
discursive practices (i.e., opening and closing). Young (2008, 2011) adds one more resource or dimension to the IC framework, that is, 'repair,' or "the ways participants respond to interactional trouble in a given practice" (Young, 2011, p. 430). Further, for Markee (2000), the IC subsumes the context-relevant interactional dimensions of communicative competence (CC) (as theorized by prominent CC models in the field): (i) the conversational structure component of discourse competence; (ii) the non-verbal communicative factors component of sociocultural competence, and (iii) all of the components of strategic competence (e.g., avoidance and reduction strategies, self-monitoring strategies, and so on). Considering the probable differences between CC and IC, Young (2011) argues that the IC is not what a person knows, but what a person does together with others. Similarly, Johnson (2004) claims that CC models "are only communicatively or inter-actionally based on the surface. They are monologically based because the learner is interacting with himself or herself" (p. 86). In the CC model, individuals interact with social contexts, whereas in the IC model, interactions are co-constructed with all participants.

Over the last decade, several studies have attempted to probe the development of IC in both pedagogic and assessment contexts, especially where some elements of collaboration or co-construction are at work (e.g., Barraja-Rohan, 2011; CeKaite, 2007; Galaczi, 2014; Sato, 2014; Hall & Doehler, 2012). Barraja-Rohan (2011), for instance, adopted conversation analysis (CA) to help teaching IC in English to adult L2 learners from lower to intermediate levels. She found that the CA-based methodology was effective in raising students’ awareness of both the mechanisms and norms of spoken interaction, and become more effective conversationalists. Further, CeKaite (2007) explored a child’s emergent L2 IC during her first year in a Swedish immersion school. To this end, she adopted a combined micro-analytic-ethnographic approach to analyze the child’s L2 socialization within a classroom community. The results revealed systematic changes in the child-novice’s interactional engagements as a result of her participation in multiparty talk, first, as a silent child and, finally, emerging as a skillful student. Galaczi (2014) conceptualizes the IC as comprising a range of interactional skills co-constructed by learners at different proficiency levels when engaged in collaborative speaking tasks. Similarly, Sato’s (2014) findings suggest that joint performance between the interactants is a constituent of the construct of interactional oral fluency.
Very few studies, however, have explored the application of Vygotsky-inspired notions, such as the ZPD, to the development of IC in L2 pedagogical contexts. Exceptions have been Achiba (2012), van Compernolle and Williams (2012), and van Compernolle (2013). Achiba (2012), for example, explored the IC development of a Japanese learner of English engaged in ZPD-based social interaction with native speakers of English. It was found that the learner’s participation patterns went through marked changes over time, moving from making relevant minimal contributions to major, autonomous participation. In two other recent studies, van Compernolle and Williams (2012) and van Compernolle (2013) focused on the promotion of sociolinguistic competence in the classroom ZPD and on the role of the IC during the ZPD-activated dynamic assessment of L2 French pragmatic abilities, respectively. In the former study, employing ‘instructional conversation,’ van Compernolle and Williams reported that teacher-student collaborative interaction within a group’s ZPD can develop learners’ conceptual understanding of language variation, which can, in turn, facilitate the development of their performance abilities. In the latter, van Compernolle used dynamic assessment interactions to demonstrate how the successful accomplishment of mediation results in (mediator-learner) co-participants’ IC within the context of dynamic assessment. Despite this nascent interest in the application of the ZPD, it is seen that the classical expert-novice scenario was the prevailing developmental platform, and a dearth of research attempts have focused on the whole learning ecosystem, as van Lier (2004) notes, in which the ZPD is expanded through a variety of relevant PCs. This study, therefore, seeks to adopt this expansionist view to the IC development within the ZPD, investing on the whole ecosystem of L2 classrooms. The assumption is that by engaging differentially capable partners in the ZPD groups in different proximal contexts, the learners will avail themselves of interaction affordances of various kinds (direct, social, cultural, conversational, cognitive) in the meaning-making process with peers and themselves. Such ZPD-activated proximal milieus are theorized to provide maximal opportunities for developing L2 learners’ IC, regarded as a social construct, i.e., jointly co-constructed by the individuals.

