Patterns of Interaction in Young EFL Learners' Pair Work: The Relationship between Pair Dynamics and Vocabulary Acquisition

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ABSTRACT

Adopting a social learning perspective towards the interface between the use of pair work and language learning, the present study investigated the dyadic interaction in an EFL course for young learners at pre-elementary school level. A number of 18 EFL learners were put into 9 pairs and received instructions on 24 target vocabulary items during 6 sessions. In each session, the participants completed a recognitions task and a production task. Their dialogues were recorded, transcribed, and coded as exhibiting one of the four patterns: collaborative, expert/novice, dominant/dominant, and dominant/passive based on Storch's (2002) patterns of interaction coding scheme. The comparison between the patterns and the participants' performance on a vocabulary test revealed that collaborative and expert/novice were associated with better learning outcomes. The findings are discussed along with Vygotsky's sociocultural theory and pedagogical implications for trainers and instructors.

Keywords: Sociocultural theory; social learning; patterns of interaction; peer response; vocabulary acquisition

INTRODUCTION

The social interactionist view regards learning as a social act and not as "a solitary demonstration of individual knowledge" (Roberson 2014, p. 1). In this line, language classrooms are "essentially social events" (Block 1996, p. 76) and, as with every small or big society, the language learners in a classroom are engaged in different types of interactions. These interactions have multiple meanings and can lead to multiple learning outcomes (Brooks 1990). In such a context, the teacher takes the role of a facilitator rather than an instructor, and aims at providing opportunities for learners to interact in meaningful and authentic ways. In other words, the teacher advocates peer response in the classroom (Roberson 2014).

Vygotsky's sociocultural theory (SCT) (1978) highlights the potential advantages of peer response by maintaining that while participants communicate with each other in meaningful ways, they engage in meaning-negotiation and hypotheses-testing about the second language (Donato 1994). Peer response is also supported by the communicative language teaching approach which puts authentic interactions between the learners as its central theme (Roberson 2014). However, neither these theoretical arguments nor the popularity of peer response guarantee the success of all peer response in promoting learning. In other words, not all learners in all their interactions can assist or scaffold each other in the learning process (Liu 2002). Thus, rather than being static, peer response possesses a variety

of characteristics and can lead to a variety of outcomes. In this regard, Ferris (2003) has voiced the need for "multi-featured, triangulated projects that simultaneously consider feedback characteristics and outcomes" (p. 85) of peer response.

According to Roberson (2014), one of the characteristics of peer response that has been "under-examined in relation to the outcomes of peer response is the social positioning of peer responders" (p. 3). So far, studies in this line have revealed that not all peer interactions take a collaborative form (Nelson and Murphy 1993, Liu 2002). Investigating the reasons why peers do not always succeed in creating collaborations which result in learning, requires moving beyond examining linguistic features of peer interactions and instead focusing on the pair dynamics. Although such studies are short in number, they have already highlighted the significance of investigating patterns of interaction as the social dimension in pair interactions, since when asked to work in pairs or groups, the stance that a participant takes can play a crucial role in providing or depriving opportunities for their peers to engage in meaningful interactions and language learning. Considering the significance of understanding the nature of pair interaction in providing learning opportunities for the participants, the present study examined the nature of, changes in, and outcome of interactions between young second language learners through employing Storch's (2002) framework. The following section reviews some of the major findings of theoretical and practical research which have focused on peer response in the scope of this study.

LITERATURE REVIEW

Extensive research has been conducted on the use of group and pair work, as widespread practices, in second and foreign language education. One of the reasons for the popularity of peer response is that it "operates on a more informal level than teacher response, provides a change from the more one-way interaction between the teacher and student" (Rollinson 2005, p.26). As a result, learners may be more encouraged or motivated. Peer response also relieves teachers from a "tedious and unrewarding chore" (Hyland 1990, p. 279) and saves students from a "death by the red pen" (Furneaux 1999, p. 56). A growing number of studies have examined peer response in second language settings by referring to Vygotsky's theory of cognitive development (1978). From a sociocultural perspective, a classroom is a dynamic environment which provides "semiotic resources for students to interact with" (Watson 2007, p. 1). Teachers and peers, as one of these resources, are socially complex interlocutors. Through interaction with these resources, learners acquire a second language along with "interactional competence", to use Ohta's (2000) term, which includes the acquisition of vocabulary, syntax, and pragmatics. Thus, within the sociocultural framework, the learning of second languages is a process that can be attributed to learner's participation in social activities. In peer-peer collaboration, learners pool their resources and co-construct new language knowledge which is first internalised and is later transformed into an individual resource (Dobao 2012).

On this basis, Swain (2000) proposed that 'collaborative dialogue', the dialogue that occurs between learners as they collaborate to solve linguistic problems, is a 'knowledge-building dialogue' (p. 97). She suggested that the collective behaviour of learners engaged in collaborative dialogue may be transformed into individual mental resources. In this regard, Ohta (2000) referred to peer-peer collaboration as an interaction in which there is no 'velar expert'. Later, it was asserted that this interaction allows learners to act as both experts and novices (Donato 1994, Swain & Lapkin 1998, Storch 2002). Although in peer-peer interaction learners are assumed to be at the same level of language knowledge, still no two learners have the same weaknesses and strengths and, as a result, they may not contribute

equally to the process of task completion. In other words, participants engage in different pair dynamics while completing tasks.

