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Collaborative Dialogue during Tasks in Synchronous Computer-Mediated Communication

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COLLABORATIVE DIALOGUE DURING TASKS IN SYNCHRONOUS
COMPUTER-MEDIATED COMMUNICATION

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ABSTRACT

This dissertation, drawing on Swain’s (2000; 2005) notion of collaborative dialogue, aimed to explore whether learners participating in SCMC based tasks engage in collaborative dialogue and, if so, to investigate the extent and characteristics of this behavior. In order to provide insights into the task type that may promote collaborative dialogue most effectively, the study compared two task types that are claimed to be contrasting (Swain & Lapkin, 2001) with regard to the degree of attention to form they promote: jigsaw and dictogloss. The following research questions were addressed: (1) To what extent do learners attempt to solve linguistic problems by way of collaborative dialogue during SCMC based tasks? (2) What are the characteristics of the collaborative dialogue with regard to focus, outcome, verbalization, collaboration, and source? (3) Does task type (dictogloss and jigsaw) have an effect on the amount of collaborative dialogue? (4) Does task type (dictogloss and jigsaw) have an effect on the characteristics of collaborative dialogue?

The study involved 54 Turkish speaking English-as-a- Foreign-Language (EFL) learners. Learners were enrolled in four intact classes at two Turkish universities in Istanbul. Two jigsaw-dictogloss pairs were designed and matched for content. Following a practice task session, randomly formed dyads of students from each class performed one jigsaw and one dictogloss by using the MSN Messenger instant messaging and CoWord collaborative editing software. Language-Related Episodes (LREs) were identified in learner-learner interaction and categorized based on five levels: focus, outcome, verbalization, collaboration and source. It was found that LREs did occur during task-based SCMC. However, the frequency of LRES seemed to be low in comparison F2F studies. Results also showed that the dictogloss task elicited a higher number of LREs than the jigsaw task. At descriptive level, tasks were different with respect to the characteristics of LREs. While the dictogloss was characterized by orthographic and correctly solved LREs, the jigsaw was characterized by unresolved LREs. The results were discussed in light of the arguments about the effects of limited information-processing capacity on task performance (Skehan, 1998).
CHAPTER 1
INTRODUCTION

People every day at home, work or school use computers to communicate with others for various purposes. They write e-mail to an authority to obtain information, participate in heated debates in discussion forums, and “chat” with their friends to socialize. All these ways of communication and some others not mentioned here constitute different representations of the idea known as Computer-Mediated Communication (CMC). This study deals with one form of CMC, what we call Synchronous Computer-Mediated Communication (SCMC). SCMC is a type of communication that involves the mediation of computers connected to one another through the Internet or other types of networks. Real time communication distinguishes SCMC from asynchronous computer-mediated communication, which is the other major category of CMC.

The fact that SCMC based daily activities have become an integral part of the society has provided a rationale for a survey of the novel opportunities in SCMC with respect to second language (L2) teaching and learning. Shetzer and Warschauer (2000), advocating for an electronic literacy approach, express the inevitability of a research enterprise that needs to be allocated to investigate SCMC. They state that “becoming literate is not just a matter of learning how to decode and put to paper letters and words, but rather a matter of mastering processes that are deemed valuable in particular societies, culture and contexts” (p. 171). Thus, starting from the early 1990s, one of those processes that is deemed valuable in the society, namely SCMC, has attracted interest in L2 research.

Research has provided some empirical evidence for the pedagogical benefits of SCMC. Early research has suggested that learners’ participation in SCMC based activities is greater than in face-to-face (F2F) activities (Beauvois, 1992, 1998; Kern, 1995). Research has also shown that SCMC promotes equality in participation (Kern, 1995; Sullivan & Pratt, 1996; Warschauer, 1996). Chun (1994), Warschauer (1996) and Sotillo (2000) have addressed the quality of the discourse in SCMC and concluded that SCMC allows learners to use a wide array of discourse functions. In addition, the discourse in SCMC is syntactically and lexically more complex than the discourse in
oral interactions (Warschauer, 1996). The motivational aspect of SCMC has also been underscored by the studies that have reported on learners’ positive attitudes about doing activities in SCMC (Beauvois, 1992; Warschauer, 1996).

In addition to the above-mentioned possible benefits, research has shown that SCMC displays features of both oral and written communication. Lexical density, lack of intonation, use of punctuation, monitoring language production are some of those features that are similar to written communication (Smith, 2003b; Payne & Whitney, 2002; Warshauer, 1996, 1997). Features of oral communication, such as short turns, immediateness, informality of discourse and many unnoticed grammar mistakes are also present in the discourse in SCMC (Kern, 1995; Smith, 2003b; Sotillo, 2000). SCMC exhibits some features that are not common in oral and written communication. These medium-specific features include use of playful language, special emphasis on leave-taking and greetings, use of abbreviated language, and use of punctuation, text format and emoticons to express emotion and stress (Abrams, 2003; Chun, 1994; Darhower; 2000; Negretti, 1999; Warner, 2004).

Another line of research has explored the language learning opportunities in SCMC with a special emphasis on negotiation of meaning. Negotiation of meaning has been claimed to be a feature of learner talk that plays an important role in second language acquisition (SLA) by providing opportunities for interactional modifications and increasing input comprehensibility (Long & Robinson, 1998). Research has sought to answer whether learners in SCMC based tasks negotiate for meaning and what types of linguistic features attract negotiation (Blake, 2000; Blake & Zyzik, 2003; de la Fuente, 2003; Kitade, 2000; Lee, 2002; Pelletieri, 2000; Smith, 2003a; Tudini, 2003). In sum, findings have revealed that learners in SCMC based tasks negotiate for meaning, but the frequency of this type of talk is not as high as in F2F communication (Chappelle, 2004; Tudini, 2003). Most of the negotiations in SCMC based tasks are triggered by lexical misunderstandings (Pelletieri, 2000; Smith, 2003a; Tudini, 2003). Medium-specific features affect the nature of negotiation of meaning (Smith, 2003a). Therefore, negotiation of meaning with its assumed benefits for learning may be working differently in SCMC (Chappelle, 2004).
A parallel line of research in SCMC has focused on the effects of tasks. While first attempts to explore the features of SCMC (Beauvois, 1992, 1998; Chun, 1994; Kern 1995; Kitade, 2000; Sotillo, 2000, Sullivan & Pratt; 1996; Warschauer; 1996) have used free discussion tasks, more recent studies have turned their attention to the tasks that have been widely used in F2F SLA literature (e.g., jigsaw, decision-making). Although very few in number, studies (e.g., Blake 2000; Oscoz, 2003; Smith, 2003a) have addressed the effect of tasks in generating specific types of learner language, more specifically, negotiation of meaning. Blake (2000), Oscoz (2003), and Smith (2003a) have tested the prediction that jigsaw tasks create the most appropriate environment for negotiation work (Pica, Kanagy & Falodun, 1993). While Blake and Oscoz have brought evidence supporting this prediction, Smith has found that decision-making tasks can generate more meaning negotiation than jigsaws in certain circumstances.

**Statement of the Problem**

It is been widely accepted that a focus on linguistic form in addition to a focus on meaning is beneficial for language acquisition (Doughty & Williams, 1998a; Long, 1992, 1996; Long & Robinson, 1998; Norris & Ortega, 2000; Swain, 1995, 2005). Conversational interaction provides an appropriate context for learners to focus on form (Long, 1996, Long & Robinson, 1998). Interaction where learners negotiate for meaning and provide each other negative feedback has been claimed to facilitate SLA. It has been argued that these two interactional features by making input comprehensible and drawing learners’ attention to form help L2 development (Gass 1997, Long, 1996, Pica 1994). In addition, interaction can be of value to learners because it provides opportunities to produce output. According to Swain’s (1995, 2005) output hypothesis, learners can benefit from language production in three ways. First, language production can help learners notice holes in their L2 knowledge, which may lead them to notice the gap between what they are able to produce and what is available in the input (Schmidt & Frota, 1986). Second, language production allows them to test their hypotheses against target language norms. Thus, output can serve as an arena where learners expose their best guesses about how the target language works (Swain, 2005). Finally, language production leads learners to reflect on their own and their partners' output, and thus, increases their metalinguistic awareness. All these functions of output can be
observed in learners’ collaborative dialogue where learners reflect consciously on their own language use. Specific instances of collaborative dialogue are called Language-Related Episodes (Swain, 2001). It has been claimed that collaborative dialogue that arises from learners’ needs can explain some language learning (Swain, 2005).

Despite the assumed benefits of collaborative dialogue, it is surprising that so little SCMC research has actually addressed the topic. Whereas early research has shown that learners participating in SCMC based activities lack accuracy (Kern, 1996; Sotillo, 2000), more recent works have revealed that this does not necessarily mean that learners do not pay attention to language forms (Blake, 2000; de la Fuente, 2003; Garcia & Arbelaitz; Kitade, 2000; Lee, 2002; Pelletieri, 2000; Tudini, 2003). These studies have given examples from learner-learner SCMC interaction illustrating that learners engage in what may called instances of collaborative dialogue. Learners that participate in SCMC based activities correct their own as well as their partners’ errors, discuss the meanings of words and engage in conversations about their immediate language use. Despite their endeavor to exemplify learners’ language focused behavior, these studies have not been able to give enough emphasis on the phenomenon. Part of this lack of emphasis has stemmed from the fact that these studies have set out with questions to examine negotiation of meaning. Thus, they could only report on the instances of collaborative dialogue as additional findings. What remains to be explored, however, is the extent and the nature of learners’ language-focused behavior in SCMC based tasks. In addition, only a relative handful of studies have specifically examined the task effects in SCMC and the ones that had this focus investigated the tasks effects in relation to negotiation of meaning (Blake, 2000; Oscoz, 2003; Smith, 2003a). No research effort has been spent to explore the effects of tasks on the ways learners deal with language forms through collaborative dialogue. Therefore, more research investigating the differences between tasks in relation to collaborative dialogue is needed.

**Collaborative Dialogue**

This study adopts the construct of collaborative dialogue to investigate learners’ language-focused behavior. Swain (1997) defines the notion of collaborative dialogue as a dialogue where linguistic knowledge is constructed by the joint effort of two or
more individuals. Collaborative dialogue as a construct captures both the cognitive and social side of learners’ activities (Swain, 2000). Swain (1997) argues that in collaborative dialogue learners attempt to solve linguistic problems through joint effort and, as a result, they move beyond their current cognitive and linguistic state. The joint effort that can be observed from their dialogue is language learning in process. In other words, while learners’ engage in collaborative dialogue they give evidence of that they are benefiting from the mechanisms (e.g., noticing the hole, noticing the gap) that have been claimed to beneficial for language learning. Initial investigations that tested the link between language learning and collaborative dialogue so far have brought optimistic results showing that learners hold on to their collaborative solutions to the linguistic problems and reproduce them in tailor-made post-test items or subsequent performance (e.g., Donato, 1994; Loewen, 2005; Swain & Lapkin, 1998, 2001; Williams, 2001).

Collaborative dialogue is operationalized through Language-Related Episodes (LREs). Swain (1998) defines an LREs as “any part of a dialogue in which students talk about the language they are producing, question their language use, or other –or self-correct” (p. 70). LREs can account for many different instances of learner-learner interaction where learners pay attention to form in observable ways. Interestingly, SCMC research has not shown sufficient interest in collaborative dialogue that can be very useful in analyzing learner-learner interaction. The present study, while trying to add to the understanding about learner’s attempts to solve linguistic problems in SCMC, uses collaborative dialogue as a construct.

**Tasks in L2 Research**

In SLA research, tasks have been categorized in various ways. Of particular interest to this study is the distinction between one-way and two-way information gap, also called jigsaw, tasks. Whereas in one-way tasks, the information necessary to solve the problem is held by only one learner, in two-way tasks, no one participant possesses all the information that is required to complete the task (Long, 1980). Pica, Kanagy and Falodun (1993) argue that jigsaw tasks “can be considered the type of task most likely to generate opportunities to work toward comprehension, feedback, and interlanguage modification processes related to successful SLA” (p.21). In these tasks, learners
possess separate pieces of a puzzle and, by combining the information presented in their pieces, they complete the task.

More recently, researchers came to be interested in tasks that will help learners focus their attention on language forms by momentarily suspending their attention to meaning (Ellis, 2003). The need for these tasks came from findings of classroom research in French immersion programs (Swain, 1985, 1991) and also other meaning-focused classrooms (Pica, 2005). The findings have suggested that even after years of meaning focused English education, students could not reach full grammatical competence. One of the tasks that has been claimed to direct learners’ attention to linguistic forms in a meaningful task environment is dictogloss (Wajnryb, 1990). In dictogloss tasks, a short text is read to the learners at a normal speed and they are allowed to jot down notes as they listen. In small groups, learners work together to reconstruct their version of the original text (Wajnryb, 1990). Dictogloss tasks have been found to be useful in leading learners to pay attention to form while they engage in constructing the meaning of a text (Swain & Lapkin, 2001).

Swain and Lapkin (2001) predicted that the jigsaw and the dictogloss were contrasting in that whereas the jigsaw leads learners to negotiate meaning the dictogloss leads learners to negotiate formal properties of language while requiring learners to attend to the meaningful of a text. In the jigsaw, the information gap is created by the task design, whereas in the dictogloss the task design does not necessarily create information gap between learners. Learners performing this task can well coincide in the pieces of information they obtained through the listening stage. Gaps, if any, are created by the degree the task-takers hear the text differentially.

Only a few studies in SCMC presented a research agenda to investigate the effects of tasks. Ortega (1997) argued that if research did not address the issue of task, its conditions and its process, we could hardly move beyond making vague predictions about SCMC, and we would be left with another black box. The present study focuses on the jigsaw and the dictogloss tasks and seeks to answer whether they influence learners’ efforts to deal with language-related problems. Despite the fact that based on the findings of F2F collaborative dialogue studies (Swain & Lapkin, 2001), these two tasks did not show the expected differences, research needs to reevaluate these two
tasks in SCMC settings. The above findings of SCMC research that have revealed that, in some respects, SCMC shares certain features with both oral and written communication and, in some respects, it displays unique features give a peculiar status to this type of communication. This different nature, in turn, presents a rationale for predicting that the tasks under study can behave differently in this environment.

**The Purpose of the Present Study**

The present study mainly addresses an underinvestigated area in SCMC research as identified in the statement of the problem. To articulate it again, research has provided an inadequate understanding as to what extent and in what ways learners engage in form-focused talk. This study adopts the construct of collaborative dialogue to explore this behavior. Therefore, the purpose of this study is to investigate whether or not Turkish speaking English-as-a-Foreign-language (EFL) learners participating in tasks through SCMC engage in form-focused talk ways and, if they do, to explore the nature of this behavior. While addressing the issue, this study gives recognition to any possible connection between the occurrence of this language behavior and tasks, and it compares jigsaw tasks to dictogloss tasks in order to understand whether collaborative dialogue varies from one task environment to another.

This study seeks to answer the following research questions:

1. To what extent learners attempt to solve linguistic problems by way of collaborative dialogue during SCMC based tasks?
2. What are the characteristics of the collaborative dialogue with regard to focus, outcome, verbalization, collaboration, and source?
3. Does task type (dictogloss and jigsaw) have an effect on the amount of collaborative dialogue?
4. Does task type (dictogloss and jigsaw) have an effect on the characteristics of collaborative dialogue?

Whereas the first and second research questions are exploratory in nature, the third and fourth research question seeks to confirm the hypothesis that dictogloss and jigsaw tasks differ from each other with respect to the extent and characteristics of collaborative dialogue. The third research question examines the effect of the independent variable, task type, on the dependent variable, the amount of collaborative
dialogue. The variable task type is operationalized through the use of the jigsaw and dictogloss. The concept of collaborative dialogue is operationalized through LREs, which are defined for current purposes as any part of learner-learner dialogue where learners address or attempt to address language itself by expressing a need about their language use, making statements about language, evaluating their partners’ or their own production, or self/other-correcting. The characteristics of collaborative dialogue, which is the independent variable for the fourth research question, is operationalized through the analysis of the focus, outcome, verbalization, collaboration and source of LREs. More information about these levels is provided in Chapter 3.

**The Significance of the Present Study**

As mentioned in the statement of the problem, only a few SCMC studies have touched on learners’ language behavior that targets linguistic problems. Most of these studies have not addressed the issue as their primary focus. In addition, collaborative dialogue as a construct framing learners’ form-focused talk has not been used by SCMC research. This study, by investigating the nature of collaborative dialogue, will contribute to the understanding of how learners pay attention to form during SCMC based tasks. In addition, as Swain (1997) argues, collaborative dialogue is a ground where language use and language learning co-occur. Therefore, this study will also shed light onto a phenomenon that is claimed to be beneficial for language learning.

A further possible contribution of the study is in the area of task effects in SCMC. The understanding of task effects has been limited with the findings of a few studies most of which have dealt with the relationship between jigsaw tasks and negotiation of meaning. This study compares the dictogloss and the jigsaw with regard to their effect on collaborative dialogue. With this scope, it aims to contribute to our knowledge as to how certain task types trigger certain types of language behavior.

**Definition of Terms**

Asynchronous computer-mediated communication: communication via computers in which interactants’ messages reach to their destination with a time delay.

Collaborative dialogue: a dialogue where linguistic knowledge is constructed by the joint effort of two or more individuals (Swain, 1977).

Computer-mediated communication (CMC): any form of communication
between two or more individuals for the purposes of transferring, storing and retrieving information (Berge & Collins, 1995).

Dictogloss: a “procedure that requires learners to reconstruct a short text after listening to it twice” (Ellis, 2003, p. 341).


Face-to-Face (F2F) communication: a type of communication that contrasts with computer-mediated communication. It represents activities that are not performed through the use of computers.

Free discussions: activities that require learners present their opinion on a piece of reading or a class topic in an SCMC environment (Oscoz, 2003).

Jigsaw: a type of classroom work in which learners given two separate pieces of information and need to combine them in order to achieve the activity goal (Ellis, 2003).

Language-Related Episodes (LREs): any part of learner-learner dialogue where learners address or attempt to address language itself by expressing a need about their language use, making statements about it, evaluating their partners’ or their own production, or self/other-correcting (Swain & Lapkin, 1998).

Negotiation of meaning: “modification and restructuring of interaction that occurs when learners and interlocutors anticipate, perceive, or experience difficulties in message comprehensibility” (Pica, 1994, p.494).

One-way information gap task: a task where only one participant holds the information that is necessary to complete the task (Markee, 2000).

Second language acquisition (SLA): SLA refers to both the processes by which people learn languages other than their native language and the field that investigate these processes.

Sociocultural theory (SCT): a theory of human psychological development derived from the work Vygotksy that emphasizes the role of mediation through cultural artifacts in the development of higher mental functioning (Lantolf, 2000).

Synchronous computer-mediated communication (SCMC): communication via the use of computers that occurs in real time (e.g., chat rooms, instant messaging).
Task: an “activity which requires to use language, with emphasis on meaning, to attain an objective” (Bygate, Skehan, & Swain, 2001, p.11).

**Summary**

This chapter has provided an overview of the present study. It has introduced the background literature and discussed the research problem. It has also provided some background for two concepts that the study addresses: collaborative dialogue and L2 tasks. It has explained the purpose of the study, presented the research questions and discussed some possible contributions of the study.

**Organization of the Study**

Chapter 1 has introduced the research problem that the study addresses. It has also explained the purpose and significance of the study and discussed two theoretical constructs that are pertinent to the study. Chapter 2 discusses the theoretical framework that is in the background of the study. It also reviews two strands of literature: F2F collaborative dialogue literature and SCMC literature. The chapter focuses on the findings that are relevant to collaborative dialogue and tasks. Chapter 3 explains the methodology of the study. It describes the setting and participants. It also presents a section where the specific instruments that are used in the present study are introduced and described. Two sections explaining the data collection procedures and data analysis follow. Chapter 4 explains the statistical procedures carried out to answer the research questions. It reports the results of these tests supported with tables and graphics. Chapter 5 discusses the results in light of the previous studies and theoretical constructs in the SLA literature. Chapter 5 also provides a discussion about some possible pedagogical implications of the study. Some key limitations and suggestions for future research are presented, as well. The chapter ends with some concluding remarks.
CHAPTER 2
THEORETICAL FRAMEWORK AND REVIEW OF RELATED LITERATURE

The aim of this chapter is to provide a discussion about the theoretical framework and present a comprehensive review of the relevant literature. The study investigates the nature of collaborative dialogue in SCMC with an emphasis on task effects. Thus, the topics suggested by this scope, namely collaborative dialogue, SCMC and task effects, are explored in this chapter. The first four sections present an overview of the theoretical constructs that are adopted in this study. The fifth and sixth sections review two strands of literature. The first of these covers the findings of the F2F research in relation to collaborative dialogue by focusing on its nature, its relevance to language development and tasks. The second focuses on the findings of the research on SCMC with emphases on its discourse features, its possible contributions to language development and its relevance to tasks.

Focus on Form

Focus on form has been a key theoretical framework in many interaction-based studies in the field of SLA. Essential to the framework is the distinction made by Long (1991) between two concepts: focus on form and focus on forms. Lessons with a focus on forms organize units into linguistic elements. As in Wilkins's (1976) synthetic syllabus, language is broken down into units such as words, grammar rules, phones, notions, or functions and these lists of structures are sequenced to facilitate the order of presentation to learners. A lesson with a focus on forms teaches, for instance, "the past continuous", "the passive voice", or "requesting". The basic distinction between focus on form and focus on forms is that whereas the content of lessons with a focus on forms is the structures, notions or function, a syllabus with a focus on form teaches content in such as biology, geography of a country, cooking, etc.

It has been argued that the way focus on forms organizes teaching units is incompatible with language learners' natural learning trajectory. Evidence from interlanguage development research is at odds with the application of the focus on forms approach. The findings of this research showed that acquisition followed predictable developmental sequences in word order, relative clauses, negation, interrogatives, pronouns (Long & Robinson, 1998). Sudden categorical acquisition of
new forms is a rare occasion. Long and Robinson (1998) argue that acquisition of forms is not a one-step move from zero to complete mastery but a prolonged periods of form-function mapping.

An alternative to a focus on forms is a focus on meaning. Whereas a focus on forms ignores the meaning component, a focus on meaning completely rules out any concern for forms. The basis for this approach is the wish for duplicating the conditions of L1 learning where no time is spent on discrete elements of language. There are several problems with the focus on meaning approach in general. First, older language learners do not have the same capacity to learn languages because of some maturational constraints (Long, 1990, 2007). In addition, the findings of classroom research in French immersion programs (Swain, 1985, 1991) and also other meaning focused, content classrooms (Pica, 2005) suggested that even after years of meaning focused English education students could not reach full grammatical competence. Finally, White (1991) argued that positive evidence, where only what is possible in one language is presented, could not be enough to learn some L1-L2 grammatical contrasts, and therefore, negative evidence, where what is not permissible in one language is shown needed.

Long (1991) and Long and Robinson (1998) emphasize the general weakness of the meaning only instruction type, in which no special effort is made to deal with form. They argue that the focus on form techniques can be beneficial in directing students’ attention to language forms. The focus on form techniques "overtly draws students' attention to linguistic elements as they arise incidentally in lesson whose overriding focus is on meaning or communication" (Long, 1991, p. 46). The focus on form, Long and Robinson (1998) state, is motivated by Interaction Hypothesis (IH) (Long, 1983, 1996). It is widely accepted that conversational interaction where meaning is negotiated plays an important role in SLA (e.g., Gass, 1997; Long, 1996; Pica, 1994). Meaning negotiation where “learners seek clarification, confirmation, and repetition of L2 utterances they do not understand” (Pica, 1994, p. 56) creates a favorable environment for language learning by providing learners with comprehensible input (Krashen, 1982), which is necessary, but not sufficient, for language learning, and negative
feedback, which helps language development by showing learners what is not permissible in the L2 (Long, 1996).

The focus on form refers to how focal attentional resources are allocated” (Long & Robinson, 1998, p. 23). It consists of occasional shift of attention to linguistic code features when the need arises. Long and Robinson explain various ways to implement a focus on form approach in the classroom. They find recasts, where the teacher reformulates the learner’s erroneous language use, a particularly promising type of negative feedback because they are less likely to interrupt the predominant focus on meaning in the class. Finally, the following quotation from Doughty and Williams (1998b) succinctly summarizes the three perspectives on language teaching that have been discussed so far: “focus on form entails a focus on formal elements of language, whereas focus on formS is limited to such a focus, and focus on meaning excludes it” (p. 4).

Tasks

It is not easy to give an all-encompassing definition of tasks due to the lack of consensus in the field of SLA. Nunan (2004) defines tasks as “a piece of classroom work which involves learners in comprehending, manipulating, producing, or interacting in the target language […] and in which the intention is to convey meaning rather than to manipulate form” (p. 10). Along the same lines, Bygate, Skehan, and Swain (2001) define tasks as “an activity which requires to use language, with emphasis on meaning, to attain an objective” (p. 11). Skehan (1998) proposes the following features for tasks: (1) meaning is primary, (2) involves a communication problem to solve, (3) there is a link to real-world activities, (4) completion of the task is essential, (5) the assessment of the task is based on its outcome. It is apparent from the features listed above that researchers are far from a complete agreement. However, there seems to be an agreement on the feature that tasks should involve a meaning focus with an objective to accomplish.