3. Objectives of the Study
As noted, this study, adopting van Lier’s (2004) expanded view of the ZPD, probed whether Iranian EFL learners' collaborative task performance within
Collaborative L2 Interactivity in Diverse ZPD-Based Proximal Contexts and …

different PCs results in their significant development of the IC. Further, the (a)symmetrical social interactions of the different ZPD groups were audio-recorded for complementary microgenetic analysis. Specifically, it was intended to examine how talk-in-interactions of differentially capable peers influence the development of the learners’ IC and what IC-oriented developmental processes receive more momentum or (emerge at all) in collaborative dialogues of the EFL learners.

4. Research Questions
The following research questions were therefore formulated for the purpose of the current study:
1. Does collaborative learning in ZPD-based PCs have any significant effect on Iranian EFL learners' development of IC as compared to the traditional non-ZPD learning settings?
2. Which type of PCs is more effective, equal- or unequal peer PCs?
3. Which IC resources and mechanisms emerge in the social interactions of the ZPD groups?

5. Method
5.1 Participants
Three intact EFL classes at two state universities in the southwest of Iran were chosen as the participants of this study. They were 103 freshman students majoring in English Translation, both male (n=33) and female (n=70), and with the average age of 19. They were enrolled for a 'speaking-listening' course and were attending language labs at the time of doing the research. EFL programs in Iran largely focus on the improvement of oral communicative skills and reading in the first year (Mirzaei & Eslami, 2013). At this level, attempts are generally made to provide sufficient comprehensible (audio-video) L2 input and have occasional whole-class discussions of different topics. Still, the discussion sessions are in most cases teacher-centered, and little group work (dyadic or triadic) is practiced in a (speaking-listening) course which is originally designed to enhance L2 learners' ability to conduct social interactions in the L2. The three classes were randomly assigned to two kinds of (experimental) PCs (i.e., the ZPD groups of equal and unequal peers) and one control group. ZPD groups in both PCs were formed based on the participants' IC scores at the pretest. The peers in the 'equal' ZPD groups were those who had gained roughly similar scores at the IC test. However, the peers at the 'unequal' ZPD groups where
those who had gained noticeably different scores (at least, a seven-point difference), and thus demonstrated distinctly differential levels of IC (as measured by the test).

5.2 Materials and instruments

In order to conduct the study, an IC test (ICT) was constructed and used for the pretest and posttest. Also, different kinds of collaborative IC tasks were designed and used to elicit L2 learners' social interactions within four weeks of ZPD-activations in the ZPD groups. The collaborative tasks were chosen based on Pica, Canagy, and Faldum's (1993) and Pica's (2005) insights on task classifications as well as Barraja-Rohan's (2011) recommendations for teaching IC in L2 classrooms. The designed tasks and activities were distributed to the ZPD groups in successive weeks of ZPD activations.

Typical tasks were dialogue completion, information gap (e.g., a picture-cued story), decision-making, and speech-act tasks. They were all goal-oriented and elicited different activities among the peers.

As to assessing IC development, according to SCT-oriented researchers, it is not an assessment of isolated skills (Smith, Dockrell, & Tomlinson, 1997) but of learners' discursive interactional practices (Chalhoub-Deville & Deville, 2005; Johnson, 2000; McNamara, 1997; Young, 2011). Inspired by this theoretical rationale, Young's (2008, 2011) model of discursive IC resources was adopted to set up *a priori* 'theory-based validity' argument, define the construct and its components (or 'resources'), develop the test blueprint to ensure content validity, and construct the ICT items or interactional tasks.