Therefore, in addition to collaborative dialogue and in line with SCT perspective on second language acquisition, Storch (2002) proposed the 'patterns of interaction' framework with the aim of describing the position of participants in a dialogue and explaining the effect that it can have on knowledge construction. She criticised the analytic approach based solely on linguistic characteristics of peer interactions and maintained that such an approach ignores "the fact that in face-to-face interactions, learners negotiate not only the basic topic but also their relationship" (2002, p. 120). Instead, she explored peer interactions in collaborative dialogues by drawing on the work of Damon and Phelps (1989) and using two indexes of 'equality' and 'mutuality' for distinguishing different patterns of peer interactions. Equality refers to "authority over the task or activity" (p. 127). Mutuality indicates "the level of engagement with each other's contribution" (Damon and Phelps 1989, p. 127). These two indexes are continuums and range from high to low (without a zero value). Storch (2002) considered them as two intersecting axes which form four quadrants which she labelled as four patterns to interaction, namely 'collaborative', 'dominant/dominant', 'dominant/passive', and 'expert/novice', as shown in Figure 1.

Low mutuality

| Dominant/Passive 3 | Dominant/Dominant 2 |

Low equality ——————————————— High equality

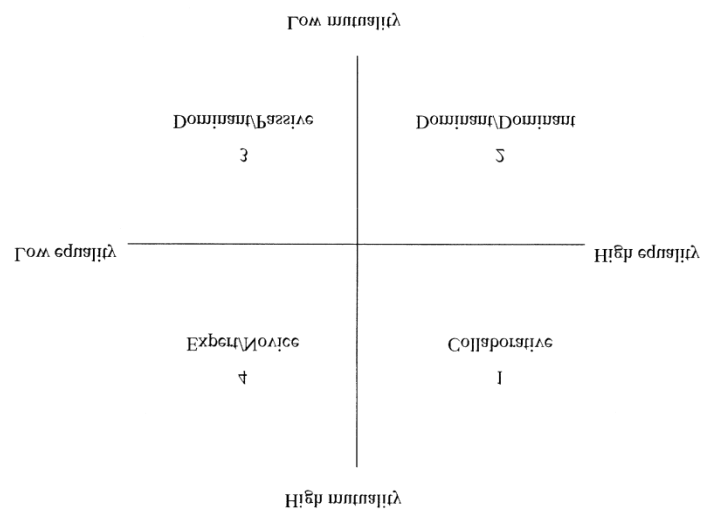| Expert/Novice 4 | Collaborative 1 |

High mutuality

FIGURE 1. Storch's (2002) patterns of interaction framework

The first quadrant, 'collaborative', depicts an interaction with moderate to high equality and moderate to high mutuality. According to Storch (2002), in such an interaction, peers share responsibility of task completion in a way that all the peers work together on all the parts of a task and create a joint problem space in which having negotiations and sharing different views result in problem-solving by achieving resolutions that are confirmed and accepted by all the participants. The second quadrant represents 'dominant/dominant' pattern of interaction which is characterised by moderate to low mutuality and moderate to high equality. Here, the participants contribute to task completion but they are either unwilling or unable to jointly and fully engage with their peers' contributions. The moderate to low levels of equality and mutuality form the third quadrant of the framework which is labelled by Storch as 'dominant/passive'. Here one of the peers takes a dominant stance which is characterised by an authoritarian viewpoint, discourse, and approach towards task completion. The other participant takes a subservient role and adopts a more passive stance. The little negotiations which take place between these two participants do not result in consensus. Quadrant 4 presents 'expert/novice' pattern of interaction where there is moderate to high mutuality and moderate to low equality. Here one of the participants adopts the role of

an expert and actively encourages the novice to participate in task completion and contributes to the problem-solving process. The interaction between these two peers is characterised by plenty of explanations and repetitions through which the expert invites the novice to take a more active role.

Although the findings of many interaction studies provide evidence in support of using pair work and peer feedback in second language development (Kim 2008, Storch 2005, 2007, Wigglesworth & Storch 2009), a more in depth investigation of not only the language but also the social stances and roles which are negotiated between the participants requires employing Storch's (2002) patterns of interaction framework. Pioneering such studies, Storch investigated the nature of dyadic interaction in a classroom-based study of 10 pairs of adult ESL students. The analysis of pair dialogues in completing three writing tasks showed that the collaborative pattern predominated in the data. Also, the analysis of the participants' individual performance on a post-test showed that the evidence of transfer of knowledge was more frequent in the collaborative and expert/novice patterns of interaction rather than dominant/dominant and dominant/passive ones.

Supporting evidence for the advantage of collaborative pattern of interaction over the other three patterns was offered by Watanabe and Swain's (2007) study of the relationship between patterns of interaction and language development in 12 Japanese ESL learners. Zheng (2012) employed the same framework for understanding peer feedback between 28 university learners of English in China. The participants completed a narrative writing task in groups of four. Zheng also added a fifth pattern to Storch's framework to which she referred as 'passive/passive' pattern of interaction. It was found that collaborative and expert/novice patterns afforded the participants more learning possibilities than the other patterns.