The use of a task-based syllabus sits well with the tenets of the focus on form approach. Long and Crookes (1992) proposed that the use of tasks allows acquisitional processes to operate, such as negotiation of meaning, and it maintains a focus on form. The main principle of focus on form is to draw learners' attention briefly to problematic
language elements in a predominantly communicative lesson. Tasks, as described above, that carry a meaning focus and presents an objective to follow provides an optimum communicative environment. For Skehan (1998), tasks are ideal because they lend themselves to manipulation. The manipulation of tasks may enable researchers to increase or decrease their complexity to match with the purpose of the class. For example, less demanding tasks in terms of attentional resources generate spare attentional capacity to focus on accuracy.

Tasks have been categorized according to features, such as their being one-way or two-way, convergent or divergent, closed or open, planned or unplanned (Markee, 2000). In one-way tasks, only one learner has the information necessary to solve the problem that the task poses. In two-way tasks, no one participant possesses all the information that is required to complete the task and the information flow is two-way (Long, 1980). In convergent tasks, learners try to reach an agreement on a mutually acceptable solution to a problem, whereas in divergent tasks, consensus is not necessary. In divergent tasks, learners present their own perspectives on a problem. Convergent tasks have been claimed to be superior to divergent tasks with regard to conversationally modified interaction (Duff, 1986). Long (1989) has suggested that closed tasks which require learners to reach a single solution or a limited range of solutions are more likely to promote meaning negotiation than open tasks. Open tasks do not have a predetermined solution. Finally, tasks have been classified as planned or unplanned with respect to the planning opportunity given to learners prior to their actual performance. The amount of planning appears to be positively correlated with syntactic complexity (Crookes, 1989; Ortega, 1999).

The interaction-based perspective that is based on the premise that language is best learned and taught through interaction (Long, 1985; Pica, 1987) favors certain types of tasks more than others with regard to their potential to generate acquisitionally important talk. Pica et al. (1993) have argued that jigsaw tasks “can be considered the type of task most likely to generate opportunities to work toward comprehension, feedback, and interlanguage modification processes related to successful SLA” (p. 21). Jigsaws, also known as two-way informational gap tasks, require the task-takers to hold, request and supply information that is necessary to complete the task. The task-
takers possess separate pieces of a puzzle, and only by combining these pieces can they complete the task. They are expected to accomplish a convergent goal, where no alternative options are available.

More recently, researchers have come to be interested in tasks that will help learners focus their attention on language forms by momentarily suspending their attention to meaning (Ellis, 2003). The need for these tasks has arisen from findings of classroom research in French immersion (Swain, 1985, 1991) and content-based programs (Pica, 2005). The findings have suggested that even after years of meaning focused English education, students could not reach full grammatical competence. One of the tasks that have been claimed to direct learners’ attention to linguistic forms in a meaningful task environment is the dictogloss (Wajnryb, 1990). In dictogloss tasks, a short text is read to the learners at normal speed and they are allowed to jot down notes as they listen. In small groups, learners work together to reconstruct their version of the original text (Wajnryb, 1990). Dictogloss tasks have been found to be useful in leading learners to pay attention to form while they engage in constructing the meaning of a text (Swain & Lapkin, 2001).

Swain and Lapkin (2001) predict that the jigsaw and the dictogloss were contrasting in that whereas the jigsaw leads learners on meaning negotiation only, the dictogloss leads learners to reflect on their own production within a meaningful activity. In the jigsaw, an information gap is created by the task design whereas, in the dictogloss, task design does not necessarily create an information gap between learners. Learners performing this task can well coincide in the pieces of information they obtained through the listening stage. Gaps, if any, are created by the degree the task-takers hear the text differentially.

Interaction and the Output Hypothesis

There is an agreement on the claim that conversational interaction plays an important role in SLA (e.g., Gass, 1997; Long, 1996; Pica, 1994). Long's (1983) Interaction Hypothesis (IH) is one of the major theoretical motivations for the research agenda that investigates the benefits of interaction. In the early version of the IH, the contribution of interaction on the input comprehensibility is emphasized. Krashen (1981, 1985) has argued that learners make progress, as they understand input that is a
little bit beyond their reach. Input, according to Krashen, is made comprehensible by simplification and providing extralinguistic clues. With regard to his ideas about how input is made comprehensible Long differs from Krashen. Long (1983), in the IH, emphasizes the benefits of interactional moves. A number of researchers have challenged the IH arguing that comprehension of input may not necessarily require attending to linguistic form and that, therefore, it may not aid language development. For instance, Kasper (1986) has argued that learners can understand input relying on contextual and background knowledge and never attend to form. Long (1996) has addressed this criticism in the updated version of the IH by the incorporation of negative evidence. In this updated version, interaction is said to provide negative evidence to learners, which shows what is acceptable and what is not within the target language norms.

Similar to Kasper (1986) and Long (1991, 1996), Swain (1985) observes that comprehensible input is insufficient to draw learners' attention to problematic linguistic forms. Her output hypothesis posits that the act of producing language has at least a partial role in second language learning (Swain, 1985, 1995, 2005). When Swain first argued a role for output, the field of SLA had largely shared the idea that comprehensible input was the only necessary and sufficient condition for second language acquisition (Krashen, 1982, 1985). Swain, similar to Long (1991) and Long and Robinson (1998), dismisses purely communicative modes of instruction based on the evidence obtained from French immersion programs, where learners received abundance of comprehensible input. Program evaluations of French immersion programs (Swain & Lapkin, 1982, 1986) revealed that although French immersion students obtained lower scores than native speakers of French in tests measuring productive skills (i.e., speaking and writing) they scored almost as high as native speakers in tests measuring receptive skills (i.e., listening and reading). Swain’s explanation of this inconsistency between the dominant theory and the practice was that comprehensible input was not enough to obtain high levels of accuracy and learners should be pushed to deliver their messages in such way that will precisely comply with target language rules.
Thus, Swain (1985) introduced the concept of “pushed output” or comprehensible output. According to Swain (1985), learners are pushed in their production so that they could make themselves more understandable. It is assumed that when learners are pushed in their production, they cannot avoid paying attention to language form as they would do in comprehension. In other words, when learners are pushed in their production they process language syntactically whereas when trying to comprehend input, semantic processing is enough (Swain, 1995). Swain (1995, 2005) mentions three functions of output

(1) The noticing or triggering function,
(2) The hypothesis testing function,
(3) The metalinguistic function.

The noticing/triggering function of output is based on Schmidt’s (1990, 1993) noticing hypothesis that states “a second language learner will begin to acquire the target-like form if and only if it is present in comprehended input and “noticed” in the normal sense of the word, that is consciously” (Schmidt & Frota, 1986, p. 311). Noticing can also occur in the form of “noticing the gap” (Schmidt & Frota, 1986). According to noticing the gap principle, learners may notice some inconsistencies between what they have observed in the input and what they themselves typically produce on the basis of their interlanguage. Swain (2005) has argued that the activity of producing the target language could lead learners to notice certain problems about their L2 knowledge or that they are unable to say what they want to say. Swain called this “noticing the hole” and argued for a possible link between this initial step and the noticing the gap step. In other words, learners, as a function of their noticing of their linguistic problems, would be more likely to notice the inconsistencies between their production and what is available in the input.

The second function of output is the hypothesis-testing function. Corder (1981) claims that learners generate hypothesis about the structural properties of the target language. Thanks to the input data they are exposed to, they create a hypothetical grammar and depending on whether their production is accepted or not by the interlocutor, this hypothesis is confirmed or disconfirmed. This perspective assumes that the learner formulate hypotheses about the target language and test these
hypotheses against the target norms. Thus, output can serve as an arena for learners where they expose their best guesses about how the target language works (Swain, 2005).

The last function of output is the metalinguistic function. Swain (1995) explains that when she talks about learners’ hypothesis what she means is that learners’ output is their hypothesis. In certain occasions, learners, instead of inserting their hypothesis, go one step further and reflect on their own output. They talk about the meaning of certain linguistic items, they focus on the appropriateness of certain forms or they correct each other. This level represents the metalinguistic function of output (Swain, 1997). This function of output resonates well with the tenets of sociocultural theory of mind. The theoretical perspective, which is often referred to as sociocultural theory (SCT) is based on the work of Vygostky (1978, 1986) and others (e.g., Bakhtin 1981, 1989; Leont’ev, 1981; Luria, 1979; Volosinov, 1973; Wertsch, 1985, 1991). This theory, which explains human psychological development in general, has also attracted a considerable amount of interest in L2 research (Appel & Lantolf, 1994; Donato, 1994; Lantolf (2000); Platt & Brooks, 1994; Thorne, 2005). In sociocultural theory, language does not only help sending and receiving messages, but also serves as a “thinking tool”. It is a tool that assists humans to overcome difficult tasks in the real world (Brooks, Donato & McGlone, 1997). According to sociocultural theory, learning has social origins. In other words, all "psychological processes emerge first in collective behavior, in co-operation with other people, and only subsequently become internalized as the individual’s own possessions” (Stetsenko & Arievtich, 1997, p. 161).

**Collaborative Dialogue**

All the above-mentioned functions of output can be observed in learners’ collaborative dialogue where learners reflect consciously on their own language use. Namely, thorough collaborative dialogue learners notice the hole in their knowledge and notice the gap between their output and target-like input, they test their hypothesis and their verbalized reflection can heighten their metalinguistic awareness. Swain in various publications (1995, 1997, 2000, 2005) has explained the features of collaborative dialogue. In 2000, she defines collaborative dialogue as follows:
It is knowledge-building dialogue. In the case of our interests in second language learning, it is dialogue that constructs linguistics knowledge. It is what allows performance outstrip competence. It is where language use and language learning can co-occur. It is language use mediating language learning. It is cognitive activity and it is social activity (p. 97).

Swain (2000) argues that it is readily accepted that language mediates learning in areas such as, mathematics, science and history. The concept of collaborative dialogue is an attempt to apply the same principle to language learning. In the above-mentioned areas, learners construct subject-matter knowledge, and likewise, in language learning learners construct linguistic knowledge. They attempt to solve linguistic problems through joint effort and, as a result of this collaborative performance, the individual learners move beyond their current cognitive and linguistic state. This joint effort that can be observed from their dialogue is language learning in process. According to this view, language learning and use co-occur; they do not follow each other in the developmental path (Swain, 1997).

Specific instances of collaborative dialogue are called Language-Related Episodes (Swain, 2001). LREs cover many different discourse moves that are also analyzed separately in the SLA research such as recasts, requests for help, implicit and explicit feedback, negotiation for meaning (Williams, 1999). What makes them fall under this broader category of LREs is that learners' language use gives evidence of that, at least one learner is attending the language form. Instances of interaction are coded as LREs when learners "(a) question the meaning of a linguistic items; (b) question the correctness of the spelling/pronunciation of a word; (c) question the correctness of a grammatical form; or (d) implicitly or explicitly correct their own or another’s usage of a word, form or structure” (Leeser, 2004, p. 56).

**F2F Research on Collaborative Dialogue**

This section aims to draw the reader’s attention onto some commonalities in the findings of the research on collaborative dialogue with regard to the frequency, focus and outcome and other categorizations of collaborative dialogue. In addition, the section reviews the findings of the studies that have investigated the relationship between tasks and collaborative dialogue.
Describing the Nature of Collaborative Dialogue

Kowal and Swain (1994, 1997) in two qualitative studies investigated issues related to collaborative dialogue. Their 1994 paper was based on the collaborative interaction of 19 mixed-ability students in a French immersion class. The students carried out four dictogloss tasks. The analysis including only the third task revealed that the students focused on critical language episodes 224 times, and these emphases on language resulted in refining and consolidating existing knowledge and creating forms that were new to the learners. Forty two percent of the total LREs were grammatical, 31% were meaning-based and 28% were orthographic. Verb related LREs were the most frequent ones across all the grammatical LREs. In their 1997 paper, within the format of a case study, they discussed about the differences between a dictogloss and a cloze activity in terms of their potential to make students focus on form (this study will be discussed in detail later). One finding reported by both of these papers was that heterogeneous grouping was not a favorable feature for collaborative dialogue because the abler students tended to be dominant in the groups which caused the weaker students to be uncomfortable with asserting their opinions and to leave most of the work to the abler students.

Swain and Lapkin (1998) studied the collaborative dialogues of eight students who were in a French immersion program. They put the following research plan into practice. In the first week, they administered a pre-test based on a set of language items that were inspired by their pilot study. In the second week, the students carried out a practice task. In the third week, the students watched a model task, and the teacher gave a mini-lesson on reflexive verbs. The students carried out the actual task in this week. The task was a jigsaw task based on a series of pictures. In the fourth week, the researchers developed post-test items, and in the fifth week, they administered both oral and written post-tests. In this study, LREs were categorized as lexis and form-based. The analysis revealed that the average number LRE was 8.8, and the average time spent to complete the task was 10.2. Also, the average number of form-based LREs was 4.8, whereas the average number of lexis-based LREs was 4.0.

Williams (1999, 2001) examined the production of eight learners at four levels of proficiency on naturally occurring classroom activities. In her 1999 paper, Williams
found that most of the LREs in her data were focused on vocabulary (80%) rather than grammar (20%). In the advanced group, definitions (62%), pronunciation (26%), word form (8%), and preposition choice (4%) were the foci of the lexically-based LREs. In addition, among the grammatically-based LREs, tense choice issues were the most frequently attended grammatical category. Williams observed that the learners in other proficiency levels focused on similar areas as well.

Storch in a series of publications (1998, 2001, 2002) studied different aspects of collaborative dialogue. In the 1998 paper, she compared four different tasks that reflected a continuum of structuredness: multiple choice, cloze, text reconstruction, short composition. Regardless of task types, the turns taken to talk about language-related issues took 66% of the total turns. Storch (2001) investigated the potential of task reconstruction, editing, and short descriptive composition tasks to promote attention to form through collaborative dialogue. In this study, LREs were categorized as form-based, lexis-based and mechanics-based. Overall, the students generated more form-based LREs than lexis-based LREs and mechanics-based based LREs. The mechanics-based based LREs, which included negotiation over spelling, punctuation and pronunciation, were the least frequent LRE type. Seventy percent of the total LREs were resolved correctly. Storch observed that verb tense and article choice related LREs were the most frequently attended grammatical categories.

In the 2002 paper, Storch examined the nature of dyadic interaction in an adult English-as-a-Second-Language (ESL) classroom. This longitudinal study focused on the interactions of ten dyads over a semester. Three different largely grammar-based tasks were used to collect data: a short composition, an editing task and a text reconstruction text. The students completed three isomorphic versions of each task with one-week intervals. Storch analyzed only the tasks that were completed in the second week of the study. Storch identified four distinct patterns of interaction from the interaction data to which she approached with no predetermined categories: collaborative, dominant/dominant, dominant/passive and expert/novice. The collaborative pattern, where learners willing to engage each other’s ideas, stood out among others in terms of the number of instances suggesting evidence for transfer of
knowledge. The expert/novice pattern was also fruitful and came after collaborative pattern in terms of instances of transfer of knowledge.

Lapkin, Swain and Smith (2002) investigated the collaborative dialogues of eight learners from a seventh grade French immersion class. In this study, the researchers asked the instructor of the course to rate the students’ proficiency, and according to these ratings, they formed two average dyads, each composed of two average students, and two strong dyads, each composed of one strong and one average student. One strong dyad and one average dyad carried out a jigsaw while the other strong and the average dyad carried out a dictogloss. First, the students collaboratively wrote a text based on a jigsaw or a dictogloss tasks. A native speaker revised the student’s text preserving their meaning. Then, the students worked together on highlighting and underlining the differences between their first and the revised texts. This session was videotaped. Later, the students watched the videos and participated in stimulated recalls. Finally, the students were asked to return to their original texts and individually revise it. The stages were recorded and LREs that focused on French pronominal verbs were identified. The analysis of the number of turns spent for the LREs revealed that the LREs created by the weaker pairs were shorter than the LREs created by the strong pairs. In addition, one of the weak dyads could produce only one LRE related to pronominal verbs. This finding brought evidence for the effect of proficiency on the nature of LREs.

Leeser (2004) investigated the impact of L2 Spanish learners’ proficiency on the number, type and outcome of LREs. Forty-two Spanish learners from a university-level content-based course completed a dictogloss task. Leeser utilized the course instructor’s rating of learners’ overall ability. Based on these rating, three types of dyads were created: High-High, High-Low, Low-Low. LREs were identified and coded as lexical or grammatical. A further categorization for the identified LREs was made with respect to their outcome (solved correctly, unresolved or abandoned ones, resolved correctly). Leeser found that adult Spanish learners in a foreign language context also focused on form through LREs. Of the total LREs, 60.14 % had a grammatical focus. The learners could solve 76.81 % of the linguistic problems correctly. The H-H dyads focused more on grammatical items, whereas the L-L dyads focused more on lexical items. The H-H
dyads solved more problems correctly than the other dyads and they did not leave any problems unresolved. Therefore, Leeser concluded that higher proficiency learners benefited more from being paired with each other in relation to the opportunities to focus on form.

Malmqvist (2005) investigated how 12 beginning level L3 German students paid attention to form while engaging in three dictogloss tasks. The learners carried out the first and the third tasks individually and the second task in groups of three. Different from the other studies, Malmqvist also coded content LREs. These were the episodes in which the learners tried to remember the parts of the original text. The results revealed that the learners produced three types of LREs: content, lexical and grammatical. The LRE type with the highest percentage, 42 %, was the grammatical LREs. The study also showed that the learners also resorted to their L1 to talk about language-related issues. Also, except for the one in which a low-proficiency learner dominated the floor, the other three groups solved 66 % of the LREs correctly. The groups produced 82 LREs on average.

**Language Development and Collaborative Dialogue**

As mentioned above, collaborative dialogue has been seen as a ground where language use and language learning can co-occur (Swain, 1997). Several studies have brought evidence supporting this hypothesis. Donato (1994), LaPierre (cited in Swain, 2001), Loewen (2005), Swain and Lapkin (1998, 2001) and Williams (2001) have shown that learners are able to transfer the knowledge gained through solved linguistic problems –correctly or incorrectly- to other similar situations. These studies have demonstrated that learners’ collective behavior can facilitate the development of individual mental resources.

Donato (1994) observed three third semester French students working on an open-ended task. The study sought to answer whether or not peers influence on each other’s interlanguage system in observable ways. Donato recorded three learners’ interaction during one-hour planning session before an oral presentation. He identified 32 instances of scaffolded help in this recorded planning session. He observed that the linguistic focus of the 24-scaffolded help instances, were transferred to the students’ independent
performance. In other words, the students were able to benefit from these instances and use the linguistic focus of them in novel situations.

The data in Swain and Lapkin (1998) showed evidence for a similar type of transfer. One of the students, with the possible effect of a LRE, chose the correct response for the French word alarm clock on the post-test. The researchers, based on the student’s answer to a pre-test item, claimed that this student did not know this word earlier. In a pre-test and dyad-specific post design, Swain and Lapkin (2001) investigated whether or not LREs can be source of language development. Their study was carried out with two 8th grade mixed ability French immersion classes. The comparison between the pre-test and post-test scores did not show any gain for neither of the classes. However, Swain and Lapkin could report on many instances where the learners chose the correct post-test item that was created out of their LREs. This indicated that the learners were able to retain the knowledge they created in their dialogues for short-term future use.

Williams (2001) examined the lexical and grammatical LREs of 4 pairs of English learners from 4 different proficiency levels. The students were observed in their classroom environment and tailor-made tests were created for the observed LREs. The results showed that the LREs were linked to accurate performance on the post-test. The learners gave the correct answer for the test items that were discussed in the LREs 40-94 % of the time. This variability in the percentage seemed to stem from the proficiency differences. The higher the learners’ proficiency, the higher the percentage was.

Loewen (2005) observed 12 English as a Second Language (ESL) classes on a variety of meaning focused activities. The study focused on teacher-learner interaction instead of learner-learner interaction. Loewen identified Form-Focused Episodes (FFE), which was a similar unit of analysis to LREs. An FFE was defined as “consisting of the discourse from the point where the attention to linguistic form starts to the point where it ends, due to a change in topic back to message or sometimes another focus on form” (Loewen, 2005, p. 359). Loewen administered one immediate, one day after, and one delayed post-test, two weeks after, for the items that were the focus of the FFEs. On the immediate post-test 47.6 % responses were correct. On the
post-test, the percentage decreased to 39.3. These findings speak for the claim that collaborative dialogue in which collective solutions to linguistic problems are created can be an important cornerstone on the way to learners’ linguistic development.

**Task Effects and Collaborative Dialogue**

As reviewed earlier, Kowal and Swain (1997) compared a dictogloss task and a cloze activity that were carried out by a class of French immersion students. The study did not report how these two activities were different from each other with regard to the number of LREs. The study did report that these two tasks required different forms of participation from the students. In the dictogloss, the students had more freedom in identifying the language-related items to be discussed. In the cloze, the teacher was the source that determined the items to be discussed. In addition, the dictogloss was a more contextualized activity and “the relationship between meaning, form and function was closely intertwined” (Kowal & Swain, p. 305).

Storch (1998) compared four different tasks that reflected a continuum of structuredness: multiple choice, cloze, text reconstruction, short composition. Nine students, in the form of three dyads and one triad completed all four tasks. The study was carried out in two sessions; the students completed the text reconstruction task in the first session, and the multiple-choice, cloze and short composition in the second session. In general, the time taken to complete the task differed greatly across the task types. The percentage of LREs to the total turns was as follows: multiple choice 81 %, cloze 71 %, text reconstruction 85 %, short composition 28 %. The more structured the task, the higher the percentage of the LRE-turns to the total number of turns was. Furthermore, 100 % of the total LREs in the multiple choice, 54 % in the cloze, 93 % in the text reconstruction and 53 % in the composition had grammatical focus. The difference in the time taken to complete each task makes it difficult to interpret these results. For example, whereas the students took 3.5 minutes to complete the multiple-choice task, they took 20-30 minutes to complete the composition task. In the composition tasks, the students tried to get the content right, and they created less metatalk.

In her 2001 paper, Storch compared a short descriptive composition, an editing task and a text reconstruction task based on the analysis of 10 pair of students’
interaction on these tasks. The analysis of LREs revealed that the text reconstruction task generated the highest number of total LREs and also the highest number of form-based LREs. The composition and the editing task tended to generate more lexis-based LREs than the text reconstruction task.

Garcia-Mayo (2002) compared the amount of attention to form dictogloss and text reconstruction tasks generated. The study was carried out with 14 English-as-a-Foreign-Language (EFL) students in Spain who were third year English Philology students. The participants completed both tasks. No significant differences were found between the tasks with respect to the time and the number of turns taken. 14 % of the total turns consisted of LREs in the dictogloss, whereas 44 % of the total turns contained LREs in the text reconstruction. This difference was statistically significant. However, one should interpret the results of this study carefully. The tasks used in this study derive from written texts. In order to understand the effects of task type one should control for the contents of these texts. In this study, each task was based on a different text, and thus, the content was not controlled.

Of special interest to this study is Swain and Lapkin’s (2001) work. In this study, the researchers asked the students to carry out two different tasks, which they claim to be contrasting: the jigsaw and the dictogloss. They hypothesized that the students who would carry out the dictogloss would focus more on form than the students who would carry out the jigsaw. Sixty-five students from two intact classes participated in this study. Data were collected over a five-week period. In the first week, the researchers administered a pre-test that consisted of questions created through the pilot study. In the second week, the students participated in a training session. In the third week, the students attended to a mini-lesson on French pronominal verbs and watched a short video that modeled what they needed to do during the tasks. In the same week, they completed the actual tasks. The researchers identified the LREs in the fourth week. Based on these episodes, they created ‘tailor-made’ dyad specific items to be asked in the fifth week in a post-test. The study showed fewer differences than predicted. The number of LREs produced in each task was not significantly different. The researchers discussed two reasons that might be responsible for this result. They argued that the mini lessons given prior to the tasks and the fact that both
tasks required a written text might have sensitized the learners about language-related issues, and this in turn might have led them to question their linguistic resources. Swain and Lapkin (2001) reported some differences between these two tasks as well. For example, the dictogloss had a more constraining effect on the range of time on task, the range of the total LREs, and the range of the vocabulary items the students used in their written narratives. The researchers also reported that the dictogloss showed a greater number of correct pronominal verbs than the jigsaw. The findings of Lapkin, Swain and Smith (2002) corroborated the findings of Swain and Lapkin (2001). Similarly, their results reveled that the jigsaw and the dictogloss were not different from each other in relation to the number of LREs. The dictogloss has the same constraining effects as it was shown in Swain and Lapkin (2001).