To recap, Young (2008, 2011) claims that IC includes the following seven resources that participants bring to interaction: participation framework, register, modes of meaning, speech acts, turn taking, repair, and boundaries. From these IC resources, repairs and boundaries were not included in ICT because of the difficulty of merging them into the designed format. ICT items were designed in both open-ended and multiple-choice discourse-completion-test (MDCT) formats focusing on different aspects of real-life interactional episodes. Further, two items were in the form of unscrambling the conversation order to tap the participants' competency to manage turn-taking configurations. As noted, the dialogues in the ICT were all natural, real-life, and discursive as required based on the theoretical definition of IC. The MDCT items were developed drawing on the related sources in the literature (Johnson, 2001; Young, 2008, 2011), two experts'
judgments (university professors), a rather detailed test blueprint, and feedback gained from pilot testing. To further illustrate, the test required to perform in speech-act situations targeting differential levels of power status, social distance, and imposition variables or simply perform in interactions displaying different moods (e.g., happy, sad, fatigue, etc.). There were also MDCT items to tap appropriate recognition of cooperative maxims and registers. Reliability estimates were computed for the ICT using the Cronbach’s alpha. The optimal value of 0.79 was obtained which indicated that the IC test was reliable. Moreover, the ICT items were subjected to principal components analysis (PCA) to ensure construct validity of the instrument. In brief, after checking factoriability of the correlation matrix as well as other preliminary PCA tests and performing oblimin rotation, the 34 items that showed satisfactory loadings on the five retained factors were preserved in the final form of the instrument.

6. Procedure
A multi-method approach, both in the data-collection process and in the analysis as well as interpretation of the data, was adopted in the current quasi-experimental (i.e., pretest-comparison-group-posttest) study. First of all, it was necessary to construct and develop the ICT. To this aim, participants with similar characteristics were sampled from a university in the central part of the country to function in the piloting, pretesting, and posttesting phases of ICT development. Then, after gathering the pretest data from three intact (speaking-listening) classes at two state-run universities in southwest of Iran, the classes were randomly assigned to three instructional groups, that is, ZPD-activated equal group, ZPD-activated unequal group, and control group. Different participatory unequal (expert-novice) and equal groups were formed each session based on the pretest ICT scores as well as consultation with the classes’ original instructors. Equal-peer groups in one ZPD class were composed from amongst the students who had gained roughly similar scores at the IC test. However, the unequal-peer groups in the other ZPD class were formed from those who had gained markedly different scores (at least, a seven-point difference), and thus demonstrated distinctly differential levels of IC (as measured by the test). It is worth noting that the courses were announced as integral parts of the whole speaking-listening syllabi for the classes, and students active participation and engagement with the tasks and activities were required. Furthermore, both the original and visiting (researcher-) instructors were
research teammates for this study and worked in close synergy to operationalize the notions.

Each session, the ZPD groups were given a dyadic interactive task in order to initiate goal-oriented collaboration and elicit their social-interactions data for subsequent microgenetic analysis. Meanwhile, the co-constructed (a)symmetrical interactions of the groups in the ZPD conditions were audio-recorded for four successive weeks, three 45-minute sessions a week, by the participants’ cell-phones and were transcribed for subsequent analysis of students' discursive practices and interactional resources.

In the control (non-ZPD) group, no collaborative output task was implemented, and basically, L2-input provision and occasional whole-class (teacher-controlled) discussions were conducted. It is worth noting that the three naturally-occurring classes were attended three sessions a week by one of the researchers. Then, the researcher took control of the classroom and instruction. In the control group, however, the class was attended each session to ensure that the normal procedure in EFL classes in Iranian universities was adhered to. After four weeks of instruction, the groups were post-tested.