In a study on the relationship between patterns of interaction and revision outcomes in a writing course, Roberson (2014) recorded the dialogue between five pairs of non-native English speaking participants. The association between the identified patterns and the participants' second composition drafts revealed that the two patterns of collaborative and expert/novice resulted in better revision outcomes. The analysis of follow-up interviews with the participants indicated that they associated their improved performance with better interpersonal relationships that they had established when adopting either a collaborative or an expert/novice stance.

Although the findings of studies on patterns of interaction have provided evidence for the advantage of collaborative and expert/novice patterns over the other two patterns, these studies are few in number, making their findings not generalizable to all second language settings. Moreover, the core body of research in the area of patterns of interaction in collaborative dialogues and their association with learning outcomes has only focused on development in written performance of learners. Such research can be extended to other language components such as vocabulary acquisition. Along with other skills and components, vocabulary is one of the central points in learning a language. Words are the "building blocks of a language" (Wei & Attan 2014, p. 67) and as put forward by McCarthy (1992) "without words to express a wider range of meanings, communication in L2 just cannot happen in any meaningful way" (p.50). Vocabulary has been gradually recognised as crucial to language use in which insufficient vocabulary knowledge of the learners lead to difficulties in second language learning. In this regard, McCarten (2007, p. 7) believes that vocabulary acquisition is "arguably the most critical component of successful language learning". Additionally, while only adult learners have been the target of many interaction studies, young EFL learners have been under addressed. Vocabulary acquisition plays a significant role for young learners (Cameron 2001) and vocabulary development has been regarded as a key aspect in the language development of young learners (Linse & Nunan 2005). Considering these research gaps, and with the aim of extending the research on

patterns of interaction to new settings and new participants, the present study poses two questions:

1. What patterns of dyadic interaction can be found in an EFL young learners' language class?
2. Which of the patterns of interaction cause better learning outcomes in terms of vocabulary acquisition?

THE STUDY

PARTICIPANTS

In order to choose the participants of this study, a demographic questionnaire was devised by the researchers. The questionnaire aimed at providing information about the sociocultural background of the young learners at pre-elementary level in two kindergartens in Isfahan, Iran, along with their proficiency in their first language (Persian) and the target language (English). A meeting with parents was held and the questionnaire was distributed by the heads of the institutions to them. Based on the responses, a group of 18 children, 7 boys and 11 girls, with an average age of 6.3 was chosen. The participants had no experience of formal English instruction and they received the least exposure to English daily. Another meeting was held with the parents and they signed a written consent regarding their children's participation in the study during one month. They were also requested not to teach their children any new English words, not to review the language items with them at home, and to minimise their children's exposure to English during the treatment.

LANGUAGE ITEMS

Based on the information provided by the demographic questionnaire, the category of English vocabulary with which the learners had the least familiarity was colours. To this category, the researchers added another class of words: objects. An initial list of forty-one words was chosen and piloted in the pre-test. The words were taken from *Let's Go: Starter* which is a widely practiced textbook with young EFL learners in language institutes in Iran. The words that the participants had already learnt and knew were deleted from the list. Finally, a number of twenty-four words (8 colours and 16 objects) which were unfamiliar to all the participants were detected. Since the design of the study allowed for conducting six experimental sessions, a number of four words were to be taught in each session.

TASKS

The tasks prepared for this study were used for two purposes: instruction and measurement (i.e. pre-test and post-test). For the instruction phase, a number of six tasks were prepared. For each four vocabulary items a recognition task and a production task were prepared. The recognition task contained a series of pictures of different colours and objects. The learners were supposed to work in pairs and find the correct picture and circle it based on the teacher's prompt. The production task included six incomplete drawings which required the learners to complete the missing parts of the drawings. The hints were provided in the drawing to direct the learners to the missing parts. Each drawing contained four missing objects. For the measurement phase, a number of twenty-four flash cards were prepared for the target words. Each flash card contained the picture of an object in one colour (e.g. a blue car). The prompts used by the researchers for eliciting answers were "What is this" and "What colour is it".

STUDY IMPLEMENTATION

The selected participants were randomly assigned to pairs. In total, nine pairs were formed in two kindergartens. The study was implemented during one month. First, the pilot-test was given in one-to-one meetings with the children. They were shown flashcards of the target vocabulary items and were asked to answer the questions "what is this" and "what colour is it". The aim of the pilot-test was to choose the words which were unfamiliar to all the participants. Then, the children participated in six instructional sessions. Each session lasted for thirty minutes. The first ten minutes were devoted to teaching the new words by one of the researchers. During the next ten minutes, the participants completed the recognition task individually. In the last ten minutes, the pairs worked on the completion tasks. The dialogues between the pairs were audio recorded. After the treatment, the vocabulary test was taken with a one-week interval. The reason for this interval was to minimise the effect of instruction on the last session of the treatment. At the vocabulary test, one-to-one meetings were held between the participants and the researchers in which a number of twenty-four flash cards were shown to the participants and they were asked to describe the pictures by answering the question: "what is this". The expected correct answer was in the form of the structure 'It's a + colour + noun', such as 'It's a blue car'. Table 1 presents the design of the study.