Table 1

*Findings on Collaborative Dialogue in F2F Communication*

<table>
<thead>
<tr>
<th>Studies</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kowal &amp; Swain, 1994; Malmqvist, 2005; Storch, 1998, 2001; Swain &amp; Lapkin, 1998</td>
<td>Form or grammatical LREs are the highest number of LREs, which are followed by lexical LREs.</td>
</tr>
<tr>
<td>Kowal &amp; Swain, 1994; Storch, 1998; Williams, 1999</td>
<td>The most frequently attended grammatical form is verb tense.</td>
</tr>
<tr>
<td>Leeser, 2004; Malmqvist, 2005; Storch, 2001</td>
<td>Between 60 and 75 % of the total LREs are solved correctly.</td>
</tr>
<tr>
<td>Kowal &amp; Swain, 1994; 1997; Lapkin et al., 2002; Leeser, 2004; Storch, 2002; Williams, 1999</td>
<td>Grouping and participant related factors are at work, such as proficiency, and they affect the nature of LREs.</td>
</tr>
<tr>
<td>Donato, 1994; Loewen, 2005; Swain &amp; Lapkin, 1998; 2000; Williams 2001</td>
<td>The solutions generated to linguistic problems are transferred to subsequent learner performance.</td>
</tr>
<tr>
<td>Garcia-Mayo, 2002; Storch, 1998</td>
<td>The number of LREs decreases as the focus of task is more on meaning.</td>
</tr>
</tbody>
</table>
Table 1 presents the general findings on collaborative dialogue. The studies that focused on collaborative dialogue showed some similar findings with regard to the frequency of certain types of LREs. Overall, learners tended to deal with form and grammar related issues as their primary focus. However, studies such as Williams (1999) drew attention to the fact the nature of LREs can be context-dependant. When teacher-learner interaction, instead of learner-learner interaction is the context for LREs, it has been observed that learners are more concerned with vocabulary.

In addition, the studies converged on the finding that when learners engage in a discussion or a problem about grammar, verb related issues, especially verb tense, is the most common focus (Kowal & Swain, 1994; Storch 2001; Williams 1999). Other than verb related issues, learners also have difficulty with definite and indefinite articles (Storch, 2001). Research until now has used different labels to categorize LREs with respect to their type. Content, lexical, meaning, grammatical, discourse, mechanics-based, form-based, and orthographic LREs are some of the terms the researchers have opted to use. Meaning-based and form-based LREs seem to be the core categories; the rest depends on the choice of the researcher and whether or not these categories are present in their data.

Research has shown that factors related to grouping and participants have an effect on the nature LREs. Many studies (Kowal & Swain, 1994, 1997; Lapkin, Swain & Smith, 2002; Leeser, 2004; Williams, 1999) have pointed out that high proficiency learners tended to create more situations to deal with language itself. Not only the number of LREs, but also the quality and the outcome of the episodes are affected by proficiency. Learners engage in longer collaborative dialogues when both learners are of high proficiency (Lapkin, Swain & Smith, 2002), and their chances to solve linguistic problems correctly are the highest (Leeser, 2004).

In addition, regardless of proficiency, learners can solve linguistic problems 60-75% of the time. This means that learners have potential to support each other in their developmental path. One can argue that the more they solve the problems correctly the better for their future development because many studies has showed that learners retain the solution of the problems they generate collaboratively (Donato, 1994; Loewen, 2005; Swain & Lapkin, 1998, 2000; Williams 2001).
Table 2 below presents the task types used in collaborative dialogue research and describes them. As for the task effects, we know that the more structured the task and the more explicitly it draws learners’ attention to forms, the more it creates language-related talk (Storch, 1998; Garcia-Mayo, 2002). Tasks, such as text reconstruction, editing, multiple choice, generated more attention to form than tasks like dictogloss and composition. However, these tasks seem to be closer to grammar exercises than communicative tasks that have been defined by Nunan (2004) and Bygate et al. (2001). The dictogloss tasks procedure has been found to be more beneficial in this respect because it is not a task that only helps learners pay attention to form, but while doing this, it gives them a meaningful context (Swain & Lapkin, 2001).

### Table 2

**Task Types in Collaborative Dialogue Research**

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloze</td>
<td>Learners use clues from the context to fill in the blanks of a text.</td>
</tr>
<tr>
<td>Dictogloss task</td>
<td>Learners reconstruct a short text after listening to it twice.</td>
</tr>
<tr>
<td>Editing</td>
<td>Learners are presented with a text containing a number of errors and work together to correct them.</td>
</tr>
<tr>
<td>Jigsaw</td>
<td>Learners are given two separate pieces of information and combine them in order to achieve the activity goal.</td>
</tr>
<tr>
<td>Multiple-choice</td>
<td>Learners collaborate to choose appropriate response to multiple-choice test items.</td>
</tr>
<tr>
<td>Text reconstruction</td>
<td>Learners are presented with content words and instructed to insert appropriate function words in order to reconstruct a grammatically accurate text.</td>
</tr>
<tr>
<td>Short composition</td>
<td>Learners work together to write a composition on a topic.</td>
</tr>
</tbody>
</table>

Studies comparing the dictogloss, jigsaw and cloze (e.g., Kowal & Swain, 1997; Lapkin, Swain & Smith, 2002; Swain & Lapkin, 2001) have revealed that the dictogloss restricted learners’ attention on certain language items more than the jigsaw and that it pushes learners to use these items more accurately (Swain & Lapkin, 2001). In addition, two studies (i.e., Lapkin, Swain & Smith, 2002; Swain & Lapkin, 2001)
have shown that the jigsaw and the dictogloss are not different from each other in terms of the number of LREs. Swain (2005) has concluded that “tasks that encourage students to write something together tend to elicit collaborative dialogue as the students discuss how best to represent their intended meaning” (p. 478). However, research until now has not presented sufficient evidence to claim that writing is the major factor that makes learners engage in collaborative dialogue. Findings contradicting with this claim are present. For instance, Storch (1998) has shown that among the four types of tasks she used in her study, the multiple-choice, which did not have any writing component, created the second highest number of LREs. In addition, the studies that have investigated the task differences have been lacking an appropriate design to support this claim. We need designs that will separate writing portions of the tasks from the interaction portions in order to test Swain’s claim.

**Synchronous Computer-Mediated Communication**

Computer-mediated communication (CMC) refers to a form of human communication via computers. Berge and Collins (1995) state that what is described by this term is how people utilize networked computer systems to transfer, store, and retrieve information, with the emphasis always on communication. CMC is analyzed under two broad categories according to the degree of time delay between the messages of two interactants: asynchronous and synchronous. The synchronous mode occurs in real time, whereas the asynchronous mode does not. The asynchronous mode includes e-mails, threaded discussions and bulletin boards. The synchronous mode covers types of communication, such as 1) UNIX based TALK that is used for one-to-one conferencing, 2) MUDs (Multi-User Dimension) and MOOs (MUD Object-Oriented) that refer to virtual text-based environments and 3) Chat systems such Internet Relay Chat (IRC) or instant-messaging (Werry, 1996).

The last 20 years have been a period in which CMC has become a major means of communication. Both asynchronous and synchronous modes have occupied various domains of our daily lives, from leisure time activities to serious business communications. With this spread, researchers in the field of Second Language Acquisition (SLA) were urged to investigate the potential advantages of using CMC for promoting L2 learning. This study focuses on the synchronous mode, or Synchronous
Computer-Mediated Communication (SCMC), that refers to simultaneous interactions between two or more people through the use of computers.

The use of networked computers for synchronous communication in a language instruction setting originated at Gallaudet University in 1980s for the purpose of teaching writing and promoting communication in English among deaf students (Beauvois, 1992). Then, the InterChange application was developed and refined by the English Department of the University of Texas at Austin, through which synchronous discussions of large numbers of students were made possible via local area networks. In the 90s, ESL, Portuguese, German, French and English literature courses at the University of Texas used InterChange (Beauvois, 1992; Kern 1995).

L2 studies that have aimed to examine SCMC can be loosely grouped under two research lines. One line of research, with a descriptive focus, has tended to pin down the discourse features that are unique to SCMC and similar to other modes of communication. Another line of research has tried to evaluate this medium with respect to opportunities for L2 development. In this line, negotiation of meaning has received much of the interest. The following sections will review the studies in these two research lines. Then, the focus will be narrowed down and two topics that are central to this study will be discussed: attention to form and tasks.

**Discourse Features of SCMC**

Seeing potential in it for language learning, research has set out to investigate the unknown aspects of synchronous communication. The first question that was raised in the early 90’s was whether SCMC made a difference in the quantity of learners’ talk. Beauvois (1992) reported on the case of Alex, who was an unsuccessful learner of French at the time of the study. She made a strong case for the motivational effect of SCMC based discussions. She explained that due to this motivational effect Alex’s talk increased up to 21 messages in 45 minutes. Beauvois’s study was enough to light a bulb about the possible greater quantity of talk in SCMC, however, her account was insufficient in that she did not set out with data regarding Alex’s earlier performance. The field needed more evidence whether SCMC really fostered more talk in comparison to Face-to-Face (F2F) communication. This evidence came with other studies.
Kern (1995) set out to explore the differences between SCMC based discourse and F2F discourse. His study included 40 participants from two sections of French II course. Each section engaged both in F2F regular classroom discussions and discussions held via Daedalus InterChange software. The results of the study showed that the students in Section 1 took 165 turns, and the students in Section 2 took 200 in the electronic discussions. By contrast, in the classroom discussions, they took 98 turns in Section 1, and 53 turns in Section 2. The average number of sentences written in the electronic discussions was 21.3 in Section 1 and 25 in Section 2, whereas in the oral discussions these numbers decreased to 9.8 and 6. These results indicated a big difference in the quantity of language produced in electronic and F2F discussions in favor of electronic communication (SCMC). Similarly, Beauvois (1998) observed two sections of an intermediate French course for six weeks that were held both electronically and in a F2F format. Although she did not report any direct numerical comparison between the students’ production in the F2F discussions and in the SCMC discussions, she explained that the SCMC discussions generated more talk than the F2F discussions.

It seems that two things are responsible for the greater student production in SCMC when compared to F2F conversations. First, the teacher tends to withdraw her dominant role in this mode of communication. Indeed, there is evidence from research showing that the teacher’s role may be, at least partly, responsible for the greater amount of student talk. Beauvois (1998) reported that in one of the lab sessions, the students produced 115 messages, whereas the teacher took 35 turns in total and only 9 of them were addressed to the whole class. By contrast, in a regular classroom discussion, the teacher asked 48 questions just in the beginning of the class period. Besides, only the students who volunteered could take turns to answer them. Kern (1995) portrayed an even much clearer picture of the phenomenon when he reported that the total number of student turns in one SCMC session amounted to 165, whereas the instructor took no turns in the same session.

A second reason that may help us explain the greater participation in SCMC is the motivational nature of this medium. For example, Beauvois (1992) reported that Alex expressed having enjoyed the electronic session more than any other French class
in his life. Beauvois (1998) claimed that this medium gave way to more honest and personal comments because of its more motivational nature. In a similar vein, Warschauer (1996) reported on the results of the questionnaire component of his study stating that his participants were very much in favor of the electronic discussions.

SCMC does not only promote increased participation talk, but this participation is also equally distributed among interactants. Research has showed that not only the talkative and outgoing learners but all learners benefit from this increased amount of talk. Warschauer (1996) compared the discourse features of F2F and electronic discussions in an experimental design. Sixteen learners were divided into four groups. The study revealed that the discussions in the electronic environment promoted equality more than the discussion in the F2F condition. Sullivan and Pratt’s (1996) study supported this finding. They reported that the participation rate was 100 % in the electronic discussions, whereas it was only 50 % in the F2F discussions. Warschauer (1997) speculated on the reasons for more equal interaction among participants in electronic discussions. He put forward three reasons.

CMC (a) reduces context clues related to race, gender, handicap, accent and status […] ; (b) reduces nonverbal cues, such as frowning and hesitating, which can intimidate people, especially those with less power and authority […] ; and (c) allows individual to contribute at their own time and pace (p. 473).

The discourse in SCMC based activities has also been investigated with respect to quality. Chun (1994), Kern (1995), Sotillo (2000) and Warschauer (1996) used various measures to assess the quality of the discourse in SCMC based activities. Chun’s study showed that the students used a wide variety of discourse functions when they talked through InterChange. Her study did not make any comparison with oral discussions. Chun explained that the students demonstrated increased morphosyntactic complexity over the course of one semester. Kern compared the F2F discourse to the discourse created through Daedalus InterChange and found that the discourse in the Interchange discussion “was of an overall greater level of sophistication than in the oral discussion, in terms of the range of its morphosyntactic features and in terms of the variety of discourse functions expressed” (Kern, 1995, p. 470).
Warschauer (1996) used the type-token ratio and the coordination index as measures to determine the lexical and syntactic complexity of the talk in electronic discourse as opposed to the talk in F2F discussions. The analysis for two levels of language complexity revealed that both syntactic and lexical aspects of language were more complex in the electronic discussions. Sotillo (2000) compared the asynchronous and synchronous discussions of two groups of university-level students from two intact ESL academic writing classes. The results showed that the discourse functions in the asynchronous discussions were more constrained than those found in the synchronous discussions. The synchronous discussions displayed a greater variety of discourse functions that went beyond traditional question-response-evaluation sequences. Sotillo commented that synchronous discussions had highly interactive nature and it promoted fluency more than accuracy, whereas the asynchronous discussions were syntactically more complex and close to being more accurate because of its delayed nature. Sotillo concluded that synchronous discussions were closer to oral communication.

Research has also shown that SCMC shared some features with oral and written communication. Apart from the above mentioned study by Sotillo (2000), which emphasized the similarity between SCMC and oral communication, Weininger and Shield (2003) and Kern (1995) agreed that SCMC was closer to oral communication than to written communication even though it was text-based. Weininger and Shield proposed using Koch and Oesterreicher’s model (cited in Weininger and Shield, 2003) that viewed different discourse types as reflecting a continuum rather than reflecting the speaking/writing dichotomy. The two ends of this continuum were labeled as language of proximity and language of distance, and they suggested that SCMC was closer to language of proximity. Kern made a connection between oral communication and SCMC by emphasizing the minimum focus on accuracy in both types of communication.

Beauvois (1992) succinctly expressed the relationship between oral and SCMC discourse with a metaphor: conversation in slow motion. This metaphor also reveals a relationship between SCMC and written communication. Apart from their similarity resulting from the fact that both involve typing, they are also similar in that both modes of communication allow people to take their time before they give the final shape to
their messages. Therefore, learners may seem like acting in slow motion in comparison to oral communication. Warschauer (1997) emphasized the hybrid nature of Computer-Mediated Communication in general stating that CMC carried the features of both interaction and reflection. Interaction had been attributed to oral communication and reflection had been attributed to written communication throughout the history. He claimed that CMC could be a cognitive amplifier that could welcome both interaction and reflection. Thus, learners participating in SCMC based activities could take the advantage of two things: interacting with other learners in a continuous flow of messages, and reflecting on what they write before giving the final shape to their messages.

Research has also added to our knowledge of SCMC discourse by exposing the unique features of SCMC. Most of the features research has brought to light are somehow connected to the physical conditions of a computer-mediated environment, such as the lack of non-verbal cues. Negretti (1999) recorded four hours of conversation from the interactions of Italian-speaking EFL learners with other visitors to Sperling’s Chat Central. The study showed the learners paid special attention to the openings and closings of the conversations. They greeted each other, individually or as a whole group, and when they left the conversation they said a definitive good-bye. In addition, web chats displayed some interesting paralinguistic devices. The participants used upper-case letters to indicate loudness of speech, and emoticons to substitute facial expressions and eye contact. In addition, onomatopoeia such as, “Oh!” “zzz”, was used to convey feelings and shades of meaning.

Chun’s (1994) study showed that her students tended to produce many more leave-taking expressions (82) than greetings (15), which were, according to Chun, the result of the fact that the computer sessions were always held at the end of a class period. Darhower (2000) also focused on how students established a community through their use of social formulas. The students in his study, except for a few weeks, always engaged in lengthy greeting rituals and small talk. Darhower expressed that the learners preferred long rather elaborate leave-takings instead of just saying adios. For Darhower, these small talks, greetings and leave-takings were the signs of their developing sociolinguistic competence. Kern (1995) reported that his participants in the
InterChange sessions, Section 1 and 2 combined, greeted each other 27 times, whereas neither Section 1 nor Section 2 in the F2F sessions greeted each other.

Darhower (2000) and Kern (1995) also mentioned off-topic or off-task discussions. In Darhower’s study off-task discussions were one of the most salient features of SCMC based discourse and they appeared in almost every episode. He operationalized off-task discussions as five consecutive utterances that were not related to the topic of the task. He reported three findings about the nature of the off-task discussions that occurred in his study. The students left the topic of discussion to talk about something else that was more interesting for them. Mostly, the same learners were the ones who engaged in those off-task discussions. This type of talk happened almost always when the instructor was not in the room. Kern reported that going off the topic was a more common phenomenon in the InterChange session than in the oral discussion. The students digressed from the assigned topic eight times in the electronic discussion, whereas only once in the F2F discussions.

Unique features of this medium were not limited with the above mentioned ones. Abrams (2003) approached to SCMC with a different focus. He explored the participant roles language learners adopted on two different writing environments: SCMC and pencil-and-paper group journals. Forty-six learners from four different sections of a German course participated in this study. The results showed that the roles of the speaker, scolder, respondent, commenter, informant, questioner, creator of in-group identity and knower were the participant roles that emerged in both types of environment. However, four participant roles appeared only in SCMC: the attacker, challenger, supporter and joker.

Darhower (2000) also mentioned that the use of humor was prevalent in his study. He added that teasing and the use of humor were two discourse functions that had potential to create strong positive and negative feelings among the interactants. Sarcastic comments and insults were no less widespread in his data. Just like Abrams’s (2003) attacker role that always made insulting comments, Darhower’s participants made insulting comments to each other as well. This was often referred to as flaming in the literature (Warshauer, 1997; Darhower, 2000). Flaming is a very common phenomenon and the frequency of this type of aggression is higher in SCMC than in
F2F communication because of the face saving effect SCMC offers (Warshauer, 1997). The users feel much comfortable with making derogatory comments to each other in the absence of any non-verbal cues.

Another study that may contribute to the above findings about the playful nature of the language used in SCMC is Warner (2004). The study involved participants from two university level German courses. Warner put forward three categories of language play: 1-play with the form, 2-play with the content/concept, 3-play with the frame. He found evidence of language play from each category and concluded that the definition of communication should be extended since the instances of language play were more frequent than the simple message exchanges.

The findings with respect to the discourse features of SCMC can be summarized as follows. 1- SCMC based discussions attracts more learner participation than F2F discussions. 2- The participation pattern in this mode of communication is more equal than in F2F communication: the learners who barely participate in F2F activities become active participants in SCMC based activities. Teachers are not the center of discussions in SCMC 3- Other than the quantity of talk, quality has also been investigated and some results are in favor of SCMC. Research has shown that the discourse in SCMC based discussions is more complex than the discourse in F2F discussions. 4- SCMC, in some respects, is close to oral communication and, in some others, close to written communication. It embraces both reflection and interaction. 5- Some discourse functions, such as greetings and leave takings, sarcasm and insults and jokes are more prominent in this type of communication than in F2F communication. 6- Learners use paralinguistic features such as punctuation marks and emoticons to make up for the lack of non-verbal cues.

The studies reviewed above have a descriptive focus. Quantity, quality and equality have been investigated to describe the discourse features, and the findings are invaluable to establish an initial understanding about SCMC. However, they do not inform the field about different language learning opportunities this medium suggests. We need more information regarding the relationship between the use of this medium and language learning. The following part reviews the studies that have investigated the
occurrence of certain type of learner talk that has been claimed to create a ground for language learning.

**Interaction and SCMC**

Research in SLA has focused on certain parts of interaction that are potentially beneficial for language learning. The interactionist paradigm that is based on the premise that language is best learned and taught through interaction gave special importance to the parts of interaction in which input is modified or meaning is negotiated (Long, 1985; Pica, 1987). Negotiation provides a ground for “modifications to the interactional structure of conversation that increase input comprehensibility” (Long & Robinson 1998, p. 22). Comprehensible input creates positive evidence that fosters L2 acquisition (Krashen, 1982). Long and Robinson (1998) state that negotiation work also provides negative feedback that help learners notice mismatches between input and output and, thus, direct their attention to form.

The studies on negotiation of meaning are of interest for this study for two reasons. First, since a good many of research effort have been spent to investigate the nature of this phenomenon, understanding the nature of this phenomenon will help us understand the discourse features of SCMC based interactions. Second, similar to the theoretical construct used in this study, collaborative dialogue, negotiation of meaning can describe how learners focus on language forms. However, it should be emphasized that these two constructs technically diverge from each other. Whereas negotiation of meaning requires a breakdown in communication, collaborative dialogue does not. Therefore, collaborative dialogue is able to capture learner-learner talk involving a discussion about a linguistic form regardless of whether or not this focus derives from a breakdown (Swain, 1997). Negotiation of meaning, as van Lier (2000) suggests, is based on the assumption that “learning occurs when something that is defective is replaced with something that is fixed or improved” (p. 248.). The following part will review the studies on negotiation of meaning for the reasons mentioned above.

**Negotiation of meaning.** Recent research has showed that negotiation of meaning is also common in SCMC data (Blake, 2000; Blake & Zyzik, 2003; de la Fuente, 2003; Kitade, 2000; Lee, 2002; Pellettieri, 2000; Smith, 2003a; Tudini, 2003). Pellettieri’s (2000) descriptive study in which 20 participants engaged in synchronous online tasks
through Ytalk revealed that there was potential for negotiation of meaning in
cyberspace. Pellettieri observed that the learners negotiate for meaning, and this
negotiation facilitated comprehension and pushed them to modify their output. The
most frequent feature that triggered negotiation work was the lexical ones. Similar
findings came from Blake (2000) and Blake and Zyzik (2003). Blake (2000) carried out
his study in two different times, the fall and spring semesters of 1998. In this study, he
asked 50 native speakers of English students to chat in Spanish to complete three
different tasks from Pica et al.’s (1993) typology (jigsaw, information-gap and
decision-making tasks). One finding regarding the nature of meaning negotiation was
that the lexical misunderstandings triggered the highest number of negotiation. Blake
and Zyzik’s (2003) findings corroborated with Blake (2000). 11 heritage-Spanish
speakers and 11 intermediate-level Spanish learners participated in this study. The
learners in pairs carried out an online jigsaw task, in which they have to hunt for an
apartment, via Remote Technical Assistance chat program. This study showed that
negotiation occurs also between heritage speakers and language learners.

Lee (2002) studied the concerns of the interactionist paradigm with 34 students
from two third-year Spanish courses. The students were given everyday discussion
topics and chatted for 50 minutes in groups of two and three. Lee specifically focused
on the types of modification devices her subjects employed. The results of her study
showed that the most frequent modification device were requests for help. They were
observed 63 times. The second most frequent modification device were clarification
requests and they were observed 59 times.

Tudini (2003) included native speakers in his study. Nine learners of Italian and
49 Native Speakers (NSs) of Italian participated in this study. The learners were asked
to chat with Italian NSs on a selected chat room in their own time. Tudini stated that
negotiation was a feature of SCMC, but only 9% of the total turns involved negotiation,
which was less than the previous learner only and NS-learner studies. In addition, this
study revealed that the lexical items constitute the main trigger for negotiation of
meaning.

De la Fuente (2003), in a pre-test post-test design, compared an oral interaction
group to a virtual chat group to understand the effect of the communication medium on
the development of vocabulary. Fourteen vocabulary items, which were not known by any of the learners, were seeded in the tasks. Each group completed two information gap tasks. Each task required the learners to negotiate the meaning of seven vocabulary items. The analysis of post-test results revealed that the oral interactions and the SCMC based interactions were equally effective in promoting the acquisition of lexical items. This study showed that negotiation that took place in the SCMC environment could help learners advance in their vocabulary development. In a similar vein, Garcia and Arbelaitz (2003) made a comparison between the negotiation of meaning that took place in a F2F and a SCMC environment. The researchers divided learners into three conditions: NS-Non-Native Speaker (NNS), NNS-NNS and NS-NS. The results revealed that F2F communication created more communication breakdowns. The researchers commented that the reason for this might be the difficulty in understanding the oral language.

Finally, Smith (2003a) investigated the nature of negotiated interaction in SCMC based tasks. Fourteen dyads from two sections of intermediate-level intensive English classes participated in this study. The participants went to a computer lab once a week and they completed two jigsaw and two decision-making tasks. The results showed that one third of the total turns were spent for negotiation. The tasks were infused with unknown vocabulary items, and, as a result, most negotiation targeted these lexical items. Smith’s (2003a) biggest contribution came with his finding about the different nature of SCMC negotiation routines. He argued that because turn adjacency was less strict in SCMC than in oral interactions the turns that involved negotiation could be far from each other.