7. Results

This study intended to investigate the efficacy of collaborative learning on Iranian EFL learners’ development of IC in ZPD-based PCs as compared to the traditional non-ZPD learning settings. To compare the achievement of the unequal, equal, and control groups on the ICT from the pretests to the posttests, both descriptive and statistical analyses were conducted. Table 1 displays the descriptive statistics for the ICT (pretest and posttest) scores of the different groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>Test</th>
<th>Min</th>
<th>Max</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unequal</td>
<td>Pretest</td>
<td>14</td>
<td>25</td>
<td>23</td>
<td>21.01</td>
<td>4.80</td>
<td>0.09</td>
<td>-1.05</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>17</td>
<td>33</td>
<td>23</td>
<td>28.56</td>
<td>3.51</td>
<td>-0.34</td>
<td>-0.88</td>
</tr>
<tr>
<td>Equal</td>
<td>Pretest</td>
<td>14</td>
<td>23</td>
<td>22</td>
<td>19.95</td>
<td>3.14</td>
<td>0.32</td>
<td>-1.20</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>19</td>
<td>29</td>
<td>22</td>
<td>27.5</td>
<td>3.36</td>
<td>-0.72</td>
<td>0.14</td>
</tr>
<tr>
<td>Control</td>
<td>Pretest</td>
<td>15</td>
<td>24</td>
<td>20</td>
<td>20.15</td>
<td>3.27</td>
<td>0.19</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>14</td>
<td>25</td>
<td>21</td>
<td>21.8</td>
<td>3.17</td>
<td>-0.16</td>
<td>0.79</td>
</tr>
</tbody>
</table>
The results showed acceptable normality values for the groups since all of the skewness and kurtosis values were within the range of -1.5 to +1.5 (Bachman & Kunnan, 2005). The pretest mean scores of the control, unequal, and equal groups (i.e., 20.15, 21.01, and 19.95, respectively) showed slight to considerable increases in posttests (21.8, 28.56, and 27.5). To see whether the differences were large enough to be considered statistically significant, a one-way ANCOVA was conducted.

Before moving further, the Levene's Test was not significant ($\text{Sig} = 0.15$), meaning that the assumption of equality of variances was not violated. Table 2 demonstrates the main ANCOVA results or the inter-group developmental differences over time (from the pretests to the posttests). The independent variable was the type of IC instruction (named as 'Group' in the analysis), and the dependent variable comprised students' posttest ICT scores. The groups' pretest scores on the same test were included as the covariate in the analysis. As is seen in the table, a statistically significant effect was found for the 'Group' variable ($F (1, 52) = 8.75, p < 0.005$). The corresponding Partial Eta Squared value was 0.25, which is quite a large effect size. This means that 25 per cent of the variance in the dependent variable is explainable by the type of IC instruction students had received. Further, there was a strong relationship between the pretest and posttest scores on the ICT, as indicated by a partial eta squared value of 0.40. The ANCOVA results provide a positive answer to the first research question above, in the sense that collaborative learning in ZPD-based PCs has significant effects on Iranian EFL learners' development of IC (as compared to the traditional non-ZPD learning settings).

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>1328.53</td>
<td>3</td>
<td>442.84</td>
<td>64.68</td>
<td>0.00</td>
<td>0.78</td>
</tr>
<tr>
<td>Intercept</td>
<td>278.89</td>
<td>1</td>
<td>278.89</td>
<td>40.73</td>
<td>0.00</td>
<td>0.43</td>
</tr>
<tr>
<td>IC Pretest Scores</td>
<td>240.12</td>
<td>1</td>
<td>240.12</td>
<td>35.07</td>
<td>0.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Groups</td>
<td>119.90</td>
<td>2</td>
<td>59.95</td>
<td>8.75</td>
<td>0.00</td>
<td>0.25</td>
</tr>
<tr>
<td>Error</td>
<td>356.01</td>
<td>52</td>
<td>6.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22629.00</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>1684.55</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The post hoc (Bonferroni-adjusted) pairwise comparison results in Table 3 indicate where the differences were exactly located, thereby responding the second research question. Still to further address the first research question, the comparison results (in the first two rows) demonstrate that both the unequal and equal ZPD groups made more noticeable IC gains compared than the control group. More importantly, it was found that there were no statistically significant differences between the unequal and equal ZPD groups in terms of their IC development as a result of their over-time participation in collaborative interactive tasks. The results suggest that both (unequal and equal) PCs can effectively offer opportunities for expanding the ZPD if the learners, after realizing gaps and limitations, seek to address them by marshalling their own IC resources, those of teachers or experts, those of peers, and those of their environments.