TABLE 1. Research Design

		Sessions						
	-	1	2	3	4	5	6	-
Activity	Pilot test	four-colours	four-colours	four-objects	four-objects	four-objects	four-objects	Vocabulary test
Aim	Piloting the vocabulary items and homogenizing the participants	Recognizing and producing English words		Recognizing and producing English word combinations: colour + noun				Measuring the acquisition of English words

DATA ANALYSIS

The recorded dialogues were transcribed by the researchers according to the transcription symbols provided in Table 2. Subsequently, as with similar research done in this field (Swain & Lapkin 1998, Storch 2007, Zheng 2012, Roberson 2014), the transcripts were divided into episodes. For the current study, an episode was considered to be a section of the dialogue in which the participants discussed any of the twenty-four vocabulary items or a combination of them. To check for reliability of episode identification, the transcripts were also coded by another rater, who was a PhD student in Applied Linguistics with extensive experience in qualitative coding. She completed a training session with the researchers, where the aim and design of the study along with the definitions and specifications of episodes and Storch's patterns of interaction were introduced to her. She independently identified the episodes and shared the results with the researchers. Inter-rater reliability was 90% for episode identification. The differences were resolved by discussion. The next step in data analysis was coding or categorizing the episodes. The identified episodes were reviewed by the researchers and they were assigned to one of Storch's patterns of interaction (collaborative, dominant/passive, expert/novice, and dominant/dominant). Double coding was done by the

second rater. The inter-rater reliability was 88%. Discussions were held between the raters and agreement on a single code was achieved.

TABLE 2. Transcription symbols (adapted from Storch, 2002)

( )	Nonverbal sounds, e.g., (laugh)
Bold	Word/s pronounced with emphasis
. . . (multiple periods)	Short pause, between 0.5 and 3 seconds
[5]	Longer pause; the number in the square brackets indicates the length of the pause in seconds
[	Beginning of simultaneous/overlapping talk (end of overlapping talk is indicated by])
!	An exclamation mark denotes a sharp rise at the end of a word or phrase
?	A question mark denotes rising intonation at the end of a word or phrase
(( ))	Comments made by the researcher to describe other phenomena, e.g., ((writing))

RESULTS AND DISCUSSION

One of the main aims of the present study was to reveal the patterns of interaction in the dialogues between pairs of young EFL learners while completing lexical-focused tasks. To achieve this, a single pattern of interaction was identified for each peer response transcript and the number of instances of patterns of interaction for each pair across six sessions was identified. In total, 53 patterns were identified and they are presented in Table 3.

TABLE 3. Patterns of interaction for each pair (across six sessions)

Pairs	Participants	Gender	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
1	Sara & Mina	Female/female	EN	EN	C	C	C	C
2	Amir & Hesam	Male/male	DP	DD	DD	DD	DD	DD
3	Ali & Shahin	Male/male	EN	EN	C	C	C	C
4	Sahar & Mahta	Female/female	DP	DP	DD	DD	DD	DD
5	Kimia & Nafas	Female/female	C	C	C	C	C	C
6	Shirin & Ayda	Female/female	EN	EN	EN	C	EN	C
7	Payam & Behrad	Male/male	DP	DP	-	DP	DP	DP
8	Iman & Simin	Male/female	EN	EN	EN	EN	C	C
9	Neda & Mahshid	Female/female	DD	DD	DP	DP	DD	DD

* All names are pseudonyms
* C stands for collaborative - DD stands for dominant/dominant – DP stands for dominant/passive –
 EN stands for expert/novice
* Pair7 missed the third session

Among the identified patterns, the most common one is the collaborative pattern. The participants in different pairs adopted the collaborative pattern 18 times (34%) in total. Similar studies have also found that collaborative pattern is dominant when participants in an experimental group are required to work with a peer on a task (Roberson 2014, Storch 2002, Watanabe & Swain 2007). The following excerpt[1] is an instance of two participants adopting a collaborative pattern of interaction while completing a task:

> Excerpt 1. Collaborative pattern
> 5   Kimia: It is an *egg*
> 6   Nafas: *Egg*? yes… it's an *egg*
> 7   Kimia: I want to draw it
> 8   Nafas: okay! I will colour it

9   Kimia: which colour?
10   Nafas: *blue*? I want to colour it *blue*!
11   Kimia: *blue* is good… **It's blue**
12   Nafas: *It's a blue egg*
                    [
13   Kimia: *a blue egg*
(Kimia & Nafas, Constructing *It's a blue egg*, Lines 5- 13)

In the collaborative pattern, or 'explanatory talk' (Wegerif & Mercer 1996), the pair worked together on completing the task and constructing the target sentence. According to van Lier (2000), the discourse of these participants is characterised as highly contingent. One of the features of this contingency is the existence of cohesion in the pair talk which is achieved through repetition of each other's utterances (lines 6, 11). Storch (2002) also regards the participants' engagement with the suggested utterances as another feature of the collaborative pattern. This engagement can take the form of positive feedback and more specifically confirmations provided by one participant as a response to the suggestions given by the other participant. Here, Nafas confirms Kimia's utterance (line 6) and choice of colour (line 11) through words such as "yes" and "good". Adopting a collaborative stance, the pair approach the task in a 'symmetrical participating distribution mode' (Zheng 2012) and they take an active role or, as put by Allwright (2005), they all become agents. In excerpt 1, this symmetrical distribution mode is evident in lines 7 and 8 in which both participants share the responsibility of task completion. Another feature of cohesion in the collaborative discourse is the instances in which the participants complete each other's sentences, as in lines 12-13. In line 12, Nafas initiates the sentence: "It's a blue egg" and Kimia completes her sentence in line 13 which results in an overlapping turn indicating that the participants have jointly reached a resolution through the process of polling their resources together.