In sum, learners were found to negotiate for meaning in SCMC, but the frequency of this type of talk was not as high as in F2F communication (Chappelle, 2004). Most of the negotiation in SCMC based tasks was triggered by lexical confusions. This finding confirms the criticism directed to negotiation of meaning by Foster and Ohta (2005). Foster and Ohta claimed that negotiation of meaning mostly captures lexical features and how learners build lexical knowledge, however, it leaves out morphosyntactic features. Furthermore, research has shown that medium-specific features affect the nature of negotiation of meaning. For example, Smith (2003a) has
revealed that because turn adjacency in SCMC is not as strict as in F2F communication, the turns that form the negotiation routine can be far from each other. Therefore, negotiation of meaning episodes with its assumed benefits for learning may be working differently in SCMC (Chappelle, 2004).

The following subsection reviews the literature that has shown other ways of focus on form that usually, although not necessarily, stay outside the scope of negotiation of meaning.

**Attention to Form in SCMC**

Based on the results of the early studies in the field, Kern (1995) and Sotillo (2000) argued that learner-learner talk that took place in SCMC lacked accuracy, and therefore, it was better to use this medium for fluency activities. While Lee (2002) made the point that, from a pedagogical point of view, it was not acceptable to allow learners to use non-target like language forms, findings started appear showing that learners using SCMC medium might not be accurate but did pay attention to form. For example, Payne (cited in Payne & Whitney, 2002) showed that SCMC could enhance monitoring on language use. In this study, 50 % of the participants that engaged in SCMC-based activities reported that they monitored their language production more often than they did in F2F activities. Moreover, two-thirds of the participants stated that they noticed others’ mistakes more often in SCMC.

Pellettieri (2000) observed that learners gave negative feedback to each other; and they incorporated target language forms into subsequent turns. Lee’s (2002) study showed that learners corrected their own errors whenever they noticed them. Lee also observed that the learners explicitly asked the meaning of certain words to each other, and sometimes they replaced the words they did not know with words from their L1. The learners also corrected each other’s linguistic errors. However, this behavior was not very frequent because, according to Lee, the learners were more interested in exchanging ideas and communicating effectively. Lee also illustrated an instance where a learner was searching for an appropriate grammatical form by explicitly talking about his need.

Kitade (2000) also reported that self-repairs and other initiated repairs were common in her set of data. Her data showed that the learners explicitly asked for help
from their partners about the meanings of words they do not know. For Kitade, the fact that there was not individual turn-taking competition in SCMC could increase the benefit of self-correction because learners could take their time to analyze their own language and this might lead to individual learning. Tudini’s (2003) findings supported both Kitade (2000) and Lee (2002). His findings also showed that SCMC based learner-learner interactions generated self-repairs. In addition, Tudini explained that whereas the errors made during NNS-NNS interaction were mostly addressed through self-repairs the errors made during NS-NNS interaction were addressed through different types of implicit and explicit negative feedback. De la Fuente’s (2003) comparison of F2F and SCMC conditions showed that the F2F environment was richer in negative feedback and self-repair opportunities than the SCMC environment.

Blake (2000) illustrated that his participants, on three occasions, discussed linguistic problems. At one time, they discussed how to pronounce a word, at another they talked about how to mark the gender of a verb, and at yet another one, they negotiated on the correct aspect of a verb. Blake labeled them as grammar negotiations. Blake and Zyzik (2003) were able to present some instances where misunderstandings due to grammatical features triggered negotiation work. The study also showed that negotiation of meaning on lexical items produced immediate observable results in the forms of learners’ subsequent use of the negotiated items, but negotiation that focused on syntax did not suggest an indication of a possible change in learners’ interlanguage.

Garcia and Arbealaiz (2003) studied the negotiation created by NSs and NNSs of Spanish. Fourteen NNS-NNS dyads, four NS-NNS dyads, and nine NS-NS dyads participated in the study. Each dyad completed one F2F and one task through the Chatnet software. In NNS-NNS interaction, the learners assisted each other in different language items. They engaged in a type of talk, which the researchers called lexical search, where one of the learners asked how to say a word in Spanish. Also, the learners completed each other’s utterances when one of them lacked the necessary words, in a way they co-constructed linguistic knowledge. The learners also self-corrected their errors in relation to verb morphology.

Thoms, Liao and Szustak (2005) examined the functions of L1 in SCMC based tasks. 38 learners of three different languages (Chinese, Spanish and German)
participated in this study. They carried out a jigsaw task that was adopted from Brooks (1992). Thoms et al. analyzed L1 use under three categories: moving the task along, focusing attention, interpersonal interaction. The category “focusing attention” was reflecting the authors’ attempt to account for how learners focus their attention on linguistic items. The category had two subcategories: vocabulary search and focus on form. Authors could only illustrate the first category because their participants did not engage in any form related talk in their L1. The vocabulary search category covered instances where learners resorted to their L1 to ask how to say certain words in their L2.

Morris (2005) investigated corrective feedback in a Spanish immersion course in the US. Forty-six fifth grade children from three separate computer lab classes completed a jigsaw. Fifteen pictures were split between two students, and they were asked to work together and write a collaborative essay. The results revealed that the students paid more attention to give feedback to each other on lexical features of language. 43 of 44 lexical errors were addressed with a type of feedback. The syntactic features did not attract much feedback. Only 29 of a total of 87 syntactic errors were given feedback. The feedback type that did not present the correct language form (i.e., negotiation of form) was more frequent than the types of feedback that provided the correct form (e.g., recasts).

Table 3 summarizes the findings in relation to how learners engage in form-focused talk in SCMC. To sum up, learners who participate in SCMC based activities correct their own as well as their partners’ errors, discuss the meanings of the words and engage in conversations about their immediate language use. It is also clear that although learners pay attention to their language use, they make many mistakes, most of which are not corrected. Most of the feedback is given to lexical items, but some morphosyntactic and grammatical items also attract feedback and trigger language-related discussions.
One common point of the studies reviewed in this section is that they have almost exclusively focused on the notion of negotiation of meaning. As discussed in the previous section, this notion is based on the idea of interactional modifications that are triggered by communication breakdowns (Long & Robinson, 1998). Research has presented instances where learners provide assistance to each other in language-related issues that cannot be explained with a focus on communication breakdowns. These instances fall outside the scope of negotiation of meaning. Therefore, the studies that focused on negotiation of meaning reported these instances as an additional finding to their real focus. As a result, research has been unable to present a full understanding of the nature of learners’ behavior addressing linguistic forms.

**Tasks and SCMC**

The task type used in most of the SCMC studies, with only a few exceptions, was the free discussion task. The students were asked to chat either as a whole class or in small groups about a topic determined by the researcher or instructor. Interestingly, all the studies published before the year 2000 used free discussion tasks to study learners’ interaction in SCMC environment (Beauvois, 1992, 1998; Chun, 1994; Kern 1995; Kitade, 2000; Sotillo, 2000, Sullivan & Pratt; 1996; Warschauer; 1996).

Exploring the effects of these tasks has been helpful to create an initial
understanding of the discourse in SCMC. However, the advantages and disadvantages of using them have not been explored enough. Ortega (1997) argues that if research does not address the issue of task, its conditions and its process, we can hardly move beyond making vague predictions about SCMC, and we will be left with another black box.

After the year 2000, although there were still some studies that used free-discussion tasks (Abrams, 2003; Garcia & Arbeiaiz, 2003; Lee; 2002; Tudini, 2003), other studies started to use more controlled tasks. Blake (2000), Blake and Zyzik (2003) de la Fuente, (2003), Morris (2005), Oscoz (2003), Smith (2003a), Thoms et al. (2005) used jigsaw, decision-making and information gap tasks that were present in the typology proposed by Pica et al. (1993). Some of these studies (e.g., Blake 2000; Oscoz, 2003; Smith, 2003a) and Darhower (2000), which did not use tasks from Pica et al.’s typology, focused on the effects of task type on learners’ talk in SCMC environments. The others used jigsaw, information gap and decision-making tasks for only analyzing the interactional features of learner talk, without making any comparison between task types.

Blake (2000), reviewed earlier, showed that well-designed tasks created an environment for learners to notice the gaps in their lexical interlanguage. The results of the study showed that, jigsaw tasks proved superior to information-gap and decision-making tasks with regard to negotiation of meaning instances they generate. Similarly, Smith (2003a) tested two task types from Pica et al.’s typology: decision-making and jigsaw tasks. The results showed that 44% of the total turns contained negotiation in the decision-making tasks whereas 23% of the total turns were spent for negotiation in the jigsaw tasks. This finding did not support Pica et al.’s prediction that jigsaw tasks would provide the most suitable ground for negotiation. Smith (2003a), however, explained that the reason for this unexpected result was the deliberate integration of unknown words. Indeed, most negotiated work centered on these items.

The studies carried out by Blake (2000) and Smith (2003a) analyzed negotiation of meaning as a potentially efficient discourse device for language learning. The first study corroborated the prediction that jigsaw tasks would be most favorable with regard to negotiation. The second study did not corroborate and provided a different result.
than expected. In fact, this last finding ties in perfectly with the view of tasks held in sociocultural theory. From the sociocultural perspective, tasks are not seen as stable and predictable entities (Ellis, 2003). Specific goals of the participants who are engaged in particular activities very much define the nature of tasks. The different findings of Smith (2003a) and Blake (2000) substantiate the claims about tasks’ having unpredictable aspects that may depend on many contextual factors (Coughlin & Duff, 1994).

Darhower (2000) compared open-ended tasks to structured ones in an SCMC environment from a sociocultural perspective. Thirty-three students were divided into eight groups and each week six groups were assigned to structured tasks and two groups were assigned to open-ended tasks. Darhower compared structured and open-ended tasks with regard to four general themes: (a) Informational content, (b) the nature of intersubjective states, (c) particular grammatical structures, (d) off-task discussions. Darhower reported that the tasks did not any considerable differences between in relation to the informational content, the nature of intersubjective states, and the use of particular grammatical structures. Darhower stated that the structured tasks favored the emergence of off-task discussions: in 16 of a total of 65 chat sessions learners went off topic, and 11 of them occurred in the structured texts. Darhower concluded that in order to maintain learners on task, the use of open-ended tasks might be more favorable in SCMC.

Oscoz (2003) set out to conduct a study arguing that research investigating jigsaw tasks had focused on negotiation of meaning only and that research investigating free discussion tasks had focused on quantity and syntactic complexity. She believed that such polarization was not necessary and that all constructs should be investigated for all tasks. 60 participants from intermediate level Spanish courses randomly selected for this study. They completed one jigsaw task and one free discussion task. The data analysis showed that the students produced more language and more subordinated clauses in the free discussion than in the jigsaw. However, the students were more accurate with their language use and generated more negotiation of meaning in the jigsaw task.
In sum, tasks have been studied from three different perspectives. The first one was the interactionist perspective and it was represented by Blake (2000) and Smith (2003a). This perspective was more interested in the potential of different tasks (mainly jigsaws, information-gap and decision-making tasks) in fostering negotiation. The second perspective was represented by Darhower (2000). Darhower’s study brought the concepts such as intersubjectivity, off-task talks, use of grammatical structures and informational content into the analysis of tasks. His findings supported the idea of unpredictability of learners’ language behavior in tasks. The third perspective was represented by Oscoz (2003). Oscoz’s study claimed to be a bridge between two lines of research by using the constructs and tasks of both. The results of this study favored free discussions in language complexity and quantity and jigsaws tasks in accuracy and negotiation of meaning. Table 4 provides information about the findings of the studies that compared tasks types and the tasks used in these studies.

Table 4

Findings on Tasks Effects in SCMC

<table>
<thead>
<tr>
<th>Studies</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blake (2000),</td>
<td>Jigsaws generate more meaning negotiation in comparison to decision-making, information gap and free-discussion tasks.</td>
</tr>
<tr>
<td>Oscoz (2003)</td>
<td></td>
</tr>
<tr>
<td>Smith (2003a)</td>
<td>When seeded with unfamiliar language items task types jigsaws may not be the task that is most beneficial for negotiation.</td>
</tr>
<tr>
<td>Darhower, 2000</td>
<td>Tasks can be unpredictable in terms of their informational content, (b) the nature of intersubjective states, (c) particular grammatical structures.</td>
</tr>
<tr>
<td>Darhower, 2000</td>
<td>Open-ended tasks create less off-task discussions.</td>
</tr>
<tr>
<td>Oscoz, 2003</td>
<td>Jigsaws produce more accurate language in comparison to free-discussions.</td>
</tr>
</tbody>
</table>
It seems that research findings in relation to the effects of tasks on language focused learner talk are inconclusive. The studies reviewed in the “Attention to Form in SCMC” section reveal that in almost any task type learners can generate this language behavior. In addition, only a few studies compared any two or more than two tasks which would give us an idea about the frequency of the phenomenon in one task in comparison to another. However, these studies did not use any unit of analysis that will account for learners’ language focused collaborative dialogue but mostly dealt with negotiation of meaning. Therefore, we need more research on the effects of tasks with appropriate units of analysis in order to understand the relationship between tasks and learners’ form focused language behavior. Table 5 below presents the task types used in SCMC based research and describes them.

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free discussion (open-ended)</td>
<td>Learners present their opinion on a piece of reading or a class topic in an SCMC environment.</td>
</tr>
<tr>
<td>Decision-making</td>
<td>Learners have equal access to all the necessary information to complete task. They are asked to converge on a single outcome.</td>
</tr>
<tr>
<td>Information Gap</td>
<td>One of the learners holds the necessary information that is required to complete the task. The learners work towards a convergent goal.</td>
</tr>
<tr>
<td>Jigsaw</td>
<td>Learners need to combine two separate pieces of information in order to achieve the activity goal. No one participant holds all the information that is necessary to complete the task.</td>
</tr>
<tr>
<td>Structured Tasks</td>
<td>Learners present their opinion on a topic by following a set of guiding questions.</td>
</tr>
</tbody>
</table>

**Summary**

This chapter has explained the theoretical framework that is adopted in the present study. It has provided background for two constructs that the study focuses on: collaborative dialogue and L2 tasks. Then, with special emphases on these constructs,
the chapter has reviewed the findings of two strands of research: SCMC and F2F collaborative dialogue.
CHAPTER 3
METHODOLOGY

This chapter explains the research methods and procedures employed in this study. It begins with a discussion about the research design, followed by a description of the settings and participants. Next, the chapter presents a section where the specific instruments that are used in the present study are introduced and described. Two sections explaining the data collection procedures and data analysis follow. The chapter also summarizes the procedures and the results of the methodological field test carried out prior to this study and comments on the insights gained from it. The chapter finishes with some remarks about the methodological limitations.

Before starting to explain the research design, it may be helpful to restate the purpose of the study and the research questions. The purpose of this study was to investigate the nature of collaborative dialogue in Synchronous Computer-Mediated Communication (SCMC) and to understand whether tasks have any effect on the specific patterns in which collaborative dialogue may emerge. To address this purpose the study asked four research questions:

1. To what extent learners attempt to solve linguistic problems by way of collaborative dialogue during SCMC based tasks?
2. What are the characteristics of the collaborative dialogue with regard to focus, outcome, verbalization, collaboration, and source?
3. Does task type (dictogloss and jigsaw) have an effect on the amount of collaborative dialogue?
4. Does task type (dictogloss and jigsaw) have an effect on the characteristics of collaborative dialogue?

Research Design

This study can be best described as a counterbalanced design quasi-experiment. Quasi-experiments, unlike true-experiments, do not involve random assignment of participants to groups (Creswell, 2003; Porte, 2002). In quasi-experiments, mean performances of two existing groups are compared. Mackey and Gass (2005) suggest that giving the same treatment to both groups in alternate order can partly address the problem of non-random assignment. Such counterbalanced design is
ideal for minimizing threats to internal validity when random assignment of subjects is not possible because it both addresses the possibility that non-randomized groups might not be equivalent and rules out the possible effects of the order in which the treatments are presented to the groups (Isaac & Michael, 1990).

Figure 1. Research design

Figure 1 illustrates the design of the study. In Figure 1, X represents that a group is exposed to an experimental event, the effects of which is measured. For the present study, the experimental events were the two types of tasks: jigsaw and dictogloss. The section on procedures elaborates on this figure and discusses how this design was put into practice.

Setting

The study was carried out in Turkey at two research sites. Participants were undergraduate EFL learners at two Turkish universities that were taking English language courses as their first year requirement. It is widespread among Turkish private universities to provide a preparatory year. The purpose of this year is to improve the English proficiency of freshmen to an extent that would allow them to succeed in their particular programs that use English as the language of instruction.

In the first research site, the preparatory school comprised of four modules, namely A1 (beginner/elementary), A2 (elementary/pre-intermediate), B1 (pre-intermediate/intermediate) and B2 (intermediate/upper-intermediate). The school places students into these modules based on their scores in proficiency and placement
tests. A module consists of 8-9 week depending on the calendar. The passing grade is 65 out of 100 for each module throughout which the students were assessed by way of written and spoken exams. The ones who cannot achieve the passing grade repeat the same level. The students who start the academic year at B1 and B2 levels and complete them successfully attend Academic English Program courses. The instructors of two B1-module classes agreed to incorporate the activities of the study in their regular classroom hours.

In the second research site, the language program offers English Language courses to all undergraduate students who do not have the required level of language proficiency to study at an English-medium University. Students take two stages of institutional exemption test to continue their studies in their departments. Students who cannot achieve a satisfactory level study one year of preparatory English courses in one of these levels: Alpha (Beginner/Elementary) Beta (Pre-Intermediate) Gamma (Intermediate) Delta (Upper-Intermediate/Pre-faculty). The instructor of one Gamma and one Delta level course agreed to incorporate the activities of this research into their regular class schedule.

A convenience sampling procedure was used to select the participants for this study. Convenience sampling could be defined as collecting data from a group that is easily accessible to the researcher (Kemper, Stringfield & Teddlie, 2003). An important criterion was taken into consideration when selecting the research sites. Because the phenomenon investigated in this study was collaborative dialogue in SCMC based tasks, the study required the use of an adequate number of computers. Based on this requirement, two research sites that possessed computer labs with at least 20 computers and Internet access were chosen.

**Participants**

Each of the classes that agreed to participate in this study had 24 students. From a possible of 96 students, 83 learners participated in at least one stage of the study. Of these, only 69 learners were present on the day of the recorded task sessions. On the day of the recorded task sessions, at least one group in each class that was composed of three learners had to be formed because the total number of learners was an odd number. These groups of three later on excluded from the data analysis. In addition,
some individual learners in dyads left the class after the first task and did not stay for the second task. Remaining learners from these dyads had to be regrouped. However, because they did not carry out both tasks with the same partner, these groups were also excluded. The final number of participants was 54.

This study used a non-random sampling. Interpretations of the results of the studies in which random sampling is not feasible should be made with caution (Porte, 2002). Mackey and Gass (2005) argue that collecting enough background information is crucial to help the audience decide to what type of population the results of the study is generalizable. For this purpose, a questionnaire addressing demographic issues, (e.g. age and sex), participants’ language learning history and their familiarity with chat tools was administered. To make sure that the participants’ level of English does not interfere with their comprehension of the questions, Turkish was used as the language of the background questionnaire (see Appendix A for an English version).

Based on participants' answers to the questions in the background questionnaire, the following information was gathered. The average age of the participants was 18.7. The number of female and male participants was equal: 27 male and 27 female. The participants took an average of 3.7 years of English education at high school with 4 out of 5 as an average grade. In addition, 64% of them took courses on another foreign language. The languages and the percentage of participants that took these languages were as follows: 50% German, 9% French, and 5% Italian.

Table 6
Participants' Familiarity with Computers

<table>
<thead>
<tr>
<th>Question</th>
<th>Categories</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have a computer at home?</td>
<td>yes</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>0</td>
</tr>
<tr>
<td>How often do you use a computer?</td>
<td>every day</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>frequently</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>rarely</td>
<td>5</td>
</tr>
<tr>
<td>Do you use instant messaging (chat) programs, such ICQ, MSN Messenger</td>
<td>yes</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>7</td>
</tr>
</tbody>
</table>
Table 6-Continued

<table>
<thead>
<tr>
<th>Question</th>
<th>Categories</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you use MSN Messenger?</td>
<td>yes</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>9</td>
</tr>
<tr>
<td>Have you ever used a collaborative editing program such as MoonEdit?</td>
<td>yes</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>4</td>
</tr>
</tbody>
</table>

Majority of the participants (74%) was satisfied with their typing skills. They self-reported on their typing skills as being 3.5 on average on a five-point scale. Table 6 summarizes the participants' computer skills and their familiarity with the software used in this research. Based on their answers to the other questions related to their computer related skills, it is possible to say that the participants were quite familiar with computers and chatting through computers. Almost all participants used a computer every day.

**Participants' Proficiency**

One of the purposes of this study was to determine the effect of task type on the nature of collaborative dialogue. In order to make valid comparisons between these two variables, one needs to minimize the possible effect of proficiency. As mentioned in the previous section, three of the four classes that participated in this study were placed in an intermediate and one class was placed in an upper-intermediate class. In an attempt to obtain data that were more recent regarding participants' proficiency level, the English Place Test (EPT) was administered. This test was developed by English Language Institute of the University of Michigan for use in its Intensive English Program.

The test is composed of 100 multiple-choice problems that cover four areas of the English language: listening comprehension, grammar, vocabulary, and reading. The listening comprehension part asks two types of questions in 20 items. The first type involves the examinee responding to the speakers’ questions by selecting the appropriate responses and the second type involves the examinee choosing the responses that best summarize what the speaker has said. The grammar part includes 30
items. Each grammar item places the examinee in a hypothetical situation where two people are in a conversation. The examinee has to complete the parts of the conversation that are omitted by choosing the appropriate responses. Next are 30 vocabulary items. Each item involves an incomplete sentence. The examinee must choose the word that correctly completes the sentence. Finally, there are 20 reading items. Each item presents one sentence, and asks a question concerning its meaning. The reliability estimates of this test are shown in Table 7. The reliability score of this test ranges between .88-.92.

Table 7

EPT Reliability Estimates

<table>
<thead>
<tr>
<th>Sample</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Reliability</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>U of M*, ’77</td>
<td>58</td>
<td>53.83</td>
<td>14.72</td>
<td>.89</td>
<td>4.88</td>
</tr>
<tr>
<td>U of M, ’77</td>
<td>55</td>
<td>58.94</td>
<td>16.65</td>
<td>.92</td>
<td>4.71</td>
</tr>
<tr>
<td>Japan, ’02</td>
<td>165</td>
<td>41.26</td>
<td>12.15</td>
<td>.89</td>
<td>4.03</td>
</tr>
<tr>
<td>Japan, ’05</td>
<td>207</td>
<td>42.70</td>
<td>12.60</td>
<td>.88</td>
<td>4.36</td>
</tr>
</tbody>
</table>

Note. * U of M = University of Michigan

Instruments

Two types of tasks and software programs were used as instruments in the present study. This section explains the criteria for selecting these instruments and describes them. It also presents the procedures taken to eliminate possible threats to internal validity.

Task Types

Two types of tasks were used in this study: jigsaw and dictogloss. Jigsaw tasks, also known as two-way information gap tasks, are closed tasks with only one possible outcome that require a two-way exchange of information for completion (Pica et al., 1993). The two-way exchange is ensured by the separate pieces of information each task participant receives. It has been argued that this type of tasks provides all the
necessary conditions that will allow students to negotiate toward mutual understanding of each other’s message meaning (Pica et al., 1993).

In dictogloss tasks, a short text is read to learners at normal speed and they are allowed to jot down notes as they listen. Then, the learners work together in small groups to reconstruct their version of the original text (Wajnryb, 1990). Dictogloss tasks are found to be useful in leading learners to pay attention to their production of language while they engage in constructing the meaning of a text. The selection of these two tasks was based on Swain and Lapkin’s (2001) claim about their contrasting nature. Swain and Lapkin have argued that these two tasks were contrasting in that the jigsaw primarily lead learners to negotiate meaning, but the dictogloss task lead learners to negotiate form within a meaningful activity.

**Description of the Task Material**

Three jigsaw tasks were used in this study, and only two of them were included in the data analysis (see Appendix B). These tasks were based on three picture stories that were composed of eight individual pictures (see Appendix B). The picture story of the first jigsaw that was included in the analysis (Jigsaw A in Appendix B), taken from Rollet and Tremblay (1975), describes an ordinary experience of a boy. A boy goes fishing and catches three fish and sells them to a fishmonger and earns three dollars. When he presents this money to his father, his father suggests buying some sporting goods for the boy. However, the boy, rejecting all the suggestions, proposes to buy a gun. The second jigsaw task (Jigsaw B in Appendix B) was also based on a set of eight pictures taken from Rollet and Tremblay (1975). The pictures describe a story in which a boy sees his mother preparing and then placing some jam on top of a cupboard. He tries to reach the jam, but he fails and falls down on to the floor.