Table 3. Post hoc pairwise comparisons for different groups

<table>
<thead>
<tr>
<th>(I) Group</th>
<th>(J) Group</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig. *</th>
<th>95% Confidence Interval for Difference a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unequal</td>
<td>Control</td>
<td>6.76*</td>
<td>1.06</td>
<td>0.00</td>
<td>[4.44, 9.08]</td>
</tr>
<tr>
<td>Equal</td>
<td>Control</td>
<td>5.7*</td>
<td>1.13</td>
<td>0.00</td>
<td>[3.49, 7.91]</td>
</tr>
<tr>
<td>Unequal</td>
<td>Equal</td>
<td>1.06</td>
<td>1.13</td>
<td>0.40</td>
<td>[-0.9, 3.02]</td>
</tr>
</tbody>
</table>

Based on estimated marginal means

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

a Adjustment for multiple comparisons: Bonferroni.

Figure 1 below displays the supremacy of the ZPD groups' IC achievements (over the control group) after involving in collaborative interactive tasks in ZPD-expanded PCs with experts as well as peers. The differences among the groups' posttest mean scores gain more momentum when it is recognized that the groups demonstrated nearly similar threshold-level performances on the IC test in the pretest.

7.1 Microgenetic analysis of ZPD-Activated IC episodes
To probe what IC resources emerged in social interactions of the ZPD groups during collaborative task performances, micro-genetic analysis was conducted. Micro-genetic learning refers to local, contextualized and moment-to-moment learning resulting from particular interactions in specific sociocultural settings (Frawley, 1997; Vygotsky, 1978). As Mirzaei
Collaborative L2 Interactivity in Diverse ZPD-Based Proximal Contexts and …

and Eslami (2013) note, the ZPD provides a highly optimal and supportive microgenetic learning space for collaborative dialogue and development to take place. According to Young's model, IC resources comprise verbal, nonverbal, and interactional resources. It is important to note that the microgenetic analysis of the ZPD groups' social interaction below focuses only on verbal and interactional resources.

Episode 1

As noted earlier, one of the dimensions of the IC that should be taken into account in teaching and assessment is the L2 learner's command of speech acts realization patterns in different contexts of language use. There were frequent episodes, like the one below, in which group peers became jointly engaged in considering pragmatic functions (or appropriacy issues) of their utterances.

Episode 1

A I want to express it in a very formal level.
A The point to consider is that it's a master, it's a professor.
B I should say [I'm sorry and something like that].
A [I'm sorry]. It's formal but [My apologies]...
A Then how would you continue?
B Hmmm. Can we say [it's a shame that...]?
A No.
A Or... Or you can start with [I'm afraid].

In this episode, Student A, the more capable peer, explicitly discusses the interlocutor's power (+P) and also implicitly observes the affective involvement (low; i.e., they are not intimate or close in relationship to the professor), and contact (i.e., occasional contact with the professor). Students A (male) and B (female) try to find a formal and polite way of expressing their apologies. The interaction continues:

A [I beg your pardon] or [pardon me], which one?
B [I beg your pardon] you said is very formal?
A Is very formal and we use it when you have done something very bad.
B Aha!
B I think [pardon me]
A Ok, go for [pardon me]

It is seen that learners struggle to make attunement to the variable sociocultural conventions in their interaction. There were other similar episodes in group peers' interaction corpus that revealed ZPD-activated PCs can serve as the favorable learning space in which learners, pursuing the
same goal, jointly enhance each other's awareness of appropriate interactivity in the second language.

Episode 2

Another interactive resource at work during the task-oriented discursive practices was joint attempts at producing (or comprehending) correct pronunciation, lexis, and grammar specific to the practice. In this example, student B reads the scenario. She checks her pronunciation and the meaning of the word crucial with her peer. Student A resonates the correct intonation, and also corrects student B's recitation of the sentence 'Where are you?' Similar joint efforts like this are categorized under 'register' dimension of the IC by Young (2008, 2011).

10. You completely forget a crucial meeting at the office with your boss. An hour later you call him to apologize. The problem is that this is the second time you’ve forgotten such a meeting.

Your boss gets on the line and asks: where are you?

You: ………………………………………………..