The second most common pattern of interaction is dominant/dominant. This pattern was identified in 13 instances (25%) of pair talk among the participants. In the following excerpt, both participants have adopted a dominant stance:

Excerpt 2. Dominant/dominant pattern
17   Amir: Okay, I want to colour the *bag* ((points to the balloon))
18   Hesam: No! See? **balloon**
19   Amir: No! **bag, bag, bag**! Do you get it?
20   Hesam: No! Look! *It's balloon*!
                    [
21   Amir: I will colour the *bag*!
22   Hesam: I will colour the *fan*!
23   Amir: Do what you like! I am colouring the *bag*.
                    [
24   Hesam: You are stupid! **It's balloon**
(Amir & Hesam, Constructing *It's a red balloon*, Lines 17- 24)

The discourse in a dominant/dominant pattern is characterised with disputes among the participants. This dispute rises when each participant insists on his own view or utterance (lines 18-24). Here, Amir incorrectly refers to the picture of a balloon as a bag. His utterance is immediately and strongly rejected by Hesam who provides the correct word. This indicates another feature of the dominant pattern in which the positive suggestion of one of the participants is faced with a negative reaction from the other one (Zheng, 2012). In other words, one of the main features of this pattern of interaction is the large number of

disagreements between the participants. In the case of the participants in excerpt 2, these disagreements are explicitly stated via repetition of the word "no" (lines 18-20). These disagreements result from the participants' inability or unwillingness to reach a solution through negotiation. Consequently, each participant decides to work on the task individually. In line 21, Amir states that he wants to colour the shape he consistently and incorrectly refers to as a "bag", and in line 22, Hesam states that he wants to colour the shape of a "fan". This indicates that although both participants are dedicated to completing the task and have equal responsibility, they deny each other's contribution and consequently cannot approach the task in a joint participating mode.

Wegerif and Mercer (1996) refer to the dominant pattern of interaction as 'disputational talk' and regard raised voices and expressions of anger and frustration as its features. In excerpt 2, the majority of the utterances are uttered with raised tones (lines 18-24) which show the participants' exasperation as they continuously reject each other's feedback. This rejection continues throughout successive turns and is aggravated when in line 24 Hesam teases Amir by calling him "stupid". This marks the end of any chances for resolution and hits the lowest degree of mutuality. As with the dominant pattern of interaction, an instance of overlap is observed in this pair talk; however, rather than being a sign of joint construction of the utterance, here it shows climax of the dispute between the participants. Consequently, in a dominant/dominant pattern of interaction, the participants are deprived of a possible learning opportunity. In line 24, Hesam states the utterance "It's balloon", which misses a key target word (i.e. red) to match the intended sentence. The participants were so engaged in their disagreement over choosing the correct word for the object that they forgot or ignored discussing the word for colour.

Expert/novice is the third frequent pattern of interaction identified in the dialogue between the participants. Among the total instances of patterns, a number of 12 patterns (23%) possessed the features of expert/novice pattern and were classified in this category. An example of this pattern is provided in the following excerpt:

> Excerpt 3. Expert/novice pattern
> 6   Simin: what is it?
> 7   Iman: It's a star in the sky
> 8   Simin: yes… what about its **name**?
> 9   Iman: … its name?
> 10 Simin: mm… what did Anti ((referring to the teacher)) say? It's a ?
> 11 Iman: I don't know
> 12 Simin: It's a ***star****! **Star** [4] Got it?
> 13 Iman: *Star*!
> 14 Simin: Yes… Which colour should we use?
> 15 Iman: Which colour? *Blue*!
> 16 Simin: No! a better one! ((picks up a yellow pencil))
> 17 Iman: ***Yellow***
> 18 Simin: Yes. It's *yellow*. Now we say ***It's a yellow star***!
> 19 Iman: *It's yellow*
> 20 Simin: ***Star*!** *It's a yellow star*!
> 21 Iman: *It's yellow star*
> (Simin & Iman, Constructing *It's a yellow star*, Lines 6- 21)

The expert/novice pattern of interaction is marked by great mutuality but less equality. In this pattern, one of the participants assumes the role of a director of the task, while the other participant adopts a more peripheral and passive role. Thus, the responsibility

of task completion is not symmetrically distributed by the participants or, as put by Storch (2002), the degree of equality is low. In excerpt 3, Simin is the dominant participant and Iman is the passive one. This is evident in the authoritative stance taken by Simin. She initiates the task completion process by asking a direct question from Iman (line 6) and when Iman does not provide the intended target word, she poses a follow-up question (line 8). Here, the novice participant shows inability in providing the correct answer by repeating part of the expert's question. The expert picks up this signal and invites the novice to recall the instruction they have received by the teacher prior to task completion. This invitation is followed by the novice's explicit admission of lack of knowledge or failure (line 11) which indicates that he has a peripheral participation. The expert recognises this inability and provides the correct answer and also checks the novice's comprehension (line 12). She continues her administrative role by asking for the novice's opinion on the choice of colour (line 14) and provides a word-explicating invitation (line 16). Thus, instead of imposing her opinion and stating the correct word, she invites Iman's contribution.