Three dictogloss tasks were used and only two of them were included in the data analysis. Each dictogloss task involved a short text. The text that that was used for the practice session was chosen from Wajnryb (1990) (see Training Dictogloss in Appendix C). The texts that were included in the data analysis (see Dictogloss A and B in Appendix C) were created from the above-mentioned picture stories following the strategy used in Swain and Lapkin (2001). The following section explains this strategy.
Task Comparability

Care was taken to control for the content between task types and task difficulty within task type. One of the purposes of the study was to investigate the differences between task types in terms of their effect on the number and characteristics of LREs. To avoid any possible effect of task content on the results, tasks should be matched on their content. To ensure comparability between the content of the tasks, the dictogloss texts were created out of the two picture stories that were also used in the jigsaw tasks. At the designing stage, two native speakers of English were asked to tell a story from each of the picture sets. The stories they told were first recorded and later transcribed. Two story versions were obtained for each set of pictures. These two versions were then combined and slightly modified in order to ensure the same level of difficulty. Figure 2 presents the pairs of tasks that are parallel in content.

\[
\begin{array}{c}
\text{Dictogloss A} & \text{Jigsaw A} \\
\text{Dictogloss B} & \text{Jigsaw B}
\end{array}
\]

*Figure 2. Parallel tasks*

Tasks were also controlled for their level of difficulty/complexity. The present study uses two samples from two task types. Two examples of jigsaw and two examples of dictogloss represent the constructs of jigsaw and dictogloss respectively. However, in order to claim that this operationalization of the constructs was a valid one, equivalence of these two tasks should be taken into consideration. To control for the textual difficulty for the dictogloss tasks, Fog Index (FI)\(^1\) and the Lexical Density (LD)\(^2\), two readability tests designed to show how easy or difficult a text is to read and

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\(^1\) The FI uses the following formula: Gunning Fog Index = \(\frac{\text{Average number of words in sentences}}{\text{Percentage of words of three or more syllabus}} \times 0.4\)

\(^2\) The LD is calculated by the following formula: \(\text{LD} = \frac{\text{Number of different words}}{\text{Total number of words}} \times 100\)
understand, were used. The FI for Dictogloss A was 6.79, and the FI for Dictogloss B was 6.61. The LD for Dictogloss A was 52.20%, and the LD for Dictogloss B was 52.29%.

A different procedure was followed for the jigsaw tasks, because the stimulus in these tasks, unlike the one in the dictogloss tasks, was visual. The picture stories, from which the jigsaws were derived, were evaluated with regard to cognitive complexity. Based on the task-based language teaching literature, three dimensions of cognitive complexity were determined. Type of relationship (Brown, Anderson, Shillcock & Yule 1984)\(^3\), amount of information (Brown et al., 1984; Robinson, 2001)\(^4\), and structuredness (Brown et al., 1984; Skehan, 2001)\(^5\) were the dimensions identified following Ellis (2003). Based on these dimensions, three Likert-scale items were prepared. These items along with the two picture stories were shown to five raters. The raters were asked to evaluate the level of similarity between the picture stories by responding to these Likert-scale items. Each item was introduced with a set of questions that aimed to guide the rater in his response (see Appendix D). The raters used these introductory questions to understand what each Likert-scale item was about, and then, they circled a number between one and five. This procedure was repeated for all three items. Five raters evaluated the pictures. Table 8 presents how each dimension was rated by each rater. The final row displays the average ratings for each dimension, and the final column shows the average ratings of each rater for all the dimensions combined. The bottom right-most cell where the final row and column intersect shows the overall average score for all the raters’ scores on all dimensions. This score represents the overall similarity between the two picture stories with regard to cognitive

---

\(^3\) Brown et al. (1984) identified three types of relationships in tasks that represented a continuum. Static tasks present stable relationship between objects. Most of the stable tasks require the exchange of information to identify the objects and spatial relationship with the other objects. Dynamic tasks involve events and actions that are changing. In these tasks, some of the characters may appear, disappear or reappear. The learners have to be consistent with their language to make the other party focus on the right character. In abstracts tasks, learners often need to express an opinion on a specific topic or justify a particular action by presenting their perspectives.

\(^4\) Brown et al. suggest that the number of characters and relationships, and especially the number of similar characters in a task make the task more or less difficult.

\(^5\) Skehan (2001) states, “some tasks contain a clear macrostructure, with the time sequence underlying the task fairly clearly identifiable” (p. 173). Also, Brown et al. argue that stories that have several changes of scene and flashback to earlier events of time are more difficult.
difficulty. This score is 4.4 out of a maximum score of five. Therefore, one can interpret that the two picture stories are close to each other in cognitive difficulty.

Table 8

*Similarity in Cognitive Difficulty between Picture Stories*

<table>
<thead>
<tr>
<th>Rater</th>
<th>Type of Relation. *</th>
<th>Amount of info. **</th>
<th>Structuredness</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rater 1</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>Rater 2</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>Rater 3</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4.3</td>
</tr>
<tr>
<td>Rater 4</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Rater 5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td>M</td>
<td>4.2</td>
<td>4.4</td>
<td>4.6</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Note. * Type of relationship. ** Amount of information.

All the raters were graduate-level students at a university in the U.S. No special qualification was sought for the raters because the responses to the rating procedure did not require any background knowledge in the field of SLA.

**MSN Messenger**

One of the two SCMC tools that mediated the learners’ interaction in this study was MSN Messenger. MSN Messenger is an instant-messaging software program that provides multiparty text chat. The MSN Messenger conversation window is divided in two parts. The bottom part allows the user to input the message to be sent. When the user decides to send the message, he clicks on the send button and his message appears in the top part of the window. What is seen in the top part of the sender’s window can also be seen in the receiver’s window. MSN Messenger also allows alternative ways of expressing one’s own emotions. From the menu provided by the program, the user can choose emoticons and winks that best express his or her feelings. This program has been selected for the study because of its history feature that allows its users to store their conversations in a separate file. Also, MSN Messenger is a freeware, and therefore, can easily be obtained from its web address http://messenger.msn.com/xp/downloadx.aspx.
CoWord

The second SCMC tool that mediated the learners’ interactions was CoWord. CoWord is a cooperative multi-user text-editing tool that was developed by a research team lead by Sun Chengzheng. This free software can be downloaded from http://cooffice.ntu.edu.sg/coword/. One of the important features of the software is that each co-author can edit a shared document in a SCMC environment regardless of their place. The software also includes a multiple-text-cursor feature. The users can choose their cursor color and every cursor movement and text changes can be followed from each user’s screen. The program is very easy to use for those who are already familiar with Microsoft Word functionalities.

This software program was chosen for the study because of its editing features. MSN Messenger allows users to send messages in chunks. The users first prepare the text they will send in a small typing screen and when they press the send button, their text appears in the shared screen. Only then, the receiver can see this message. By contrast, in CoWord, a message that is being typed can be followed character by character from all the user’s screens. Another feature that this program offers and MSN Messenger does not is that the users are able to delete any part of the text they decide not to include in their final text. The methodological field test showed that these features could facilitate the writing component of the tasks.

Procedure

This section explains how the researcher gained access to the research sites and describes the procedures followed to administer the background questionnaire, consent forms, EPT, practice and recorded task session. As mentioned in the beginning of the chapter, this study follows a counterbalanced design. A description of the counterbalanced design and a basic visual model has been provided already. This section explains the order the groups received the tasks and provides another visual representation of this ordering. Finally, this section describes the research schedule and provides information as to when each stage took place.
Accessing the Research Site

The researcher contacted the administrative units of several private universities in Turkey about the possibility of conducting research in their preparatory English school. Two universities responded positively and directed the researcher to the directors of the preparatory schools. The researcher had meetings with the directors explaining the research procedures, tasks and equipments needed. In the first research site, the director arranged a meeting with the entire beginner-level instructors where the researcher presented his research proposal and asked for volunteers. The classroom teachers found the task materials too difficult for their learners and suggested that higher-level students would have less difficulty with these tasks. After this meeting, the director himself contacted with intermediate level instructors and asked for volunteers that could spend four class periods for the research project. Two instructors of two intermediate classes agreed to offer four of their class periods for the research. In the second research site, the director of the program contacted the instructors and asked for volunteers. Two instructors, one teaching an intermediate-level class and one teaching an upper-intermediate class, agreed to offer four class periods for the research project.

Background questionnaire and Consent Forms

The researcher visited the classes for ten minutes during a regular class period. He described to the students what participation in this research would involve and asked for their participation. He also explained that if any student rejected to participate in the study, their data would not be recorded, but because the research was incorporated in regular classroom hours, they needed to carry out the activities that were involved in the project. Later on, the researcher distributed the consent forms and the background questionnaires and left the classroom. The instructors collected the signed consent forms and the completed background questionnaires.

Placement Test EPT

The classes in both research sites took the EPT before they participated in the practice and recorded task sessions. In both research sites, in order to test as many learners as possible, two consecutive days were allocated for the administration of the EPT. Completion of the test took approximately 100 minutes. The test started with the listening part in which learners listened to a recorded CD. The researcher timed the
listening part. The rest of test was self-paced. The participants who were late to the class and missed the listening part answered the rest of the questions.

**Practice Task Session**

In order to familiarize participants with the task types and to provide them with the opportunity to practice doing online tasks, each class participated in a practice task session. The practice session took only one class period, forty minutes. It included the completion of one jigsaw and one dictogloss task. The participants were randomly assigned into dyads. These dyads were kept intact throughout the study so that the participants had a chance to know their specific partner better and establish rapport with each other. After the researcher gave the instructions, learners started with a jigsaw and went on with a dictogloss. Procedures for the tasks were the same as the actual recorded task sessions.

**Administrating the Tasks**

Three-four days after the practice sessions, the participants, instructor of the class and researcher met at a computer lab. The participants were seated at their previously assigned computer stations. Each dyad member was seated in such a way that s/he could not see the other dyad member's computer screen. Each participant found the following software programs open and ready to use on his/her computer desktop: (1) a MSN Messenger chat window, connected to the other dyad member's account, (2) a picture file (jpg format) that contained four of the eight pictures, (3) a CoWord collaboration window. The participants were also given a paper copy of the instructions for either the jigsaw or the dictogloss task. The instructions were in Turkish to make sure that their level of English did not interfere with their comprehension of the instructions (see Appendix E for English versions).

The jigsaw tasks included two forms created from the two picture stories. Form A contained the pictures 1,3,5,7 and Form B contained the pictures 2,4,6,8. The participants, who only possessed one of the forms, were told to work in dyads and explain their pictures to their partners. For ten minutes, the participants described what they saw in the pictures (e.g. the characters, the objects and the actions these characters and objects were involved or interacted) and tried to make connections with their partners’ pictures. The dyads used MSN Messenger to communicate at this stage. At
the end of ten minutes, the researcher announced that they could use the CoWord program. After this point on, they had both programs at their disposal. The instructions told them that they should write the story on the CoWord window, and at the end of 35 minutes, they should agree on a completed answer. The researcher reminded them that they could use MSN Messenger anytime they wanted to send a message to their partner.

The dictogloss task started with the researcher reading one of the dictogloss texts. As explained in the previous parts, these texts were parallel to the picture stories that were used in the jigsaw tasks. The researcher read the text twice, and only in the second time, the participants were able to take notes either on a piece of a paper or a Microsoft Word document. Then, the participants shared their notes and their understanding of the story with their partner talking through MSN Messenger. This stage took ten minutes and at the end of this time, just as in the jigsaw tasks, the researcher announced that the participants could use the CoWord program. From this point on, they tried to reconstruct the story on the CoWord window as they had heard it. The MSN Messenger window was available for them all throughout the task to mediate their conversations.

As explained above, the participants complete the tasks in two stages: the first stage allowed them to use only MSN Messenger for 10 minutes, and the second stage allowed them to use both MSN Messenger and CoWord for another 25 minutes period. This configuration was a result of the insight gained through the methodological field test. The analysis of the average number of turns and words in each task revealed that, in the dictogloss, the learners took 58 turns and used 273.2 words on average, whereas, in the jigsaw, they took 64.2 turns and used 394.3 words. During the dictogloss tasks, both MoonEdit, a similar software program to CoWord, and MSN Messenger were available to the learners and they could use any of the programs any time during the task. During the jigsaw tasks, the learners were only allowed to use MSN Messenger. This nonsymmetrical administration of tasks may have triggered a confounding effect on the results. In addition, based on the average number of turns and words in each task, it seemed that using MoonEdit and MSN Messenger together all throughout the task somehow affected the amount of talk generated through MSN Messenger.
negatively. Therefore, the purpose of delaying the use of CoWord for 10 minutes was to promote learner-learner interaction through MSN Messenger.

**Counterbalancing**

Counterbalancing can be defined as a design feature that refers to different ordering of tasks (treatments) for different participants. Counterbalancing can minimize the negative effects of lacking a random assignment. This way, the risk of low comparability between groups due to non-random assignment can be lessened because the analysis is done by pooling and averaging the data across groups (Mackey & Gass, 2005).

In this case, as can be seen in Table 9, one of the two classes in the first research site, Class E first took Jigsaw A then Dictogloss B. Class F first took Dictogloss A and then Jigsaw B. In the second research site, both classes, with two subgroups, received the task types in every possible order. The reason for this change was the higher proficiency level of Class Delta. In order to eliminate any possible bias that would emerge because of the interaction between order and proficiency, this class, in two subgroups, took both dictogloss and jigsaw as a first task. Note that, in the second research site, the absenteeism of some of the dyads that were supposed to take the dictogloss as the first task resulted in unequal number of dyads in subgroups.

Because four individual tasks would be collapsed into two task types (jigsaw and dictogloss) for the eventual analysis, the study was more concerned with the ordering combinations of task types rather than individual tasks. Thus, with the order presented in Table 9, the study covered all the possible ordering alternatives for two treatment types (jigsaw and dictogloss). This counterbalancing minimizes any positive or negative effects of the first received task on the second.

<table>
<thead>
<tr>
<th>Table 9</th>
<th>Order of Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class E</td>
<td>Class F</td>
</tr>
<tr>
<td>n= 7</td>
<td>n= 8</td>
</tr>
<tr>
<td>Jigsaw A</td>
<td>Dicto A</td>
</tr>
<tr>
<td>Dicto B</td>
<td>Jigsaw B</td>
</tr>
<tr>
<td>Class Gamma</td>
<td>Class Delta</td>
</tr>
<tr>
<td>n= 2</td>
<td>n= 4</td>
</tr>
<tr>
<td>Dicto A</td>
<td>Jigsaw A</td>
</tr>
<tr>
<td>Jigsaw B</td>
<td>Dicto B</td>
</tr>
<tr>
<td>Jigsaw A</td>
<td>Dicto A</td>
</tr>
<tr>
<td>Jigsaw B</td>
<td>Jigsaw B</td>
</tr>
</tbody>
</table>
Research Plan

Table 10 presents the research plan that was put into practice. The study spanned a two-week period that included four meetings for each class. On Day 1, the participants completed the background questionnaires and consent forms. On Day 2, they took the proficiency test. On Day 3, they carried out a practice task, and on Day 4, they carried out the recorded tasks.

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background. Quest. Consent Forms</td>
<td>Proficiency test (EPT)</td>
<td>1. Practice session</td>
<td>Recorded task sessions</td>
</tr>
</tbody>
</table>

Data Coding and Analysis

This section discusses the procedures that were followed to analyze the data. Table 11 shows the focus of each research question, how these foci were operationalized within the framework of this research, and the statistical analyses carried out to measure them.

Two sources provided data for the statistical analyses in the present study. The primary data source was the chatscripts. The learners’ finished stories from CoWord constituted the other data source; however, their contribution to the ultimate analysis was limited. Given the fact that this study set out to investigate the nature of collaborative dialogue in learner-leaner interaction via SCMC tools, it focused on the chatscripts rather than the learners’ stories because only the chatscripts involved learner-learner talk. Although it was technically possible for learners to communicate using CoWord, this was neither practical (this program does not order turns) nor allowed by the task instructions.
Table 11

Overview of Data Analysis

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Focus of RQ</th>
<th>Operationalized Focus</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ 1</td>
<td>Amount of collaborative dialogue</td>
<td>Number of LREs regardless of task type</td>
<td>descriptive statistics</td>
</tr>
<tr>
<td>RQ 2</td>
<td>Characteristics of collaborative dialogue</td>
<td>Categorization of LREs based on focus, outcome, verbalization, collaboration, source</td>
<td>descriptive statistics</td>
</tr>
<tr>
<td>RQ 3</td>
<td>Task type</td>
<td>Jigsaw and Dictogloss</td>
<td>$t$-tests</td>
</tr>
<tr>
<td></td>
<td>Amount of collaborative dialogue</td>
<td>Number of LREs</td>
<td></td>
</tr>
<tr>
<td>RQ 4</td>
<td>Task type</td>
<td>Jigsaw and Dictogloss</td>
<td>chi-square tests</td>
</tr>
<tr>
<td></td>
<td>Characteristics of collaborative dialogue</td>
<td>Categorization of LREs based on focus, outcome, verbalization, collaboration, source</td>
<td></td>
</tr>
</tbody>
</table>

Description of Chatscripts

Chatscripts were composed of the learner-learner interactions through MSN Messenger. MSN Messenger provides an option called save history to store the conversations between the users of the program. The conversations are stored in a standard format. In the present study, the researcher used this option to save the participants’ conversations and later reformatted them in a MS Word file. These electronic files were the source of reference during the analysis described in the following subsections.
Amount of talk

Three measures were used to quantify the amount of talk learners produced: words, e-turns and turns. An e-turn was defined as an on-screen message that appears in a form determined by its author. Thorne proposed this unit in order to address the material conditions of computer-mediated communication. He stated, "a user’s "message" becomes an "e-turn" when it appears on the public screen as a distinct block of text tagged with the sender’s name" (Thorne, 2000). A turn, following Smith (2003), was “counted each time there was a transfer of floor from one participant to the other” (p. 42). The purpose of this study was to investigate the effect of task on the number of LREs. Amount of talk was calculated in order to find out if task type had an effect on the amount of talk.

Identifying LREs

The researcher searched for LREs by examining all the chatscripts. An LRE was defined as follows for this study: any part of learner-learner dialogue where learners address or attempt to address language itself by expressing a need about their language use, making statements about it, evaluating their partners’ or their own production, or self/other-correcting.

An LRE begins with an error or the identification of a linguistic element to be discussed or a sentence or phrase that needs to be constructed or reconstructed, and finishes once a corrective move is provided or the discussion is completed. The finishing move can be as subtle as rewriting the partners’ or one’s own previous production by changing a letter. This move, in cases where the other learner does not respond, can constitute the finishing part as well. In other cases, the LRE can be handled more explicitly. For instance, participants can specifically address the source of the problem by using meta-language, with or without grammatical terminology, to refer to linguistic items. When the talk around the language items is over, the LRE is over.

Categorizing LRE

Coded LREs were sorted into the categories of outcome, focus, verbalization, collaboration and source. Table 12 summarizes the levels of LREs and the categories these levels are represented by.
Table 12  
*Categorization of LREs*  

<table>
<thead>
<tr>
<th>Levels</th>
<th>Definition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Areas of language LREs focus on</td>
<td>Lexical, Grammatical, Orthographic</td>
</tr>
<tr>
<td>Outcome</td>
<td>Result of the collaborative dialogue</td>
<td>Solved correctly, Solved incorrectly, Unresolved</td>
</tr>
<tr>
<td>Verbalization</td>
<td>Explicitness of talk centered on LREs</td>
<td>Explicit, Implicit (e.g., recast)</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Extent to which participants’ contribute to the outcome</td>
<td>One-way, Two-way</td>
</tr>
<tr>
<td>Source</td>
<td>Source of the problem</td>
<td>Production-based (input, output), Error-based (own, other, anonymous)</td>
</tr>
</tbody>
</table>

Research until now has used different labels to categorize the focus of LREs. Content, lexical, meaning, grammatical, discourse, mechanics-based, form-based, and orthographic LREs are some of the terms the researchers have opted to use. For instance, Kowal and Swain (1997) used meaning-based, grammatical and orthographic categories, whereas Leeser (2004) used only lexical and grammatical categories. Selection of categories seems to be depending on whether these categories are present in data. The methodological field test showed that three categories were appropriate for this study. LREs were categorized as follows.

1-*Lexical LREs:* LREs were coded as lexical when learners questioned the meanings of words or phrases. Learners often asked for assistance to find the English equivalent of a Turkish word or phrase. Learners also asked for assistance to choose one word from multiple alternatives to use in their text. Episode 1 and 2 illustrate a lexical LRE.

**Example 2 Lexical LRE**

A: what does jar mean?  
B: 2) and she went post office and boy thing about that she is going  
A: jar means kavanoz  
A: D  
B: ok
Example 3: Lexical LRE

A: mutfak dolabi?
   (cupboard?)
B: what?
B: ok
B: wait
B: cupboard
B: may be

2-grammatical LREs. LREs were coded as grammatical when learners addressed the form of grammatical categories, such as comparative and superlative forms, plural and possessive markers, possessive pronouns, sentence structure, subject-verb agreement, verb form and verb tenses. The below example illustrates a grammatical LRE addressing the issue of quantifiers.

Example 4: Grammatical LRE

A: mum made ...... jam
A: Some ? a bottle of ?
A: a jar of ?
B: a jar of
B: but I think he didn^t read like it
B: like that
B: did you hear sth like that?
A: hmm cant remember
A: i think we can add it
B: Ok

3-orthographic LRE: LREs were coded as orthographic, when learners talk about how to correctly spell words or when they self or other correct incorrectly spelled words. Below is an example of this category.

Example 5: Orthographic LRE

A: necati wants to eat jam
A: unfortubately
A: his mother went
A: he zaten wants this
   (already)
B: but unfortunately

In addition, LREs were categorized with respect to their outcomes. The outcome of an LRE is determined depending on the linguistic elements provided as a solution to
the problem at hand. More specifically, the categorization is concerned whether a
solution is provided and whether the solution is acceptable within the target language
norms. Thus, LREs were categorized as follows.

1- Correctly solved: LREs were coded as solved correctly when the correct
target language form itself or an appropriate explanation for it was provided. Example 6
is an example of correctly solved LREs.

Example 6: Correctly Solved LRE

A: one bla bla morning mother made a jam
B: mama made some jam
A: yes:

2-problem not solved or a disagreement about the problem solution
(unresolved): LREs were coded as unresolved, when learners left dealing with the issue
because either they could not find the answer to the problem because of lack of
knowledge (see Example 7), or they could not agree on the solution. Sometimes, LREs
were unresolved because learners ignored or could not notice the request for assistance
that their partner made (see Example 8).

Example 7: Unresolved LRE (lack of knowledge)

A: then he take a chair to able to reach to jam which stay in the kitchen on
the...(tezgah)
   (counter)
B: ok
A: what is tezgah in turkish
A: do you know it
B: no

Example 8: Unresolved LRE (ignored or unnoticed)

A: and he answered "a fish pant"
B: husam said i dont want them i want to get a
B: rifle
B: his father said
A: oltu pant diil mi
   (fishing pole is pant, isn’t it?)
B: no i cant buy it
B: its
B: dangerous
B: so he bought a fish pant to husam
3-problem solved incorrectly: LREs were coded as incorrectly solved, when learners provided a solution that was not acceptable in target language norms, or when an incorrect explanation was provided. Example 9 illustrates this category.

Example 9: Incorrectly Solved LRE

A: while he was climbing he felt down
A: and cried
B: and
B: start to criying

LREs were further categorized with respect to the level of verbalization. The criterion that determined whether an LRE was implicit or explicit was the use of metalanguage (Fortune and Thorp, 2001). Metalanguage is defined as the statements or paralinguistic indicators (e.g., emoticons, punctuation) that are used to talk or refer to language. The categories of this level were “explicit” and “implicit”. LREs were categorized as follows.

1-explicit LREs. LREs were coded as explicit, when learners addressed linguistic items with the use of meta-language, with or without grammatical terminology. In explicit LREs, learners talked about language itself as they addressed form or meaning related concerns.

Example 10: Explicit LRE

A: and buy a wolleyball or fishing p...?
A: did you get that? fishing xxxxx_
B: pole?
A: ok
A: can be poke?
B: I am not sure
A: pole is better i think
B: I think so
B: pole must be

2- implicit LREs: LREs were coded as implicit when the LRE did not contain any use of metalanguage. Implicit LREs involve learners’ addressing their linguistic target directly without building talk around it. They often either correct the other’s mistake in the form of a recast, or they repair their own mistake (see Example 11). Example 11 and 12 illustrate an implicit LRE.
Example 11: Implicit LRE (recast)

A: at second
A: he burn fish
A: at third
B: cook fish
A: he think hunting fish 2 fish and money
A: at last picture
A: he think
A: not olta he has to be gun
A: tell me your pictures

Example 12: Implicit LRE (self-correction)

A: she said that the jam bottle is on the cupboard
A: she said that the jam bottle was on the cupboard

LREs were also categorized in terms of the level collaboration they involved. A distinction was made between one-way and two-way LREs. This categorization was similar to the one made by Storch (2001). She distinguished between interactive and non-interactive LREs. LREs were categorized as follows:

1- Two-way LRE: LREs were coded as two-way when they involved the contribution of both learners. It partly corresponds to the interactive category in Storch (2001). Storch stated that in interactive LREs learners paid attention to suggestions and offered suggestions in return. In interactive LREs, both learners participate in the decision making process. In the present study, two-way LREs required the participation of each learner with at least one turn on the topic of the LRE. Example 13 is an example of how learners interactively find a solution to a lexical search started by Learner A.