B Crucial?

A Crucial...yes ... means something very important.

A here are you? … He uses rising intonation, rather than falling like in ordinary situations.

A This is the way he asks such an employee.

Episode 3

The following episode evidences equal peers' cognizance and control of turns and in turn contribution to the evolving interaction to manage the task. Young (2011) defines turn-taking as "how participants select the next speaker and how participants know when to end one turn and when to begin the next" (p. 429). By way of illustration, although the turns vary in frequency or in size, students seem to be interactively developing awareness of when to end or to begin. The turn-taking mechanisms like turn-opening, -maintenance, -allocation, and turn-ending were at work through language use.

1 A Oh well, first of all, that's a master. It's a professor ... teaches at a university, so the words you use are supposed to be highly formal level.

2 So, you might express your ... I don’t know... request in a very formal way.

3 B ... formal way? ... what would we say in such occasions to our own professors in our classes?

4 Both (silence) …

5 A ... and you know, the point is that the student is making excuse/he did not tell the truth, because …

6 B … because he forgot it … and now he is to say something acceptable…
In the episode above, Student A initiates the interaction by the interjection *oh well*, and tries to scaffold the task management process. Different kinds of turn-allocations are observed in lines 1, 5, 7, 8, and 9. In line 1, after Student A self-selects himself as the speaker, he continues the turn, and finally in line 4, he allocates the turn to his peer by expressing uncertainty and a rising tone. Student B simply backtracks and ends with a question. Silence then follows on both sides pondering over other elements of the situation. Student A continues as the next speaker to line 9, where Student B, receiving the cue from her partner, takes over and self-selects herself as the next speaker at the right time.

**Episode 4**

Repairs were also initiated by self or by others whenever the source of trouble was recognized. The following episodes demonstrate self-initiated repairs by Student A noticing the (grammatical) gap in her L2 output:

<table>
<thead>
<tr>
<th>Student</th>
<th>Dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>You are just very late to your class, ok? … You try to go on very fast to get/to get your class on time, ok? … On the way, you hit a students* … oh You hit a student, of your class ok?</td>
</tr>
<tr>
<td>B</td>
<td>Then he fell down on the ground/floor.</td>
</tr>
<tr>
<td>A</td>
<td>Yes and then … how would you state your apology?</td>
</tr>
<tr>
<td>B</td>
<td>You know, I will feel very guilty … It is my thought at least.</td>
</tr>
<tr>
<td>A</td>
<td>And you have to apology* … apologize … This is very bad for me</td>
</tr>
</tbody>
</table>

Student A notices the trouble (using plural instead of singular) and immediately self-repairs (i.e., *a student*). Subsequently, the noun apology was used in a verb position and was repaired soon using the correct form of the verb *apologize*. However, in the following interactional episode, Student B misinterprets the function of ′I wish′ structure, and her peer immediately repairs her mistake using L1 equivalent.

<table>
<thead>
<tr>
<th>Student</th>
<th>Dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Aha …</td>
</tr>
<tr>
<td>A</td>
<td>Oh, oh, oh, no, no!</td>
</tr>
<tr>
<td>B</td>
<td>[I wish you] means I wanna you to bring my book?</td>
</tr>
<tr>
<td>A</td>
<td>[I wish you brought it] means (Persian translation: ei kash avarde bashish [I wish you brought it].</td>
</tr>
</tbody>
</table>

In short, performing collaborative interactional tasks in ZPD-expanded PCs can naturally give rise to a multitude of discursive practices in which group peers get engaged in dialogic co-construction of linguistic, pragmatic, and interactional knowledge and in turn result in different context-specific IC resources or mechanisms.
8. Discussion