Overall, Simin plays the role of an expert through scaffolding or direct instruction. In line 16, she mediates the task of choosing a colour by picking up a pencil with the intended colour. In the sociocultural theory, this stage of developmental process is referred to as 'object-regulation' and indicates the instances in which individuals are controlled by objects and artefacts (Lantolf 2000). Simin is successful in her use of this scaffolding technique because it mediates Iman's production of the correct target vocabulary item (line 17). The expert participant continues her contribution by confirming and repeating (line 18) the novice's utterance. In the same line, she uses direct instruction in the form of modelling the correct utterance for the novice and when the novice fails to produce the full form of the utterance (line 19), she resorts to repetition (line 20). Throughout this pair talk, Simin is authoritative but not authoritarian (van Lier 2000) and although Iman contributes peripherally to the task by adopting a non-initiative role and providing one word (lines 13, 17) and brief answers (15, 19), he is eventually able to produce the correct utterance (line 21) as the result of the constant scaffolding provided by the expert.

The least common pattern of interaction is the dominant/passive one. The participants adopted this stance in 10 instances (18%) of their dialogues. This result contradicts the findings of studies investigating the performance of the same group of participants working on one task in two modes of interaction. Tan, Wigglesworth, and Storch (2010) compared the emerging pattern of interaction of one group of learners while completing writing tasks in computer mediated communication (CMC) and in face-to-face modes. They found that dominant/passive and expert/novice patterns were most prevalent in face-to-face communication. The following excerpt depicts an example of this pattern:

> Excerpt 4. Dominant/passive pattern
> 9   Payam: So it's a *pencil*. It's so big (laughing). I want to draw the *pencil*
> 10   Behrad: mm…
> 11   Payam: what colour?
> 12   Behrad: mm….*Pink* is good. *It's pink*!
> 13   Payam: No! It's **girlish**! Not *pink*! No! *Red* is a good colour! I must use red.
> 14   Behrad: ((silence))
> 15   Payam: I am colouring it *red*. *It's red pencil*.
> 16   Behrad: It's re-
> (Payam & Behrad, Constructing *It's a pink pencil*, Lines 9-16)

The dominant/passive pattern shares similarities with the expert/novice pattern in that there is no symmetrical distribution of participants' contribution. The dominant participant

engages more in the process of task completion, while the passive participant takes a less important and peripheral role. The difference between this pattern and the expert/novice pattern is that here the dominant does not make any attempts to invite the other participants' contribution or to share the responsibility of task completion with him. Thus, according to Storch (2002), the degree of equality and mutuality is low in this pair talk.

Excerpt 4 shows an instance of such a pattern in which Payam takes a dominant role and Behrad a passive one. Here, Payam's domination of the interaction is manifested in his long monologues (lines 9, 13, 15) in which he appropriates the task by extending his turns and deciding on the target words. He makes no attempts to invite Behrad in the problem-solving and decision-making stages and the only question he asks in line (11) is a self-directed question rather than an invitation for Behrad's contribution. The long monologues and the self-directed question take the form of private speech. Vygotsky (1986) maintains that private speech guides the individual's behaviour while being engaged in task completion and it has a psychological function rather than a communicative one. When learners are faced with difficulties in cognitive processing, they resort to private speech to direct their own mental activity. Thus, the dominant participant engages in private speech as if he is unaware of the other participant's existence. As the result of this self-centred and authoritative stance taken by the dominant participant, the other participant adopts a passive role. Here, Behrad makes a suggestion (line 12) and encounters Payam's abrupt rejection (line 13). As a result, he does not propose any further changes and resorts to silence (14), and when the dominant makes the final decision and takes over the task completion (line 15), rather than challenging him, the passive participant makes an unsuccessful attempt to repeat the dominant's utterance (line 16). The little assistance sought or provided in this pattern of interaction and the passive participant's denied access to the task completion, constraints learning opportunities for the passive participant and deprives the dominant participant of chances for developing his knowledge.

The second aim of the present study was to investigate the relationship between different patterns of interaction and different achievements on a vocabulary post-test. Storch (2002) refers to such a relationship as 'transfer of knowledge'. To investigate such a transfer, first an overall pattern for each pair was identified. To do so, the pattern which was present with the highest percentage in the pair talk was designated as the overall pattern. For example, among the six dialogues between the participants in Pair 1, 67% were marked as collaborative and 33% as expert/novice. Thus, the overall pattern of interaction in pair 1 across six sessions was coded as collaborative. The same procedure was done for all the pairs, as presented in Table 4.

TABLE 4. Patterns of interaction for each pair (overall) and post-test scores

Pair	Participants	Pattern of interaction	Vocabulary test scores	Mean scores
1	Sara	Collaborative	22	22.5
	Mina		23	
2	Amir	Dominant/dominant	16	15
	Hesam		14	
3	Ali	Collaborative	20	19.5
	Shahin		19	
4	Sahar	Dominant/dominant	15	15.5
	Mahta		16	
5	Kimia	Collaborative	21	21.5
	Nafas		22	
6	Shirin	Expert/novice	20	19
	Ayda		16	
7	Payam	Dominant/passive	18	14.5
	Behrad		13	
8	Iman	Expert/novice	19	20

	Simin		21	
9	Neda	Dominant/dominant	15	14.5
	Mahshid		14	

As shown in the Table 4, three pairs adopted a collaborative pattern, three pairs a dominant/dominant pattern, two pairs an expert/novice pattern, and one pair a dominant/passive pattern of interaction. The collaborative pairs achieved the highest means scores on a vocabulary post-test (M= 22.5, 19.5, 21.5). The second highest mean score belongs to the expert/novice pairs (M= 19, 20). The dominant/dominant pairs achieved the lowest mean scores (M= 15, 15.5, 14.5) and the only dominant/passive pair gained a low mean score of 14.5.