Example 13: Two-way LRE

A: one bla bla ?
A: one morning one day???
B: he say something one bişey morning
(something)
B: what was bişey
(something)
A: I dont know
B: dont worry we can say one morning
A: mornng is enough I think
A::D
B: :)

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One-way LRE: One-way LREs, similar to Storch's (2001) non-interactive LREs, were the instances when “suggestions or requests for assistance were ignored, or where a decision is made with little, if any, engagement by the other partner” (Storch, 2001, p. 112). In one-way LREs, learners dismiss each other’s requests for assistance, repair their own errors without the other party making comment on it, or provide recasts to each other, without the person receiving recast responding to it.

Example 14: One-way LRE

A: then we look to of tehms
A: them
A: two of them

LREs were also categorized with respect to their source. Initially, LREs were considered as either production-based or error-based. This categorization was similar to Loewen's (2005) categorization of form-focused episodes. Loewen identified student-initiated and reactive LREs. Whereas student-initiated LREs captured the instances where learners' with a question in mind appealed for assistance, reactive LREs captured the instances where the instructor corrected the learner's utterance. Here, it is possible to associate student-initiated with production-based LREs and reactive LREs with error-based LREs. The criterion that distinguished between production and error-based LREs was whether the assistance for the problematic structure was provided (or asked) before or after the structure was used. In production-based LREs learners asked for help before the relevant problematic structure was used in a meaningful context. In error-based LREs, the assistance in the form a correction or elaborated discussion occurs after the relevant problematic structure was produced.

1-production-based LREs: LREs were coded as production-based when learners asked about the meaning or spelling of a word, or how to structure a sentence that was directly related to their upcoming language production. In other words, learners noticed a hole (Swain, 2005) in their knowledge in the planning stage and asked for assistance to fill this gap. Two types of production-based LREs were identified.

1a-output LREs: LREs were coded as output LREs, when learners production-based LRE was solely triggered by the learner's need about what s/he wanted to say, or his/her planned output.
Example 15: Output LRE
A: then he take a chair to able to reach to jam which stay in the kitchen on the...(tezgah)
B: ok
A: what is tezgah in english
A: do you know it
B: no

1b-input LREs: LREs were coded as input LREs, when learners production-based LREs was triggered by the input (story) given in the beginning of the dictogloss tasks. In coding input LREs, the content of learners' metalanguage used as evidence. The use of such words as "remember", or phrases such as "how was that?" "he (the researcher) said that..." were considered as indicating learners' attempt to retrieve some formal aspect of language that they heard in the input.

Example 16: Input LRE
A: then he went to kitchen
A: and took a chair
A: and put something that i cant remember
A: on the chair
B: ok write like that
B: it isn't so important
A: ride on the chair? :) what is the word
B: what do u want to say?
B: ride?
B: :)
B: Yes
B: I think it's okay

2- error-based LREs: LREs were coded as error-based, when learners corrected or made comments on their own or each other's already produced output. Error-based LREs were further analyzed under three categories.

2a- own LREs: LREs were coded as own LREs, when learners corrected themselves or made a comment about their own perceived error.

Example 17: Own LRE
A: reading a nespaper
A: newspaper

2b-other LREs: LREs were coded as other LREs, when learners corrected each other's error or made comments about them.
Example 18: Other LRE
A: one bla bla morning mother made a jam
B: mama made some jam
A: yes:)

2c-anonymous LREs: LREs were coded as anonymous LREs when learners tried to improve a perceived error whose author cannot be determined from the context where the problematic part appears.

Example 19: Anonymous LRE
A: at the same time we say made and prepare is it true?
B: ok
A: line 1
B: yes
A: All right then

**Inter-rater Reliability**

Another rater coded the data to check the level of agreement between two raters. The rater was a graduate student in the field of Applied Linguistics. He was trained on how to identify LREs and sort them into categories based on the data from the methodological field test. The training involved explanations of the categories and the presentation of examples. The researcher first explained what the category was about and then presented a relevant example. Then, the rater was presented with randomly selected six full chatscripts, which constituted 11% of the data, and asked to identify LREs. At this phase, the rater carefully read the chatscripts and highlighted the parts that he judged as LREs. The total number of potential LREs that were tallied based on the coded chatscripts of the rater and the researcher was 24. The level of agreement between the raters was 88%. The raters disagreed over three instances. These instances were recoded after the disagreements were solved.

As a second step, the rater was asked to code randomly selected 23 LREs (14% of the total number of LREs) with respect to the categories of focus, outcome, verbalization, collaboration and source. The level of agreement and disagreement were reported by the calculation of Cohen’s kappa and the percentage for each category. The raters discussed and solved the disagreements. After the disagreements were solved, the LREs were recoded.
Table 13  

**Inter-rater Reliability**

<table>
<thead>
<tr>
<th>Category</th>
<th>Kappa</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>.92</td>
<td>96</td>
</tr>
<tr>
<td>Outcome</td>
<td>.86</td>
<td>96</td>
</tr>
<tr>
<td>Verbalization</td>
<td>.88</td>
<td>96</td>
</tr>
<tr>
<td>Collaboration</td>
<td>.89</td>
<td>96</td>
</tr>
<tr>
<td>Source (Detailed Source)</td>
<td>.80 (.82)</td>
<td>90 (90)</td>
</tr>
</tbody>
</table>

**Description of CoWord Stories**

The learners’ stories were the data source that was constituted by the end products of learners’ collaborative writing through CoWord. This data was saved to a MS Word computer file immediately after the learners completed the tasks. As mentioned earlier, this data source did not contribute to the eventual data analysis as much as the chatscripts. The analysis took advantage of the stored stories to the extent that they clarified issues related to the categorization of LREs.

**Methodological Field Test**

Gass and Mackey (2005) argue that allocating time for conducting pilot studies is of crucial importance in L2 research because it allows researchers to test the study design, assess the feasibility of data collection procedures, and if there are any problems with the design, make revisions to it. For this reason, a methodological field test was carried out for the present study. In this study, ten intermediate level English-as-a-Second-Language learners from an intensive English language program at a major southeastern university completed one jigsaw and one dictogloss task by using the MSN Messenger and MoonEdit software. Each participant was randomly paired with another participant to form dyads. Again randomly, two of the dyads were assigned to the Blue Group and three of the dyads were assigned to the Yellow Group. The dyads in each group completed one jigsaw and one dictogloss task.

The methodological field test shared the same research questions as the current study. Overall, a total of 25 LREs were identified. Learners prioritized lexical features. Of the total number of LREs, 56% focused on grammatical features. Grammatical
LREs constituted 44% of the total number of LREs. In this study, LREs were also categorized in relation to the level of verbalization they showed. The learners dealt with 72% of the LREs explicitly, that is, learners explicitly indicated by their use of metalanguage that their focus of interest was the linguistic code. In addition, the percentage of the correctly solved LREs was high: 65% of the linguistic problems resulted with the correct solution. The qualitative analysis revealed that when the learners engaged in explicit discussion about language problems, they took very short turns. An additional finding from this qualitative analysis was that the learners incorporated medium-specific features into their discussions about linguistic items. For instance, on several occasions, the learners used animated figures and emoticons, two features MSN Messenger provided, to acknowledge an agreement on an outcome.

With regard to task type, this study revealed that the dictogloss task procedure was useful in creating opportunities for learners to discuss about their own language use. A Wilcoxon signed-ranks test indicated that the number of LREs generated by the dictogloss was significantly higher than the number of LREs generated by the jigsaw ($Z = 2.03, p < .05$). In fact, the jigsaw tasks could only yield four observations. This low number of observations in the jigsaw tasks made it unfeasible to compare the two tasks with respect to the levels of LREs, e.g. focus, outcome.

The findings of this methodological field test should be evaluated with caution. The specific configuration of the tasks, that is, the fact that in the dictogloss, the learners were allowed to use both MoonEdit and MSN Messenger, and in the jigsaw, they were only allowed to use MSN Messenger might have played a role in the results regarding the effect of task type. The current study improves the design to minimize the influence of this confounding variable.

**Summary**

In this chapter, the research design has been explained and illustrated with figures. The chapter has described the methodological field test, the setting and participants. The instruments have been introduced and some validity problems and how the study addressed them have been discussed. Then, the data collection and analysis procedures have been explained.
CHAPTER 4

ANALYSIS AND RESULTS

The purpose of this study was to investigate the amount and characteristics of collaborative dialogue that Turkish-speaking EFL learners participating in tasks through Synchronous Computer-Mediated Communication (SCMC) could engage and to find out if there was any difference in the amount and characteristics of their collaborative dialogue depending on the task type.

This study sought to answer the following research questions:

1. To what extent learners attempt to solve linguistic problems by way of collaborative dialogue during SCMC based tasks?
2. What are the characteristics of the collaborative dialogue with regard to focus, outcome, verbalization, collaboration, and source?
3. Does task type (dictogloss and jigsaw) have an effect on the amount of collaborative dialogue?
4. Does task type (dictogloss and jigsaw) have an effect on the characteristics of collaborative dialogue?

Chapter 4 explains the statistical procedures that were followed to answer the research questions. Learners' interactions through MSN Messenger were saved using the save history feature and coded as described in Chapter 3. The resulting data were submitted to statistical analyses. This chapter reports on these analyses and their results. The section below reviews the research questions and explains the analysis used to answer them. The chapter also discusses the effects of learners' proficiency and language production on the amount of collaborative dialogue.

Analysis of Research Questions

Research Question 1 and Research Question 2 focused on the nature of the collaborative dialogue in SCMC regardless of task type. Because there was scarcity of research in the area of collaborative dialogue in SCMC, the study asked about, as Research Question 1, the extent to which collaborative dialogue could occur in SCMC-based tasks. To address this research question, descriptive statistics were reported. The total number, mean and standard deviation of LREs were presented. These numbers were later on, in Chapter 5, compared to the numbers in
Research Question 2 focused on the characteristics of LREs in general. The purpose of this research question was to find out the specific categorical labels (e.g., solved correctly, lexical, etc.) that would best describe the LREs in SCMC-based chat interactions. To address this research question, descriptive statistics (i.e., percentages) were reported for five categories: focus, outcome, collaboration, verbalization and source.

Research Question 3 and Research Question 4 asked whether task type had any effect on the amount and characteristics of LREs. Research Question 3 focused on the effect of task type on the number of LREs. The first purpose of this question was to find out whether learners' choice of engaging in an LRE was affected by the task that they carried out. This question also had the purpose of making comparison between the results of this study and the results of previous studies (e.g., Swain & Lapkin, 2001). To address this research question, a dependent samples t-test was carried out. Cohen’s $d$ was reported as a measure for effect size for the $t$-test, which can be defined as the difference between means of two groups divided by standard deviation of either group. A rule of thumb for judging the magnitude of $d$ is that 0.2 is small, 0.5 is medium and 0.8 is large (Cohen, 1988).

Research Question 4 focused on whether task type had an effect on the characteristics of LREs. The purpose of this question was to find out whether learners, depending on the task type, tended to produce LREs belonging to a specific category. To answer this research question, the relationship between task type and each of the five categories and two additional categories were investigated using a series of chi-square tests. As an effect size measure, $w$ is reported. Cohen (1988) has offered the following rule of thumb to interpret $w$: 0.1, small, 0.3, medium, 0.5, large.

**Analysis of Number of LREs**

The following analyses were conducted to answer Research Question 1 and 3. These research questions focused on the number of LREs. Research Question 1 approached the issue without making any distinction between task types. Research Question 2 focused on the number of LREs to see if there was any differences between task types.

The occurrence of LREs was counted. Table 14 shows the descriptive statistics for the number of LREs by task type. Figure 3 is a graphic representation of the mean number of raw LRE counts by tasks type. Overall, learners produced 161 LREs with an average of 2.98.
Descriptive statistics suggested that the dictogloss elicited higher number of LREs ($M = 3.55$) than the jigsaw ($M = 2.40$). This difference just missed significance $t(26) = -1.88$, $p = 0.07$, however it did represent a medium effect size $d = .55$.

<table>
<thead>
<tr>
<th>Task Type</th>
<th>$N$</th>
<th>Sum</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw</td>
<td>27</td>
<td>65</td>
<td>2.40</td>
<td>1.76</td>
</tr>
<tr>
<td>Dictogloss</td>
<td>27</td>
<td>96</td>
<td>3.55</td>
<td>3.21</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>161</td>
<td>2.98</td>
<td>2.98</td>
</tr>
</tbody>
</table>

**Table 14**

*Number of LREs*

*Figure 3. Mean numbers of LREs by task type*

**Analysis of Characteristics of LREs**

The following analyses were conducted to answer Research Question 2 and Research Question 4. Research Question 2 focused on the LREs from a point of view that did not make any distinction between the tasks. Research Question 4 set out to find out if there was a task effect on the characteristics of LREs. LREs were categorized with respect to five levels: focus,
outcome, verbalization, collaboration and source. Each LRE, therefore, was labeled with one of the subcategories of each category. The following sections report on the results of a series of chi-square tests carried out to see if there was a relationship between task type and these categories.

**Focus of LREs**

As mentioned in Chapter 3, this category refers to the areas of language LREs focus on. LREs were coded as lexical, orthographic or grammatical. Lexical LREs included the instances where learners questioned the meanings of words or phrases. Grammatical LREs included the instances where learners addressed the rule-governed features of the language. Finally, orthographic LREs included the instances where learners talked about how to correctly spell words or when they self- or other-corrected incorrectly spelled words. Table 15 displays the descriptive statistics of the foci of LREs by task type. Regardless of task type, the lexical category constituted the highest percentage of all LREs (54.5%). The percentages of grammatical (23.1%) and orthographic (22.4%) LREs were very close to each other.

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Lexical</th>
<th>Orthographic</th>
<th>Grammar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 85)</td>
<td>(n = 35)</td>
<td>(n = 36)</td>
<td>(154)</td>
</tr>
<tr>
<td>Jigsaw (n = 62)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>59.7%</td>
<td>16.1%</td>
<td>24.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within focus</td>
<td>43.5%</td>
<td>28.6%</td>
<td>41.7%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss (n = 94)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>51.1%</td>
<td>26.6%</td>
<td>22.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within focus</td>
<td>56.5%</td>
<td>71.4%</td>
<td>58.3%</td>
<td></td>
</tr>
<tr>
<td>Total (n = 154)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>54.5%</td>
<td>22.4%</td>
<td>23.1%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within focus</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

In terms of differences across tasks, it seems that the percentage of lexical LREs was higher in the jigsaw (59.7%) than in the dictogloss (51.1%). In addition, the percentage of
orthographic LREs was higher in the dictogloss (26.6%) than in the jigsaw (16.1%). The difference in grammatical LREs across tasks was very small (jigsaw, 24.2% and dictogloss, 22.3%). A chi-square analysis revealed that the relationship between task type and focus of LREs was not significant $\chi^2 (2, N = 156) = 2.389, p > .05, w = .12$. Figure 4 is a graphic representation of the descriptive statistics for the focus of LREs.

![Figure 4. Focus of LREs](image)

**Outcome of LREs**

This category makes a distinction between different results of the collaborative dialogue. LREs here were coded as solved correctly, solved incorrectly or unresolved. Table 16 displays the descriptive statistics for the outcome of LREs by task type. Regardless of task type, correctly solved LREs constituted the highest percentage of all LREs (67.7%). While 21.5% of all LREs were unresolved, only 11.2% of LREs were incorrectly solved.
Table 16
Outcome of LREs

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Solved Correctly (n = 108)</th>
<th>Solved Incorrectly (n = 18)</th>
<th>Unresolved (n = 35)</th>
<th>Total (n = 161)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw (n = 65)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>60.0%</td>
<td>10.8%</td>
<td>29.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within outcome</td>
<td>36.1%</td>
<td>38.9%</td>
<td>54.3%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss (n = 96)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>71.9%</td>
<td>11.5%</td>
<td>16.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within outcome</td>
<td>63.9%</td>
<td>61.1%</td>
<td>45.7%</td>
<td></td>
</tr>
<tr>
<td>Total (n = 161)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>67.1%</td>
<td>11.2%</td>
<td>21.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within outcome</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

In terms of differences across task types, it seems that the percentage of correctly solved LREs was higher in the dictogloss (71.9%) than in the jigsaw (60.0%). Contrary to this pattern, the percentage of unresolved LREs was higher in the jigsaw (29.2%) than in the dictogloss (16.7%). The percentage of incorrectly solved LREs was very close across task types (jigsaw, 10.8% and dictogloss, 11.2%). Figure 5 is a graphic representation of the descriptive statistics for the outcome of LREs. A chi-square analysis revealed that the relationship between task type and outcome of LREs was not significant $\chi^2 (2, N = 161) = 3.646, p > .05, w = .15$.

Figure 5. Outcome of LREs
Verbalization in LREs

This category refers to explicitness of talk centered on LREs. The use of metalanguage was the criterion that distinguished explicit LREs from implicit LREs. Table 17 shows the descriptive statistics for the verbalization in LREs by task type. Figure 6 presents a graphic representation of the percentages of implicit and explicit LREs by task type.

Table 17

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Verbalization</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Explicit</td>
<td>Implicit</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 125)</td>
<td>(n = 36)</td>
<td>(n =161)</td>
<td></td>
</tr>
<tr>
<td>Jigsaw (n = 65)</td>
<td>80.0%</td>
<td>20.0%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within task</td>
<td>41.6%</td>
<td>36.1%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss (n = 96)</td>
<td>76.0%</td>
<td>24.0%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within task</td>
<td>58.4%</td>
<td>63.9%</td>
<td></td>
</tr>
<tr>
<td>Total (n = 161)</td>
<td>77.6%</td>
<td>22.4%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>within task</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>within verbalization</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

As shown in Table 17 and Figure 6, regardless of task type explicit LREs constituted the highest percentage of all LREs (77.5%). It seems that the percentage of implicit LREs were similar across task types (jigsaw, 20% and dictogloss, 24%). Similarly, the percentage of explicit LREs did not seem to differ depending on task type (jigsaw, 80% and dictogloss, 76%). This is confirmed by the statistical analysis. A chi-square test indicated that the relationship between task type and verbalization in the LREs was not significant $\chi^2 (1, N = 161) = .350, p > .05, w = .05$. 


Collaboration in LREs

This category refers to the extent to which participants contribute to the outcome. Whereas two-way LREs involve the participation of both members of the dyad, one-way LREs involve the participation of only one member of the dyad. Table 18 displays the descriptive statistics for the subcategories of collaboration in LREs. Figure 7 is a graphic representation of the percentages of two-way and one-way LREs by task type.

Table 18

Collaboration in LREs

<table>
<thead>
<tr>
<th>Collaboration</th>
<th>One-way ($n = 48$)</th>
<th>Two-way ($n = 113$)</th>
<th>Total ($n = 161$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw ($n = 65$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>27.7%</td>
<td>72.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within collaboration</td>
<td>37.5%</td>
<td>41.6%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss ($n = 96$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>31.3%</td>
<td>68.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within collaboration</td>
<td>62.5%</td>
<td>58.4%</td>
<td></td>
</tr>
<tr>
<td>Total ($n = 161$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>29.8%</td>
<td>70.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within collaboration</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Figure 6. Verbalization of LREs
As shown in Table 18 and Figure 7, two-way LREs constituted the highest percentage of all LREs (70.2%). The percentages of one-way and two-way LREs were very similar across task types. Whereas 72.3% of jigsaw and 68.8% dictogloss LREs were two-way, only 27.7% of jigsaw and 31.3% of dictogloss LREs were one-way. A chi-square test indicated that the relationship between task type and collaboration in LREs was not significant $\chi^2 (1, N = 161) = .234, p > .05, w = .03$.

![Figure 7. Collaboration in LREs](image)

**Source of LREs**

This category makes distinction between two types of sources that triggered LREs. Production-based LREs are those instances where learners needed help on a language-related issue while producing language. Error-based LREs are those instances where learners addressed their own or each other's output by correcting or elaborating on perceived errors. Table 19 presents the percentages of production- and error-based LREs. Figure 8 is a graphic representation based on the percentages of production and error-based LREs by task type.
As shown in Table 19, overall, the percentage of error-based LREs (52.8%) was slightly higher than production-based LREs (47.2%). When differences between tasks considered, production-based LREs were higher in the jigsaw (50.8%) than in the dictogloss (44.8%). Reverse pattern was observed in the error-based LREs. The percentage of error-based LREs was higher in the dictogloss (55.2%) than in the jigsaw (49.2%). However, a chi-square test indicated that these differences were not significant $\chi^2 (1, N = 161) = .556, p > .05, w = .06$.

Table 19

*Source of LREs*

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Production (n = 76)</th>
<th>Error (n = 85)</th>
<th>Total (n = 161)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw (n = 65)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>50.8%</td>
<td>49.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within source</td>
<td>43.4%</td>
<td>37.6%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss (n = 96)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>44.8%</td>
<td>55.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within source</td>
<td>56.6%</td>
<td>62.4%</td>
<td></td>
</tr>
<tr>
<td>Total (n = 161)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>47.2%</td>
<td>52.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within source</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Figure 8. Source of LREs*
Categories of source of LREs were divided into subcategories. Separate chi-square analyses were conducted for the relationship between task and subcategories of production and error-based LREs. Production-based LREs were recoded as output and input. Input LREs were distinguished from output LREs by the connection between these episodes and the verbal input presented in the dictogloss. Learners in input LREs made it explicit that the source of the LRE is the verbal input that learners were exposed to in the dictogloss. Output LREs were those in which learners attempted to fill a gap in their knowledge that was not triggered by previous verbal language input.

Table 20

*Production-based LREs*

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Output (n = 66)</th>
<th>Input (n = 10)</th>
<th>Total (n = 76)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw (n = 32)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>100.0%</td>
<td>.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within production</td>
<td>50.0%</td>
<td>.0%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss (n = 42)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>76.7%</td>
<td>23.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within production</td>
<td>50.0%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Total (n = 76)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within task</td>
<td>86.8%</td>
<td>13.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within production</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 20 displays the percentages of output and input LREs in the total production-based LREs. Overall, the percentage of the output LREs (86.8%) was much higher than the percentage of reconstruction LREs (13.2%). All the input LREs (100%) took place in the dictogloss, which constituted 23% of the dictogloss production LREs. On the other hand, all the production-based LREs in the jigsaw were output LREs (100%). A chi-square test showed that the relationship between task and production-based LREs were significant $\chi^2 (1, N = 76) = 8.837, p < .01, w =$
.34. This means that input LREs that was based on previous verbal input (the text read to participants) occurred significantly more in the dictogloss than in the jigsaw.

Error-based LREs were also analyzed under three additional categories. The category own was based on the episodes where learners corrected their own errors. The category other captured the episodes that learners corrected each other's errors. Finally, the category anonymous captured the episodes where learners attempted to correct or improve an aspect of language that was perceived as an error on the written draft of their story. This category was distinguished from own or other categories with their anonymous nature.

Table 21 displays the percentages of three types of error-based LREs. Overall, more error-based LREs were based on own (37.6%) and other (36.5%) than anonymous (25.9%). In the jigsaw, the percentage of own LREs (43.8%) was higher than both other (21.9%) and anonymous LREs (34.4%). In the dictogloss, the percentage of other LREs was higher than the percentages of own and anonymous LREs.

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Error-based LREs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Own (n = 32)</td>
<td>Other (n = 31)</td>
<td>Anonymous (n = 22)</td>
<td>Total (n = 85)</td>
</tr>
<tr>
<td>Jigsaw (n = 32)</td>
<td>43.8%</td>
<td>21.9%</td>
<td>34.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within task</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within error</td>
<td>43.8%</td>
<td>22.6%</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>Dictogloss (n = 53)</td>
<td>34.0%</td>
<td>45.3%</td>
<td>20.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within task</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within error</td>
<td>56.3%</td>
<td>77.4%</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>Total (n = 85)</td>
<td>37.6%</td>
<td>36.5%</td>
<td>25.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>within task</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within error</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

In terms of differences between tasks, it seems that the percentages of own (43.8%) and anonymous (34.4%) in the jigsaw were higher than the percentages of own (34.0%) and anonymous (20.8%) in dictogloss. On the other hand, the percentage of other (45.3%) in the
dictogloss was higher than the percentage of other (21.9%) in the jigsaw. A chi-square test showed that the relationship between task and error-based LREs was not significant $\chi^2 (2, N = 76) = 4.936, p > .05, w = .24$.