This study aimed to explore the development of L2 IC in ZPD-expanded PCs. Amongst the PCs theorized by van Lier (2004), two were chosen and subjected to research: unequal and equal groups. The results showed that, first, the ZPD groups outperformed the non-ZPD (control) group on the IC posttests showing signs of significant IC development as a result of discursive interactivity in diverse PCs. The effectiveness of the learner’s social interaction within diverse PCs is in line with the findings of other ZPD-oriented studies (e.g., Achiba, 2012; van Compernolle & Williams, 2012; van Compernolle, 2013). As noted above, these studies also showed that social mediation and dialogic interaction within the ZPD can work as a useful and productive mechanism for language learning and development, in general (e.g., Mirzaei & Eslami, 2013), and for the development and co-construction of L2 learners’ IC, in particular (e.g., Achiba, 2012; van Compernolle, 2013). One of the reasons Vygotsky (1978) enumerated for the efficacy of interactivity in the ZPD is the 'assistance assumption,' which, presumes that learning depends on assistance from more capable individuals. Another reason could be what Chaiklin (2003) refers to as the 'potential assumption,' which indicates the presence of certain maturing functions (with the learner) that can be a target for meaningful, interventive action.

The useful application of ZPD-based collaboration and interactivity evidenced in this study can also be seen in light of Swain's (1995) observation that collaborative dialogue about form-meaning mappings in the context of meaningful task is one source of L2 learning by individuals. As noted above, Galaczi (2014), Hall and Doehler (2012), and Sato (2014), similarly, emphasized that collaboration and joint performance are fundamental to L2 learners’ co-construction of interactional skills. In this regard, Swain and Lapkin (1998, p. 321) further submit that "the co-construction of linguistic knowledge in dialogue is language learning in progress." It is thus argued that Vygotsky-inspired SCT can be used as a useful and fruitful framework for exploring collaborative activity and interactivity in L2 classrooms because it draws on the premise that higher-order cognitive functioning originates in social interaction (Anton & DiCamilla, 1999).

Second and more importantly, the results of the current study did not document any significantly differential IC development between the L2-learner groups situated in diverse (unequal and equal) ZPD-based PCs. This
finding is both theoretically and pedagogically important as it can be taken
as support for the expanded notion of the ZPD that when learners are
engaged in diverse PCs, affordances of various kinds (e.g., direct,
sociocultural, collaborative, dialogic, and cognitive) become available to be
incorporated into the meaning-making process (van Lier, 2004). The
asymmetrical learning-as-apprenticeship framework (or unequal PC in the
current study) in essence reflects Vygotsky's (1978) original conception of
assisted-learning within the ZPD, or in his own terms, "problem-solving
under adult guidance or in collaboration with more capable peers" (p. 85).
This 'guided participation' (Rogoff, 1995) then bridges the distance between
the learner's 'actual' and (higher) 'potential' developmental levels and results
in his or her appropriation of assisted-learning. However, most neo-
Vygotskyans nowadays argue that, due to his early death and the in-progress
nature of his work, it is advisable to expand the ZPD notion while
preserving the original spirit and further contextualize it within Vygotsky's
larger theory of development (Lantolf & Thorne, 2006; van Lier, 2004).
This study thus can join the growing SCT literature arguing that, besides the
more-less capable participation structure, the symmetrical participatory
structure involving equal-peers in collaborative problem-solving can
similarly achieve progress. This is also in line with Donato's (1994) notion
of 'collective scaffolding' which extends the framework to peer interaction
and suggests that learners (working in groups) can 'mutually construct'
assistance (or knowledge) in the same way experts and novices do.

The significance attached to the possible contribution of peer
interaction witnessed in this study might be taken as evidence in support of
Piaget's view that, in many cases, symmetrical equal-peer relationship can
result in cognitive development. However, it should be noted that, despite
apparent similarities, Piaget's and Vygotsky's views are radically different
and the gap can never be bridged by any such studies.