When the participants adopt a collaborative pattern of interaction, they discuss alternative views during problem solving and reach to a resolution that is acceptable by both of them. In the present study, discussing alternative views was mainly concerned with making a choice about two key elements of each task: words for objects and words for colours. The core of pair talk in the data of the collaborative participants indicates that they highly focused on completing the task with the use of vocabulary items that were acceptable to them. This focus can be one of the reasons for the higher scores these participants gained in the post-test. In other words, it seems that negotiation of meaning can have a facilitative effect on acquisition. Long (1996) believes that the participants connect input, their capabilities, and output in a joint quest for reaching a resolution. Other studies have found similar results when concerned with the benefits of homogenous pair work (Donato 1994, Swain & Lapkin 1998, Ohta 2000). Homogeneity, in these studies, is another name for collaborative pattern of interaction in which the participants are at the same level of L2 proficiency. Thus, there is no predetermined dichotomy of expert-novice in the interactions of these participants and they are both collaborative peers. In this pattern, the collaborative dialogue provides the learners with "opportunities to co-construct a complex linguistic structure by focusing their attention and providing opportunities to revise their own language use" (Swain & Watanabe 2013, p.3218). The collaborative participants in this study used these opportunities to their own benefits by engaging in posing questions and explaining their choices which resulted in their knowledge being extended. They shared this knowledge while working on language tasks by giving feedback on language use to each other. The focus they had on vocabulary items makes language go beyond its immediate function as just a means for communication and turns it into a tool which allows the participants to "co-construct knowledge together" (Mercer 1995, p.4). The collaborative negotiation that takes place during participants' joint pursue of a solution to a language problem enables them to understand words beyond their present level of competence and also promotes their vocabulary knowledge as witnessed in their post-test performance. In a collaborative environment, the participants create shared meaning through exchanging information and knowledge with each other which leads to the formation of social context that is mediated by relationships, preferences, and motivation of the participants. As a result, the participants actively engage in the process of task completion which can be another reason for higher retention of the vocabulary items by the collaborative participants. That is, when working together to solve linguistic problems, the repetition and negotiation of the vocabulary items might result in their easier retrieval. This can be caused by the lasting effect of negotiation on memory (Luan & Sappathy 2011).

The second highest gains in vocabulary acquisition belong to the participants adopting an expert/novice pattern of interaction. In this pattern, the peers tutored and mediated the learning process of their peers (Lantolf 2000). Collaborative dialogue, as one of the forms of interaction, among peers can function as instructional conversations between experts and learners (Swain 2000). Here, one of the participants took the role of the group leader by praising or encouraging, accepting or using others' ideas, asking questions, giving directions,

and criticizing each other. It seemed that the other group members did not object this, especially when it came to encouraging and giving directions. Thus, it is possible for peers with almost equal ability to provide social mediations for other learners. Other confirming research examining peer dialogue (Ohta 2000, Swain, Brooks and Tocalli-Beller 2002) showed that by requesting help from other peers and offering advice, the participants positioned themselves as experts and novices throughout the interactions. Together, they could achieve a level of performance beyond their individual level of competence (Ohta 2000).

The view of vocabulary learning adopted in the collaborative and expert/novice patterns of interaction is a contextualised one in which according to Nation (cited in Nation & Waring 1997), "vocabulary knowledge enables language use [and] language use enables the increase of vocabulary knowledge" (p.6). This is in line with Dobao's (2012) findings that there is a link between vocabulary learning and collaborative problem-solving activities. Due to the essentiality of conveying and comprehending messages in these activities, learners built new lexical knowledge that was previously unavailable to them. One feature of such collaboration is the "continual repetition" of the vocabulary items which is regarded by Nakata (2006) as a requirement for effective vocabulary learning (p.19). While working together on a task, learners use and re-use the key words in variety of ways throughout the interaction and this can boost their comprehension of the work meaning and use and also can contribute to a long-term effect on the memory. The importance of continual repetition has also been stated by Nation and Waring (1997) who maintained that for a word to be learned, it should be encountered multiple times by the learners in authentic contexts and at the students' appropriate level. As it was shown and discussed in Excerpts 1 and 3, learners adopting collaborative and expert/novice patterns of interaction were successful in creating a joint ZPD and bringing the task or vocabulary learning to a shared appropriate level. This, in turn, could have contributed to their higher achievements in the vocabulary post-test.

The vocabulary achievement of learners can also be explained with regards to the relationship between oral input and comprehension. Studies on first language acquisition have shown that one way in which children acquire the vocabulary of their first language is through extensive listening and when they focus on the message being conveyed and not the words (Nagy, Herman and Anderson 1985, Sternberg 1987). This line of studies was applied in second/foreign language acquisition and evidence was found that there is a relationship between oral input and acquisition of new words (Ellis, Tanaka & Yamazaki 1994). When engaged in meaning negotiation, learners listen to the input modified by the other participants and this input can be enough for comprehension and vocabulary acquisition (Pica 1992, Ellis et al. 1994). In the present study, those participants who adopted collaborative and expert/novice patterns of interaction, afforded each other with opportunities for interaction and in return acquired the new words 'subconsciously' (Schmidt 2010).