![Figure 9. Detailed source of LREs](image)

Post-hoc Analysis

A series of analyses were conducted to find out if learners differ with regard to factors other than the ones that were addressed in the research questions. When initial analyses showed important differences among learners on these factors, any possible effect of these factors on the number of LREs were investigated by statistical tests. For some of the analyses reported below ANOVA was used. For ANOVA, eta squared ($\eta^2$) is reported for effect size. Eta squared is the proportion of the total variance that is attributed to an effect. It is calculated as the ratio of the effect variance ($SS_{effect}$) to the total variance ($SS_{total}$). The rule of thumb for eta squared as a measure of effect size is $0.01 = \text{small effect}, 0.06 = \text{medium effect}, \text{and } 0.14 = \text{large effect}$.

Proficiency Differences

As mentioned earlier, three of the classes were reported as intermediate, whereas one class was reported as upper-intermediate by the program coordinator of the school. A statistical analysis was conducted to validate the program coordinators' report on learners' proficiency.
level. The EPT scores of the learners were submitted to an independent samples t-test to find out whether the groups that were reported as belonging to different proficiency levels were different from each other with respect to their EPT score. The Levene's test for the assumption of homogeneity of variance was not significant, $F(37) = .407, p > .05$. Therefore, although cell sizes were unequal, the error of variances of EPT scores was equal between the groups. The independent samples $t$-test revealed that the upper-intermediate group differed significantly from the intermediate group $t(37) = 3.516, p = .001, d = 1.73$. Means and standard deviations are displayed in Table 22.

This result hinted that the variable proficiency could confound the results unless it was factored into the statistical analyses. To account for this variable, two proficiency groups representing the upper-intermediate and intermediate groups were formed. Note that because of the problem of absenteeism in the administration of the EPT, the analysis could be conducted with only 39 of the 54 participants. Therefore, the decision of creating two proficiency groups was taken on the basis of the above-mentioned results as well as the report of the program coordinators on learners' proficiency.

<table>
<thead>
<tr>
<th>Proficiency Level</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper-Intermediate</td>
<td>6</td>
<td>78.1</td>
<td>6.0</td>
</tr>
<tr>
<td>Intermediate</td>
<td>33</td>
<td>65.3</td>
<td>8.5</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>67.3</td>
<td>9.3</td>
</tr>
</tbody>
</table>

In order to find out if proficiency had any effect on the number of LREs or interacted some way with task type a repeated-measures ANOVA, where the proficiency level was the grouping factor and the task type was the repeated-measures factor was conducted. The test revealed that the main effect for task type was not significant $F(1, 25) = 2.381, p > .05, \eta^2 = .09$. There was no effect for proficiency $F(1, 25) = 1.646, p > .05, \eta^2 = .06$, and no interaction between the task type and proficiency level $F(1, 25) = .000, p > .05, \eta^2 = .00$. This means that
neither task type nor proficiency had any effect on the raw number of LREs. Figure 10 is a graphic representation of the mean number of raw LRE counts as produced by proficiency levels and tasks types.

Table 23

*Number of LREs by Proficiency and Task Type*

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Proficiency</th>
<th>N</th>
<th>Sum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw</td>
<td>Intermediate</td>
<td>21</td>
<td>45</td>
<td>2.14</td>
<td>1.68</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>20</td>
<td>3.33</td>
<td>1.86</td>
</tr>
<tr>
<td></td>
<td>Within Task Total</td>
<td>27</td>
<td>65</td>
<td>2.40</td>
<td>1.76</td>
</tr>
<tr>
<td>Dictogloss</td>
<td>Intermediate</td>
<td>21</td>
<td>69</td>
<td>3.28</td>
<td>3.37</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>27</td>
<td>4.50</td>
<td>2.58</td>
</tr>
<tr>
<td></td>
<td>Within Task Total</td>
<td>27</td>
<td>96</td>
<td>3.55</td>
<td>3.21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>161</td>
<td>2.98</td>
<td>2.48</td>
</tr>
</tbody>
</table>

*Figure 10. Mean numbers of LREs by proficiency and task type*
Amount of Talk

The amount of talk learners produced by each proficiency level in each task type was analyzed in three different measures: numbers of words, e-turns and turns produced to complete the task. Note that only on-task talk was taken into consideration for this analysis. Turns including greetings and leave-takings as well as their talk on their personal matters were excluded from the final analysis.

Number of words. Each dyad's on-task talk, in terms of the number of words, was calculated using MS Word's word count feature. Table 24 displays the descriptive statistics for the number of words produced by each proficiency level in each task type.

Table 24
Number of Words by Task and Proficiency

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Proficiency</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw</td>
<td>Intermediate</td>
<td>21</td>
<td>254.05</td>
<td>112.97</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>483.33</td>
<td>200.40</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>305.00</td>
<td>164.25</td>
</tr>
<tr>
<td>Dictogloss</td>
<td>Intermediate</td>
<td>21</td>
<td>252.71</td>
<td>167.70</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>283.50</td>
<td>93.09</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>259.56</td>
<td>153.20</td>
</tr>
</tbody>
</table>

Figure 11 is a graphic representation of the mean number of words by proficiency level and tasks type. A repeated-measures ANOVA, where the proficiency level was the grouping factor and the number of words in each task type was the repeated-measures factor, revealed a main effect for task type $F(1, 25) = 5.758, p < .05, \eta^2 = .16$ and a main effect for proficiency $F(1, 25) = 6.052, p < .05, \eta^2 = .19$. There was also a significant interaction between the task type and proficiency level $F(1, 25) = 5.606, p < .05$, $\eta^2 = .15$. This means that the effect that the task type had on the number of words was different for Intermediate and Upper-intermediate. Figure 11
shows that this interaction might be due to higher number of words produced in the jigsaw \((M = 483.33)\) than the dictogloss \((M = 283.50)\) by Upper-intermediate.

![Figure 11. Mean number of words by proficiency and task](image)

**Number of e-turns.** An e-turn is a unit that takes learners' structuring of the output into account. Every time learners sent a message using the send button in MSN Messenger, they created an e-turn. Table 25 displays the descriptive statistics for the number of e-turns produced by each proficiency level on each task type.

**Table 25**

**Number of E-turns by Task and Proficiency**

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Proficiency</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw</td>
<td>Intermediate</td>
<td>21</td>
<td>51.00</td>
<td>34.10</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>75.83</td>
<td>22.96</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>56.52</td>
<td>33.26</td>
</tr>
<tr>
<td>Dictogloss</td>
<td>Intermediate</td>
<td>21</td>
<td>42.86</td>
<td>29.04</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>63.33</td>
<td>26.54</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>27</td>
<td>47.41</td>
<td>29.32</td>
</tr>
</tbody>
</table>
As shown in Table 25, learners produced more e-turns in the jigsaw ($M = 56.52$) than in the dictogloss ($M = 47.41$). In addition, regardless of task type the upper-intermediate group (jigsaw, $M = 75.83$, dictogloss, $M = 63.33$) produced more e-turns than the intermediate group (jigsaw, $M = 51.00$, dictogloss, $M = 63.33$). A repeated-measures ANOVA, where the proficiency level was the grouping factor and the task type was the repeated-measures factor, did not show any significant effect for task type $F(1, 25) = 1.194, p > .05, \eta^2 = .07$. There was no effect for proficiency $F(1, 25) = 3.568, p > .05, \eta^2 = .12$ and no interaction between task type and proficiency $F(1, 25) = .087, p > .05, \eta^2 = .00$. This means that the number of e-turns produced by the dyads did not change depending on task type or proficiency level. Figure 12 is a graphic representation of the mean number of words by proficiency levels and tasks type.

![Figure 12. Mean number of e-turns by proficiency and task](image)

**Number of turns.** A turn, following Smith (2003), was “counted each time there was a transfer of floor from one participant to the other” (p. 42). Table 26 displays the descriptive statistics for the number of turns produced by each proficiency level on each task type.
As shown in Table 26, learners produced more turns in the jigsaw ($M = 28.74$) than in the dictogloss ($M = 24.04$). In addition, regardless of task type the upper-intermediate group (jigsaw $M = 43.67$, dictogloss $M = 32.50$) produced more turns than the intermediate group jigsaw (jigsaw $M = 24.48$, dictogloss $M = 21.62$). A repeated-measures ANOVA, where the proficiency level was the grouping factor and the task type was the repeated-measures factor, did not show any significant effect for task type $F(1, 25) = 2.548, p > .05, \eta^2 = .09$. There was an effect for proficiency $F(1, 25) = 5.961, p < .05, \eta^2 = .19$ but no interaction between the task type and proficiency $F(1, 25) = .898, p > .05, \eta^2 = .03$. This means that although task type did not have any effect, proficiency level did have an effect on the number of turns dyads produced. Figure 13 is a graphic representation of the mean number of words by proficiency level and tasks type.

![Figure 13](image-url)
LREs per 100 words

Table 27 displays the descriptive statistics for LREs per 100 words by proficiency level on each task type. The results of the analyses based on the three measures of language production showed that the amount of talk learners produced changed depending on task type (based on words) and proficiency (based on words and turns). Varying degrees of language production can result in scale differences. To minimize the effect of limited comparability due to this scale differences LREs per 100 words were calculated. This measure standardized the LRE scores across tasks for the number of words produced.

Table 27
LREs per 100 words

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Proficiency</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jigsaw</td>
<td>Intermediate</td>
<td>21</td>
<td>0.92</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>0.91</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>Within Task Total</td>
<td>27</td>
<td>0.91</td>
<td>0.81</td>
</tr>
<tr>
<td>Dictogloss</td>
<td>Intermediate</td>
<td>21</td>
<td>1.30</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>Upper-Intermediate</td>
<td>6</td>
<td>1.63</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>Within Task Total</td>
<td>27</td>
<td>1.38</td>
<td>0.81</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>1.15</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Table 27 shows that the dictogloss (M = 1.38) elicited more LREs per 100 words than the jigsaw (M = 0.91). Note that because the number of words produced was taken into account by this measure, the gap in the mean number of LREs between intermediate and upper-intermediate groups in the jigsaw diminished (see Table 23 and Figure 10). As can be seen in Figure 14, the bars representing these groups paired up together.
A repeated-measures ANOVA, where the proficiency level was the grouping factor and the task type was the repeated-measures factor, revealed a significant main effect for task type \( F(1, 25) = 5.067, p < .05, \eta^2 = .17 \). There was no effect for proficiency \( F(1, 25) = .306, p > .05, \eta^2 = .01 \) and no interaction between the task type and proficiency level \( F(1, 25) = .473, p > .05, \eta^2 = .02 \). This means that task type had an effect on the amount of LREs when LREs are standardized for the number of words learners produced.

**Summary of the Findings**

Throughout the previous sections, descriptive statistics were presented and interpreted and the results of the statistical tests were reported. In this section, these results are summarized.

1. Research Questions 1 and 3 addressed the number of LREs. Research question 1 asked to what extent learners produced LREs. In order to answer this research question raw frequency of LREs were reported. In terms of raw frequency of LREs, learners produced 161 LREs in total.

2. Research Question 3 asked whether there were any task effects on the number of LREs. To answer Research Question 3, the number of LREs produced by each task type was compared to each other by a dependent samples \( t \)-test. The descriptives showed that the dictogloss elicited a higher number of LREs than the jigsaw; however, this difference just missed significance and produced a medium effect size.

3. Research Questions 2 and 4 addressed the characteristics of LREs. Research Questions 2 asked about the characteristics of LREs in general. In order to answer Research Question 2, characteristics of LREs were analyzed under five categories. Table 28 displays the most
dominant subcategories of the categories based on the descriptive statistics (percentages).
Except for the source, tasks exhibited the same characteristics. In Table 28, the column titled as total displays the overall characteristics of LREs regardless of task type. Therefore, with regard to Research Question 2, LREs in SCMC-based tasks were lexical, solved correctly, explicit, two-way and error-based.

Table 28

<table>
<thead>
<tr>
<th>Category</th>
<th>Jigsaw</th>
<th>Dictogloss</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Lexical</td>
<td>Lexical</td>
<td>Lexical</td>
</tr>
<tr>
<td>Outcome</td>
<td>Solved Correctly</td>
<td>Solved Correctly</td>
<td>Solved Correctly</td>
</tr>
<tr>
<td>Verbalization</td>
<td>Explicit</td>
<td>Explicit</td>
<td>Explicit</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Two-way</td>
<td>Two-way</td>
<td>Two-way</td>
</tr>
<tr>
<td>Source</td>
<td>Production-based</td>
<td>Error-based</td>
<td>Error-based</td>
</tr>
</tbody>
</table>

Chi-square analyses were conducted in order to provide an answer to Research Question 4 that asked if there was relationship between the characteristics of LREs and task type. These analyses based on five categories did not show any significant relationship between the individual categories and task type. However, at the level of descriptive statistics, tasks showed some differences in the distribution of subcategories. Orthographic, solved correctly, and unresolved LREs displayed at least 10% difference across the tasks. Whereas the percentages of orthographic and solved correctly LREs were higher in the dictogloss, the percentage of unresolved LREs was higher in the jigsaw. Finally, further insight were sought to answer Research Question 4 by analyzing the source category in detail. This category was analyzed by breaking production and error-based LREs into further categories. Production-based LREs was found to be significantly related to task type. The category
input seemed to be the source of this difference because whereas 27% of the total dictogloss LREs were input LREs, there were no input LREs in the jigsaw. This was expected because the type of form-focused talk that fell under this category was based on verbal input, which was provided only in the dictogloss. Although error-based LREs did not significantly related to task type, all the subcategories displayed some uneven distribution with around 10% difference between the tasks. When tasks were compared to each other, the jigsaw elicited a higher percentages of own and anonymous LREs, and the dictogloss elicited a higher percentage of other LREs.

5. Post-hoc analyses were conducted to find out if other factors could affect the amount of collaborative dialogue. The first analysis was carried out for proficiency. The result of this analysis showed that the groups that were claimed to be different by the administration of the schools were significantly different from each other. Therefore, a repeated-measures ANOVA where proficiency was the grouping factor and task type was the repeated measures factor was carried out. This analysis done by keeping proficiency level as the grouping factor did not reveal any significant differences between the tasks. In addition, although descriptive statistics showed that in both tasks Upper-intermediate produced higher number of LREs than Intermediate, proficiency did not have a statistically significant effect on the number of LREs.

6. Another post-hoc analysis was done on learners' amount of language production. Learners' amount of language production was analyzed through three measures. Descriptive statistics showed that, on all three measures, the jigsaw elicited higher amount of learner talk than the dictogloss. In terms number of words, inferential statistics revealed that the difference between the jigsaw and dictogloss was due to the fact that Upper-intermediate learners produced a significantly higher number of LREs in the jigsaw than in the dictogloss. In addition, descriptive statistics of within task differences showed that the upper-intermediate group always produced more language than the intermediate on all three measures. This difference reached the level of significance in the analysis of the number of turns. The varying amount of language production hinted scale differences. Therefore, LREs per 100 words were calculated. The tasks were compared to each other with respect to the number of LREs per 100 words. Descriptive statistics showed that the dictogloss elicited higher number
of LREs per 100 words than the jigsaw. This difference reached the significance level based on the results of a repeated-measures ANOVA.
CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter presents an interpretation of the results through reference to previous research findings of Face-to-Face (F2F) collaborative dialogue studies and task-based language teaching literature. The discussion will be centered on two headings: collaborative dialogue in Synchronous Computer-Mediated Communication (SCMC) and tasks effects on collaborative dialogue in SCMC. Discussion of each theme begins by restating the relevant research questions and the results found to answer them. The chapter also discusses the pedagogical implications of the study, and explains some of the limitations that should be considered when interpreting the findings. The chapter ends with some suggestions for further research and concluding remarks.

Collaborative Dialogue in SCMC

Research Question 1 focused on the extent to which collaborative dialogue could occur in SCMC-based tasks. Descriptive statistics were reported in Chapter 4 to address this research question. One hundred sixty one LREs showed that learners did produce collaborative dialogue in the form of LREs. In terms of LREs per 100 words, learners produced 1.26 LREs on average. However, when compared to F2F task-based studies, the amount of collaborative dialogue in this study seems to be low.

In order to provide a more specific answer to the research question about the extent of collaborative dialogue in SCMC, two F2F studies were chosen for comparison with the present study: Leeser (2004) and Swain and Lapkin (2001). Similarities in the purpose and design between the present study and Swain and Lapkin’s study (e.g., comparing jigsaw and dictogloss, using a quasi-experimental design, controlling tasks for content) motivated the selection of Swain and Lapkin's study to compare with the present study. The selection of Leeser's study was motivated by two factors: (1) similar to the present study, Leeser's study used a dictogloss to elicit LREs; (2) it provided mean numbers for LREs (unlike other studies that only provided raw frequencies).

Leeser (2004), as reviewed earlier, investigated the impact of L2 Spanish learners’ proficiency on the number, type and outcome of LREs. The number of LREs ($M = 6.58$) found in Leeser (2004), regardless of proficiency differences, was much higher than both the overall
number \( (M = 2.98) \) and the number of LREs in the dictogloss \( (M = 3.55) \) presented in this study. Swain and Lapkin’s study (2001), also reviewed earlier, in a quasi-experimental design that involved two classes, assigned each class to complete either a jigsaw or dictogloss. They hypothesized that the students who carried out the dictogloss would focus more on form than the students who carried out the jigsaw. Sixty-five students from two intact classes participated in this study. The overall number of LREs \( (M = 9.0) \) reported in Swain and Lapkin was also much higher than the overall number in this study \( (M = 2.98) \). When individual tasks were considered, the difference in the number of LREs persisted. The jigsaw in Swain and Lapkin elicited 8.8 LREs on average and the jigsaws in the present study elicited 2.4 LREs on average. The dictogloss in Swain and Lapkin elicited 9.2 on average, whereas the dictogloss tasks in the present study elicited 3.55 LREs.

At prima facie there is a considerable difference in the number of LREs between F2F and SCMC. However, a conclusion based on the comparison of the means of the raw frequencies across studies may be misleading because this study showed that the amount of learner output differed significantly depending on task type and proficiency. This might mean that learners who produced higher amount of talk had greater opportunities to produce LREs. In an attempt to minimize this scale difference, this study standardized the number of LREs for the number of words. Yet, because the above-mentioned studies only reported statistics on raw frequencies, a comparison based on standardized scores could not be made. Therefore, it may be premature to relate the difference in the amount of collaborative dialogue to any other factor such as different features of communication between SCMC and F2F communication. The difference in the number of LREs could simply be the outcome of the gap in the amount of talk triggered by the different communication environments within limited time. In fact, there is evidence in the SCMC literature indicating that a decision based on raw frequencies would be ungrounded because the amount of language production in these two types of communication differs. Lai and Zhao (2006) compared SCMC and F2F communication with respect to learners noticing of language forms. One finding their study revealed was that overall amount of talk was higher in F2F communication than in SCMC. It is not counterintuitive to argue that this may be the general pattern across communication modes. Possibly, the typing that SCMC requires increases
production costs and decreases learners' language production. According to Clark and Brennan (1991):

The act of producing an utterance itself has a cost that varies from medium to medium. It takes little effort (for most of us) to speak or gesture, more effort to type on a computer keyboard or typewriter, and the most effort (for many of us, anyway) to write by hand (pp. 142-143).

A direct comparison between the above-cited studies and this study is difficult because of a second factor that seems to vary across studies. The instructions given to the learners in Swain and Lapkin's (2001) and Leeser's study (2004) were somewhat directing learners' attention to form overtly. Swain and Lapkin's (2001) instructions asked the learners to talk about a target language form explicitly: "Discuss among yourselves the grammatical decisions you take, and think above all, about the reflexive verbs that you have just looked at" (p. 115). Leeser asked learners to "say aloud everything that they were writing down and reflect aloud as to why they chose certain forms over others" (p.63). In this study, on the other hand (see Appendix 5A and 5B) instructions, with the purpose of keeping learners' focus on meaning, did not overtly encourage learners to talk about their language choices. When comparing the amount of collaborative dialogue between the F2F studies and the present study, ignoring the scale difference for a moment, the differences in instructions may have played a role in the seemingly existing gap. Instructions in the F2F studies that asked learners to discuss their choices might have increased the amount of LREs inadvertently.

Research Question 2 focused on the characteristics of LREs in general. The purpose of this research question was to find out the specific categorical labels (e.g., solved correctly, lexical, etc.) that would best describe the LREs in SCMC-based chat interactions. To address this research question, descriptive statistics (i.e., percentages) were reported for five categories: focus, outcome, collaboration, verbalization and source. Based on these descriptive statistics, LREs were in general lexical. This finding is at odds with the research findings of some F2F studies but in line with the findings of at least one study (Williams, 2001). As reviewed in Chapter 2, most F2F studies (Kowal & Swain, 1994; Leeser, 2004; Malmqvist, 2005; Storch, 1998, 2001; Swain & Lapkin, 1998) reported that grammatical or form LREs was the category that constituted the greatest proportion of all the LREs. This category in general was followed by
the lexical category. The difference in instructions could explain these inconsistent findings as well. The instructions in the studies such as Swain and Lapkin (2001) may have increased learners' attention and, therefore, LREs on morphosyntactic items. On the other hand, because the instructions in the present study did not use explicit instructions to stimulate metatalk, the findings could be taken as evidence of learners' tendency towards focusing on lexical rather than grammatical aspects of language when their attention is not manipulated by task instructions. This finding was also supported by the findings of the pilot study. In the methodological field test, where orthographic LREs were not coded, the lexical category was the most frequent category, constituting 56% of all LREs. Interestingly, in the pilot study as well, the instructions did not ask learners to discuss about their decisions about their linguistic choices. Williams (2001), similar to this study, reported that learners almost exclusively (80% across all four proficiency levels) focused on vocabulary. A major difference between the present study and Williams's study was that the LREs in Williams's study occurred during learner-instructor interactions, whereas in the present study the LREs occurred during learner-learner interactions. Despite this difference in context between the studies, as Williams argued, it was a persistent pattern across different contexts that learners choose to focus on comparatively more salient features such as lexical items and ignore less salient morphosyntactic features. VanPatten's (2004, 2007) input processing (IP) model suggests a reason why lexical units become more salient for learners. It is because learners that are trying to get meaning from input tend to focus primarily on content words and lexical forms because words are the principal source of referential meaning (VanPatten, 2001).

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The degree of difficulty of some of the vocabulary items presented by the tasks could also be responsible for this greater lexical focus. It may be that the use of certain vocabulary items proved highly useful for the task completion and because these vocabulary items were perceived as difficult by learners more discussion on lexis than any other aspect of language was stimulated. According to Loschky and Bley-Vroman (1993), there can be three types of relationships between structures and tasks: task-natural, task-useful, and task-essential. When forms are task-natural, their use is not forced by the task. The use of task-useful forms is enforced through the presentation of obligatory contexts. Tasks are completed with little effort if task-useful forms are utilized. Finally, if a task-essential form is not used, the task cannot be
completed. Designing tasks with task-essential forms should be the target for Loschky and Bley-Vroman (1993). It could be possible to extend Loschky and Bley-Vroman’s arguments about grammatical structures to the vocabulary items in the present study. Certain vocabulary items (be it triggered by the pictures or texts) could have been qualified to be task-useful because using them would allow learners to finish the task with little effort. The reason why these vocabulary items stimulated LREs could be the low frequency of these items. Most of the learners had difficulty with the meaning of some words such as stool, fishmonger, fishing pole, jar and jam. According to Bauman and Kullegen's (1995) wordlist, these words are not in the most common 2000 words in English. If low frequency words are part of the reason why learners showed a tendency toward lexical rather than grammatical aspects of language, then, in order to maximize the chances for focusing on grammatical aspects, it might be a good idea to control tasks for infrequent words.

Most of the LREs (67.1%) were correctly solved. This finding complements the findings of the F2F studies. Many F2F studies reported that between 60% and 75% of the total LREs were solved correctly (Leeser, 2004; Malmqvist, 2005; Storch, 2001). Although learners concluded most LREs correctly, they also left a considerable number of LREs unresolved. Only a very small number of LREs were incorrectly solved. Be it incorrect or unresolved, any outcome other than correct answers could be taken as missed opportunities. Swain (1998) recommends that teachers’ should be available during collaborative activities in order to make sure that the correct answers to the problems are given. Online communication offers some advantages in comparison to F2F communication in this respect. Although a teacher in a F2F classroom cannot monitor many groups at the same time, in an online SCMC environment monitoring many groups through a single computer screen is possible. When the software programs that were used in the present study is considered, it is possible for a teacher to add herself/himself to learners’ MSN Messenger chat windows and monitor and correct, in case undesirable solutions are produced by learners.