To further complicate the matter, both theorists have different views
regarding the relationship between (school) learning and (cognitive)
development. To Piaget, learning and development are independent and
learning merely draws on the fruits of development. For Vygotsky, however,
development lags behind learning and this sequence results in the ZPD
(Lantolf & Thorne, 2006). As to the role of expert-learner interaction, their
views are also rather contradictory. According to Piaget, children perceive
adults as qualitatively different and the interactional adult-child
discrepancies never result in cognitive conflict, disequilibrium, and later
equilibration (or learning). In contrast, the assisting role of adults' (or more capable peers') greater knowledge in the child's (or the learner's) development in the ZPD is central to Vygotsky (Duncan, 1995). The study is motivated largely by the fundamental views of the SCT, and the findings should be interpreted with caution and only in light of Vygotsky's own theory. This line of research, when accumulated, might be able to shed further light on the expanded view of the ZPD while simultaneously preserving the theoretical spirit (van Lier, 2004). Therefore, the warranted interpretation might be that assisted learning does not happen just in expert-novice social interaction and that "equating the ZPD with the apprenticeship is false" (Marsh & Ketterer, 2005, p. 6).

Finally, micro-genetic analysis of the ZPD groups' collaborative (i.e. having shared task goal) interactivity in diverse PCs demonstrated that differentially capable peers could co-construct a shared internal context (or 'inter-subjectivity) for managing and undertaking the task. In a similar vein, van Compernolle and Williams (2012) found that ZPD-sensitive mediation led to the micro-genetic development of learners' understanding of sociolinguistic variation in French during an instructional conversation. This ZPD-based view of learning is highly compatible with the theoretical notion of IC in the sense that the competence is created by all participants in social interaction (Kramsch, 1986; Young, 2011). In this regard, Young (2011) maintains that "IC is not the knowledge or the possession of an individual person, but is co-constructed by all participants in a discursive practice, and IC varies with the practice and with the participants" (p. 428).

Based on a SCT-based view of education, language teaching is similarly concerned with "enhancing learners' communicative resources that are formed and reformed in the very activity in which they are used—concrete, linguistically mediated social and intellectual activity" (Lantolf & Thorne, 2006, p. 7). As noted earlier, interactivity within the ZPD (in this study) can bestow different productive interactional affordances upon the groups to enhance their IC skills, such as knowledge of different L2 participation frameworks, different registers and modes of meanings, speech-act and turn-taking patterns, repairing mechanisms, and boundaries of talk-in-interactions. IC resources, by implication, and actions are perceived directly and carry deep meanings at emotional and intuitive levels through task-based collaborative interactivity within the ZPD (Swain, 2000; Young, 2011).
10. Conclusions

This SCT-inspired study was an attempt to operationalize van Lier's expanded view of the ZPD, comprising diverse (equal and unequal) PCs groups, and, in turn, drawing on the compatible IC theory to tap the social-interactional dimensions of language ability. The findings supported the effectiveness of ZPD-activated PCs in developing L2 learners' IC. Differentially capable peers in the ZPD groups demonstrated different participation patterns as 'co-learners' in making attempts to facilitate their peers' learning and IC development. On the one hand, the asymmetrical more-less capable participation structure, which is the central and most theorized framework in Vygotsky's SCT, approached 'learner-as-apprentice' in a community of practice wherein novice members tried to learn from more experts. This guided participation or apprenticeship can be instrumental in helping learners enact social relationships and employ sociocultural processing of modeling and scaffolding in becoming interactionally competent. On the other hand, the symmetrical equal-peer participation scenarios operationalized in this study were shown as equally useful for joint construction of IC through 'collective scaffolding' occurring at the micro-genetic level. Therefore, as another dimension of PCs, peer assistance and 'peer interaction' offer L2 learners opportunities for instructing and being instructed, as two sides of the peer-symmetry coin, making learners' ideas clearer, sometimes by trial and error marshalling their own IC resources and those in the environment.

In sum, this expanded view of interactivity within the ZPD can help break away from the traditional classroom space, configured simply of desk rows with passive heads waiting for receiving teachers’ unidirectional transmission of IC-related knowledge. It, instead, embraces a view of classroom as an ecosystem in which the expert-novice context is not the only nor the primary participation structure available. Within this enlarged learning space, a variety of PCs as well as interactional affordances and resources can thus emerge and foster L2 learners' IC development. Typical PC scenarios can be work stations, group tables, language corners, in-class presentation sessions, and even individual quiet places for self-access and resourcefulness, marshalling inner resources, knowledge, and experience.
References