The social interdependence and interaction that take place in these collaborative learning processes can develop "interpersonal skills, positive attitudes towards group work and social relationships" (Lin, Chan & Hsiao 2011, p.91). Brown (2008) also discussed the driving force which is inherent in the structure of collaborative learning and fosters positive interdependent relationships between group members. Motivation is regarded as "the combination of effort plus desire to achieve the goal of learning the language plus favourable attitudes toward learning the language" (Gardner 1985, p. 10 cited in Xu 2008). It is a crucial factor in the second/foreign language learning process (Reece & Walker 1997 cited in Gomleksiz 2001) and more specifically contributes to achievement in terms of language outcomes including knowledge of vocabulary (Gardner 1985 cited in Xu 2008). Vocabulary learning, as acknowledged by Yongqi Gu (2003), is a "learner-centred activity" and is under the influence of the motivation and attitude that the learners possess towards the learning

process. Each learner brings with her/himself a motivational factor to the task and when working collaboratively towards task completion, the accumulation of these motivational factors can create a more positive, relaxed, and enjoyable context for learning. The young learners who participated in this study seem to have benefited from "creation of a positive climate" as evident in their overall approach towards pair work as well as their post-test achievements in vocabulary (Gomleksiz 2001, p. 220).

CONCLUSION AND IMPLICATIONS

This study aimed at investigating whether Storch's (2002) patterns of interaction can be extended to other aspects of language learning such as vocabulary acquisition and be applied to analysing pair talk among young learners of English. All four patterns of interaction identified by Storch were examined in the pair talk between the participants. While collaborative and dominant/dominant patterns were the most frequent patterns identified, they were not necessarily associated with better vocabulary acquisition. The two patterns, most conductive to the participants' learning, were collaborative and expert/novice patterns. Thus, the interaction between experts and the interaction between experts and novice are of great significance and value in learning and teaching contexts. By adopting these stances towards each other, the participants provide means of development in themselves and their peers through mutual scaffolding. Although these two patterns seem ideal to be promoted in language classrooms, two points should be taken into consideration: one is that the participants do not adopt these two patterns by default. That is, when engaged in completing a collaborative task, the participants do not always naturally and automatically take the role of a collaborative or expert participant. They might instead resort to a dominant or a passive role. The second point is that the dominant/dominant and dominant/passive patterns of interaction are not deprived of any learning potentials. As found in this study, although the participants adopting these two patterns had lower vocabulary gains, they learnt more than half of the vocabulary items.

The findings of the present study can have implicational values for teachers. They need to adopt the role of a mediator when dealing with different patterns of interaction. In the dominant/dominant interaction, the teacher is faced with participants who insist on their own ideas and reject the ideas of the other party. In such cases, the teachers can engage the participants in reflection processes. When the participants reflect on their ideas and choices, they are afforded with opportunities to rethink their hypotheses and see the merits in their peers' ideas. These new understandings can persuade participants to step down of their authoritarian stances. Thus, promoting the state of tolerance and postponing judgments and decision makings are among the goals the teacher can pursue when dealing with dominant/dominant participants. In the dominant/passive pattern, the teacher's mediation needs to be two folded. On the one hand, there is a dominant learner who needs teacher intervention to develop tolerance as well as open mindedness towards ideas of the other peer. This can partly be achieved by assigning the role of an instructor to the dominant learner. The responsibility of transferring knowledge to another peer can, in time, bring about opportunities for peer scaffolding and a "sense of mutual development" (Zheng 2012, p.123). As for the novice peer, the teacher can aim at developing a sense of self-appreciation and self-worth in the participants to the extent that they come to regard their contributions as significant in the process of joint learning.

Furthermore, teachers can create communities of learning in which opportunities for joint learning are provided for the learners. One of the benefits of providing learners with opportunities to collaborate with their peers can be inferred from Aljaafreh & Lantolf's

(1994) statement that "different learners often have different ZPDs for the same target language form and will therefore require different levels of help" (p. 473). The findings of the present study indicated that even learners who are young and are at the beginning levels of foreign language acquisition, have the ability to offer each other different levels of assistance. Thus, teachers can rely on this ability and engage young learners in joint problem-solving. Such collaborative group work can play a beneficial role in EFL contexts, where practicing the learned language beyond the classroom context is barely possible.

Notes should be taken that the findings of the present study are local and situational. The global application of them to other learning contexts needs further investigations. More specifically, longitudinal studies which can track the change in patterns of interaction are required. Also, this change can be traced before and after the teacher's intervention to provide a deeper understanding of the complexity of human interaction in learning contexts. This study witnessed that Storch's (2002) framework is not exclusive to written language tasks and adult learners. Future research can focus on more varied aspects of language and different language learners.

ENDNOTE

1. Since the participants were young EFL learners, they used their L1 (Persian) while completing the tasks. In the excerpts, only the words in italics have been spoken in English by the participants and they include the target words (objects + colour) in the structure of 'It's a + colour + object' (e.g. It's a blue car).

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