Pedagogically, correctly solved LREs seem to be the only desirable outcome. From a research perspective, other LRE outcome types, especially incorrectly solved LREs can be of value as well. For example, certain incorrectly used LREs can be used to test the effectiveness of LREs. To date, LREs have been tested through tailor-made tests that were based on the analysis
of the content of the LREs (Loewen, 2005; Swain & Lapkin, 1998, 2001; Williams, 2001). However, evidence obtained from this type of tests was not strong enough to claim for a direct benefit of LREs on acquisition. Two reasons for this were (1) the lack of a pre-test, which did not allow researchers to know for certain what the learners knew prior to the LRE (Loewen & Philp, 2006) and (2) the post-tests were administered two to seven days after the LREs, which made it impossible to make a direct link between an LRE and a post-test item. An alternative way of testing LREs can be looking at the relationship between an incorrectly solved LRE and learners answers to the post-test items created based on those incorrectly solved LREs. Some studies (Donato, 1994; Swain, 1998) demonstrated that learners tended to remember incorrect solutions. If a researcher can show that a uniquely incorrectly solved LRE is retained by the learner even after two-three days later, he can more easily argue that the source of that incorrect answer for the post-test item is the LRE because it is unlikely that some other source can provide the same erroneous form as the learners'. The LRE on the fishing pole in Example 1 illustrates how learners can produce creatively constructed incorrect outcomes. Following this LRE, a post-test item that would ask for the meaning of fishing pole could be created. In the case that Learner A or Learner B reproduces the same outcome reached during the LRE (fisher pipe), the researcher can claim a direct effect for the LRE on learners' knowledge on language.

Example 1: Incorrectly solved LRE

A: what does olta means
B: who thinks get fish
B: from the sea
A: go on
A: fish pipe mı??
   (is it fish pipe?)
B: pot
B: olabilir mi
   (can it be pot?)
B: pipe
B: daha mantıklı
   (pipe makes more sense, though)
A: pipe çubuk demek ya
   (pipe means stick)
B: ya tamam öle kullanalım
   (nevermind, let's go for that)
A: tmm peki
   (ok)
A: fisher pipe
A: :D:D:D
B: he gets fish by fisher pipe
A: anyways go on telling your pictures to me

In terms of verbalization, it has been found that most of the LREs (77.6%) were addressed explicitly. Except for the occasions when learners corrected their own mistakes or provided recasts for each other's mistakes, they always explicitly indicated that the focus of their talk was the linguistic code rather than meaning. Although the use of metalanguage was by no means a necessary qualifying feature for explicit LREs, in most of the episodes learners used metalanguage. There are different positions with regard to the explicit information or the use of metalanguage in focus on form in SLA. According to Swain (1998), the LREs consisting of the instances when learners reflect on their own or others' output can be taken as evidence for the metalinguistic function of output, which she considers to be an indication of language learning in progress. Others see metalanguage as a non-essential factor in language learning (Krashen, 1994). While Swain and Krashen represent two positions that stay on the two extreme ends of the discussion, there are others arguing for a non-direct, limited role for explicit information. VanPatten (2000) argues that metatalk could help link a form with a meaning, and it increases the chances that the form, when encountered in the subsequent input, is processed to be a part of learners' intake. According to Ellis (1997), explicit information can facilitate some processes that are beneficial for language learning: (a) monitoring, (b) noticing, and (c) noticing the gap. Perhaps one way of evaluating the acquisitional value of metalanguage is considering its benefit in relation to the target form at hand (Doughty & Williams, 1998c; Long, 2007; Williams & Evans, 1998). It is possible that the explicitness when providing information about the meaning of words and the explicitness when justifying the use of the definite article as opposed the indefinite article bring different consequences. An explicitly expressed relationship between a lexical item and its Turkish equivalent could provide a shortcut way to make initial form-meaning connections, which could be strengthened with the further input learners may encounter. Metalanguage here can benefit from a one-to-one match between the unknown form/meaning with the known form/meaning. However, a form governed by a rule that is so difficult even to explain in metalinguistic terms may not benefit from the explicitness to the same extent. At best, the learner would retain the explanation and maybe, in case the LREs is solved
correctly, the solution to the problem, but understanding the rule behind the form and applying it to new situations of spontaneous speech would remain difficult. Westney (1994) gives two examples of such rules: the article system and dative alternation in English.

In terms of collaboration, the majority of LREs were resolved with the contribution of both learners. If an LRE was one-way, it meant that it was identified and resolved by only one learner without any contribution from the partner. This indicates that either this was an unsuccessful attempt to achieve a joint attention focus or the attempt excluded any help from the partner as in self-corrections. In either case, the researcher does not have any evidence showing that the problem has been noticed by the partner. In two-way LREs, the partner recognizes the problem and partially contributes to the solution of the problem or his/her feedback becomes the solution itself. This distinction (one-way/two-way) reveals an important characteristic about the quality of LREs. Although it is often taken for granted that LREs are collaborative, this study has shown that one out of three LREs was not collaborative because it was concluded by the individual effort of only one learner. Considering the overall agreement in the field of SLA on the claim that some kind of attention is necessary for input to become intake (Robinson, 1995; Schmidt, 1990; Tomlin & Villa, 1994), Storch (2001) argued that "LREs with little or minimal interaction may mean that one of the learners is not consciously attending to language" (p. 115).

The LREs in general were more error-based (52.8%) than production-based (47.2%); however, the gap was small. Production-based LREs were those instances where learners needed help on a language-related issue while producing language. Error-based LREs were those instances where learners addressed their own or each other's errors. Production and error-based LREs can stimulate different types of noticing. LREs based on errors could trigger the type of noticing that has come to be known as noticing the gap (Schmidt & Frota, 1986). According to noticing the gap principle, learners may notice some inconsistencies between what they have observed in the input and what they themselves typically produce on the basis of their interlanguage. Noticing the gap may require restructuring of established interlanguage forms and the formation of new form-meaning connections (Williams, 2005). LREs that were triggered by production problems, on the other hand, is more of an outcome of the type of noticing that Swain (2005) mentioned as noticing the hole. In noticing the hole, learners come to be aware of what they are not able to express even though what they want to express is clear in their mind. In other
words, different from the noticing the gap, learners have not yet developed an interlanguage form to fall back on. Williams (2005) argues that noticing the hole and noticing the gap present some crucial differences in terms storage requirements and cognitive processing. Noticing the gap requires a cognitive comparison. The learner should compare the incoming information with the information s/he kept in long-term memory or the information traces left in short-term memory. In other words, the learner should pay attention to both input and output within a specified cognitive window (Doughty, 2001). Noticing the hole does not require any comparison to older representations and, thus, a simpler process.

**Task Effects on Collaborative Dialogue in SCMC**

Research Question 3 focused on the effect of task type on the amount of LREs. It was found that LREs were more frequent in the dictogloss than in the jigsaw. This difference just missed statistical significance in raw frequency of LREs, however, when LREs were controlled for language production, the difference reached statistical significance. Swain and Lapkin (2001) hypothesized that the dictogloss task would elicit more attention to form and, therefore, a greater number of LREs. However, the results of their study did not support their claim. The results of the present study do support Swain and Lapkin’s claim. Some differences in task implementation may have caused this inconsistency between the findings of the present study and Swain and Lapkin’s. The first difference in task implementation was that, while Swain and Lapkin gave mini-lessons to learners prior to the doing of the actual tasks, the present study did not. Swain and Lapkin argued that these mini-lessons, in which explicit information about the target structure, French adjective agreement, was given, could have increased the students’ attention to form regardless of task type. The exclusion of mini-lessons from the present study may have resulted in the elimination of their so-called attention-enhancing effect. The second difference in task implementation was that, whereas in Swain and Lapkin learners were instructed to discuss their choices explicitly, in the present study they were not encouraged to talk about the formal aspects of language. This was a major difference between these two studies. These instructions, just like mini-lessons, might have increased the learners' attention to form in such a way as to outweigh the differences, if any, between the tasks.

The above arguments could explain why the results of Swain and Lapkin's (2001) study differed from the present study. What remains to be explained, however, are some possible
reasons that may have caused the difference in the number of LREs between the tasks. One possible reason for the greater attention to form in the dictogloss as measured by the number of LREs could be the presentation of verbal input that only the dictogloss task included. Swain and Lapkin (2001) hypothesized that because the dictogloss task presented content in the form of a native speaker text, it could trigger more attention to form than the jigsaw task that presented content in the form of visual input (i.e., pictures). Even though Swain and Lapkin's study did not produce supportive evidence, their prediction could still be a powerful argument to explain the results of the current study. It is possible that the verbal input together with the instructions that asked learners to reconstruct it lead to greater attention to form. Learners compared two sources of information to rewrite the listening passage: their notes they took in the beginning of the task and what they could retrieve (both on form and on content) from their memory. The parts of interaction where they compared the information they gained through these two sources were likely to create LREs because whenever there was a disagreement about the correct version of the input, learners felt the need to make metalinguistic comments about each other’s version or correct the version they thought incorrect. On the other hand, the visual input in the jigsaw did not create similar conditions to direct learners' attention to form.

An additional finding supported this argument. Production LREs, in which learners' attention was turned to form because of a linguistic problem that was related to their upcoming language production, were further broken down into two categories: input and output LREs. Input LREs captured the instances where learners' production-based LREs were triggered by previous input. Input LREs were identified based on the content of the metalanguage learners used. The analysis of input LREs indicated that 23.3% of the dictogloss production LREs that constituted 44.8% of all the dictogloss LREs was triggered by input. There were no input-LREs in the jigsaw because no verbal input was provided. This additional analysis brought evidence for the argument that the input presented before the dictogloss prompted a number of LREs that could account for the difference between the tasks in the number of LREs.

Tasks may have differed in the way they affected how learners allocated their attentional resources. From an information processing perspective, learners must prioritize where they need to direct their attention (Skehan, 1998; VanPatten, 1990). If a task requires a lot of attention to its content, there will be less attention available for its form. VanPatten's study (1990) showed
that learners, especially at the beginning stages of language learning, could not focus on both form and meaning at the same time. In his study, 202 students of Spanish listened to a three-minute passage in four conditions. In the first condition, learners listened for content only. In the other conditions, learners listened to the text while noting one of these three linguistic foci: a lexical item, the definite article \textit{la}, the verb morpheme \textit{-n}. Each time the learners heard their assigned item, they were asked to put a check mark on a piece of paper. The learners were also asked to pay attention to meaning because their comprehension would be evaluated afterwards. The learners' comprehension was checked through free written recalls. It was found that listening for content produced the highest scores. It was followed by the content-plus-lexical-item and the content-plus-definite-article groups. The lowest score was produced by the content-plus-verb-morpheme group. Van Patten's prediction was confirmed. Whereas conscious attention to language units with referential meaning was the least intrusive, conscious attention to units with little communicative load was the most intrusive with comprehension. A partial replication of VanPatten (1990) by Greensdale, Bouden and Sanz (1999) that used written texts and reading instead of listening produced a similar pattern of results.

Skehan (1998) drawing on the research by VanPatten holds that it is essential for humans to prioritize where to pay attention because they have limited information-processing capacity. According to his view, a focus on form and a focus on meaning compete with each other. "If a task demands a lot of attention to its content (because it is complex or puzzling, or someone else possesses information you don't have), there will be less attention available to be devoted to its language" (Skehan & Foster, 2001, p. 189). Applying this perspective to the tasks used in this study, it is possible to argue that the jigsaw task required more attention to its content because the story that learners were asked to produce in a written format had to be constructed in an interactive manner. Because learners needed each other's puzzle pieces (i.e, description of the pictures) to complete the story they paid greater attention to the message content than the message form. In contrast, in the dictogloss, the story was read to all learners. Therefore, when the interaction with dyad members started, each learner had an idea about the plot of the story. After sharing their notes with each other, they had additional attentional resources to allocate to focus on form.
Research Question 4 focused on whether task type had an effect on the characteristics of LREs. The purpose of this question was to find out whether learners, depending on the task type, tended to produce LREs of belonging to specific category. Chi-square analyses based on five categories did not show any significant relationship between the individual categories and task type. However, at the level of descriptive statistics, tasks showed some differences in the distribution of subcategories. Orthographic, solved correctly, and unresolved LREs displayed at least 10% difference across the tasks. There were higher percentages of orthographic and solved correctly LREs in the dictogloss, and higher percentage of unresolved LREs in the jigsaw. In addition, analysis done by breaking the category source further into categories showed that production LREs (input or output) were significantly related to task type. Although, there was no significant relationship between error-based LREs and task type, the percentages of the own and anonymous LREs were greater in the jigsaw than the dictogloss. In addition, the percentage of the other LREs was greater in the dictogloss than the jigsaw. It seems that these findings based on descriptive statistics hint at a pattern that can be explained by two task features mentioned before.

The first feature is the greater content/meaning focus in the jigsaw task. In the jigsaw, especially in the first ten minutes of the task, the primary focus of learners was to exchange the pieces of information that each party possessed, and, in turn, to construct the plot of the story. During this time, engaging in form-focused discussions was the secondary concern, as learners could not afford focusing on both content/meaning and form at the same time. Therefore, even when learners did produce language-related discussions they tended to choose the least intrusive way with their primary concern. Unresolved LREs could illustrate this point. Unresolved LREs were constituted by the episodes where learners abandon to deal with the LRE. One important reason, among others such as lack of knowledge, for unresolved LREs was the lack of interest to solve it. Learners did not pursue LREs until they resolve it because they could not afford to sidestep from communication for such a long time. LREs or other similar coding categories such as focus on form episodes have been considered as "brief ‘time-outs’ from the effort to communicate" (Ellis, Loewen & Basturkmen, 2006, p. 136). Similarly, the finding that there were more own LREs in the jigsaw can also be explained by learners' prioritized focus. The own LREs tended to take shorter in turns than the other LREs. The own LREs involved the message
that contained the error and the correction of one's own utterance, which usually took one turn (possibly two e-turns). The other LREs that involved other corrections could involve more turns, because, in addition to the error and correction turns, they could also include an optional response to correction turn where learners indicate that they noticed the correction.

The input presented in the dictogloss task seemed to be related to the quality of LREs. As discussed above, one significant difference between the tasks was the number of input LREs. In addition to this, the percentage of orthographic LREs was higher in the dictogloss than in the jigsaw. Both of these results could relate to the listening passage that only the dictogloss contained. The content of learners' metalanguage indicated that 27% of all production LREs was triggered by the words, phrases, or grammatical points prompted by the input from the listening passage. What is more, most of the input LREs, which were the outcome of the listening passage, were orthographic in focus. It could be that when listened to the passage learners kept some words or phrases in their short-term memory or jotted down notes of them, however, when they were asked to type them on the screen they realized that they did not know how to spell them.

Finally, in this study, unlike in previous F2F studies, proficiency was not a factor that significantly affected the amount of attention to form. Many studies (Kowal & Swain, 1994, 1997; Lapkin, Swain & Smith, 2002; Leeser, 2004; Williams, 1999) have pointed out that high proficiency learners tended to create more situations to deal with language itself. Not only the number of LREs, but also the quality and the outcome of the episodes are affected by proficiency. Learners engaged in longer collaborative dialogues when both learners are of high proficiency (Lapkin, Swain & Smith, 2002), and their chances to solve linguistic problems correctly are the highest (Leeser, 2004). In this study, although descriptive statistics showed that in both tasks Upper-intermediate produced higher number of LREs than Intermediate, proficiency did not have a statistically significant effect on the number of LREs. Standardizing LREs for the number of words diminished the difference between the proficiency levels in the jigsaw. In the dictogloss, the descriptive statistics showed that Upper-intermediate produced more LREs per 100 words. However, this difference did not bring any significant effect for proficiency. The limitation in the way proficiency was operationalized in this study should be restated here. As it was explained in detail in Chapter 3, the EPT was used to measure learners' proficiency in this study. However, because not all the learners that participated in the treatment...
task sessions had a proficiency score; statistical tests based on numeric values (e.g., ANCOVA) could not be conducted to analyze proficiency effects. Instead, a decision of creating two groups of proficiency was taken on the basis of the extrapolation of the available scores to absent learners and the report of the program coordinators. Because of this limitation, the inconsistent findings of the present study and the previous studies in relation to the effects of proficiency should be evaluated with caution. Future research should investigate proficiency effects with careful operationalizations of proficiency and should pay attention to any possible moderating variables such as the amount of talk.

**Pedagogical Implications**

There is an agreement in the field of SLA that focus on linguistic form in addition to focus on meaning is beneficial for language acquisition (Doughty & Williams, 1998a; Long, 1992, 1996; Long & Robinson, 1998; Norris & Ortega, 2000; Swain, 1995, 2005). Warschauer (1997), using a different terminology, expressed that Computer-Mediated Communication (CMC) had the potential to stimulate both a focus on form and a focus on meaning. More specifically, he emphasized the hybrid nature of Computer-Mediated Communication stating that CMC carried the features of both interaction and reflection. Interaction had been attributed to oral communication and reflection had been attributed to written communication throughout the history. He claimed that CMC could be a cognitive amplifier that could welcome both interaction and reflection. Thus, learners participating in SCMC based activities could take the advantage of two things: interacting with other learners in a continuous flow of messages, and reflecting on what they write before giving the final shape to their messages. The present study brought evidence that indeed SCMC could be a source of reflection. Learners using SCMC as a tool to complete tasks just as in oral interactions were able to turn their attention on language itself. This finding informs language teachers and program developers that SCMC-based tasks not only help learners use language to accomplish goal-oriented tasks with a focus on meaning, but also promote attention on and analysis of language form that will aid their language development.

The present study also found some differences in the amount of attention to form between the task types. This finding should be understood within a broader perspective of task-based education where research is motivated to inform language teachers as to what to expect from each task type. It has been found that the dictogloss promises greater collaborative dialogue in an
online environment than the jigsaw, whereas the jigsaw triggered greater amount of language production. Following Skehan's (1998) distinction between fluency and accuracy, it maybe a good idea to use these tasks in accordance with the specific purpose of the class. The dictogloss where learners are pushed to pay attention to linguistic constituents of a well-formed passage could be more suitable for accuracy purposes. On the other hand, it could be possible to use the jigsaw as a fluency task. This task, where interaction is a requirement to achieve a convergent goal and where learners have to hold, request, and supply information related to task completion could offer better opportunities to use language under pressure.

Language teachers can benefit from the results of this study in another way. While the findings have shown that the dictogloss was overall a better tool for a focus on form purpose, the findings have also pointed to two task features that could be responsible for this greater focus on form tendency. Swain (2005) claimed that tasks that involve writing promote collaborative dialogue. In addition to this task feature, it has been shown that verbal input presented in the beginning of the task could also increase the likelihood of learners' engaging in collaborative dialogue offering them chances to notice the mismatches between their interlanguage output and target language input forms. Previous studies also showed that input presented at the outset of a task that was followed by output practice created favorable results in terms of acquisition. For example, Izumi (2002) investigated, in a pre-test-post-test control group design, whether output, visual input enhancement or the combination of both promoted the noticing and acquisition of English relative clauses. Output was operationalized through a task where learners reconstructed a text given to them to read. Forty-seven adult learners of English were divided into one control and four experimental groups. All groups of learners first had a chance to read the text. Then two output groups were asked to reconstruct the text, whereas the other two groups were asked to answer comprehension questions. Later, one of the output groups was again shown the original text and asked to reconstruct the text for a second time. The other output group received the text in a highlighted format and was asked to reconstruct the text again. One of the non-output groups was shown the highlighted text and instructed to answer the extension questions again. The second non-output group was shown the original text again and asked to answer extension questions. The results showed that learners that engaged in output-input treatment outperformed those exposed to the same input but only answered extension questions. Although the findings of
Izumi's study and the present study advocate for the benefit of the pedagogical intervention that involves the presentation of verbal input that is followed by an output practice; further research is certainly needed to confirm these results.

**Limitations**

Researchers and educators should be aware of some key limitations in interpreting the implications mentioned above. The present study involves a quasi-experiment. The results obtained through a quasi-experiment, due to the lack of random assignment, cannot indicate a cause-and-effect relationship between variables as confidently as a true experiment would do. Therefore, a quasi-experiment would normally have less internal validity than a true experiment. In addition, this limited internal validity decreases the confidence to generalize from the results. However, given the fact that the present study was conducted with four intact classes, it has achieved to approximate the real-life situation of the phenomena under study. Therefore, it can be argued that the results are ecologically valid for the EFL classes that are similar in nature to the classes studied in this study.

Moreover, the present study could not adopt a random sampling procedure. The lack of random sampling decreases external validity and thus, the confidence to generalize the results to the population. Another limitation that may affect the generalizability was the number of subjects. Absenteeism was a major factor that determined the current subject size of the study. Although the final number of subjects was adequate to carry out the statistical analyses described in Chapter 4, larger sample sizes would bring more powerful findings that could be more easily generalized to population. Furthermore, the study was conducted with Intermediate and Upper-intermediate learners of English in a foreign language context in Istanbul, Turkey. The results are most valid for these learners and for those who are similar to these learners. Other contexts (e.g., ESL) or proficiency levels could produce different results.

In addition, the study involves the identification and coding of certain instances of learner-learner interaction. Inevitably, these tasks are prone to the subjective evaluation of the raters, and thus, they can present reliability related problems. The study has presented clear definitions for the coding categories and employed multiple raters to promote reliability in the identification and coding of LREs. It is evident that studies where LREs and characteristics of LREs are defined in a different way than the present study can produce different results.
Similarly, the operationalizations of the constructs such as proficiency, dictogloss and jigsaw were peculiar to the present study. As discussed in the previous section, the operationalization of proficiency presented a limitation because not all the learners that participated in the treatment tasks had a proficiency score. Likewise, the jigsaw in the presented study was designed following a special format. The information gap was created through visual input (i.e., pictures). Although this was similar to the task used in Swain and Lapkin (2001), implementing jigsaw with visual input is by no means a requirement. For example, Pica, Kang and Sauro (2006) used jigsaw tasks that were based on an information gap prompted by written verbal input. It is possible that different operationalizations of tasks and proficiency bring different results than the ones presented in this study.

The current study used MSN Messenger and CoWord program in order to implement the tasks. The use of these two software programs required keeping two separate program windows open on the computer screen. In order to use both windows, learners had to navigate back and forth between these program windows. One can argue that this practice was not user-friendly and attention consuming. It is even possible to claim that learners' focus on form behavior and their collaborative dialogue were affected by this attention-consuming feature of the task implementation. Software programs that could incorporate both chat and collaborative writing features would facilitate the implementation of tasks saving learners from clicking and scrolling burden.

Another limitation of the study was that it did not include any objective quantitative measure of learners' typing speed. The study tried to address this limitation by collecting data through a background questionnaire that asked learners' self-report on their typing speed based on a 5-point Likert scale item. However, measures that are more objective, such as asking them to perform some typing under time constraints could have been used to quantify learners typing speed. Learners' familiarity with computers and their typing speed are important because it could be that learners who have better typing skills are likely to produce more language.

**Suggestions for Future Research**

It is essential to make it clear that this study has used only one coding category LREs (collaborative dialogue) to quantify and determine the characteristics of learners' attention to form. Although this category encompasses a wide range of conversational mechanisms (e.g,
recasts, and self-correction) that could be claimed to be promoting SLA, there are other coding categories that cover the instances where learners' focus on form behavior is more implicit. Many SCMC studies (Blake, 2000; Blake & Zyzik, 2003; de la Fuente, 2003; Kitade, 2000; Lee, 2002; Pellettieri, 2000; Smith, 2003; Tudini, 2003) coded and counted moves such as confirmation check, clarification requests and comprehension checks to account for negotiation of meaning with the theoretical motivation that negotiation would make input comprehensible and direct learners attention to problematic parts of the language (Long, 1996, Long & Robinson, 1998). Further research can include both categories to account for learners attention to form by carefully operationalizing what each category covers. Other than coding the instances of learners' language, the way learners use the computer environment can be observed to measure their attention to form. For example, Smith and Gorsuch (2004) asked 10 English learners to interact in dyads on a task about teaching a topic to a classmate. What was interesting about this study was that learners' scrolling and typing activity through their chat screen and their self-directed speech were recorded in addition to chatscripts of learners,' talk. Smith and Gorsuch suggested that learners' scrolling behavior and verbalization (i.e., private speech) could be further indications of the language forms to which learners pay attention.

More research is definitely needed that will compare the amount of collaborative dialogue between the modalities (i.e., F2F and SCMC). There is a hint in the literature that within a limited period language production is higher in F2F communication than in SCMC (Lai & Zhao (2006). Therefore, in order to determine any possible difference is not due to the amount of production, the comparisons should be made through measures that take the amount of production into account. The findings of future research can shed light on the question whether the number of opportunities to focus on form is comparable or different between modalities. A second step to take after determining the amount of focus on form could be to compare the modalities in terms of the effectiveness of collaborative dialogue. Some researchers pointed out that SCMC, in comparison to F2F communication, provides learners with more processing time because of the reduced speed of communication (Warschauer, 1997; Smith, 2003a). If this is true, it could be that regardless of the amount of collaborative dialogue, the collaborative dialogue in SCMC can translate into greater gains in terms of SLA.
The present study did not use any tests to measure the effectiveness of LREs. Swain (1998) encouraged researchers to test “what learners actually do, not what the researcher assumes instructions and task demands will lead learner to focus on” (p. 80). Up to date, tailor-made tests based on the content of specific LREs were used to assess the effectiveness of LREs. However, these tests were not without problems (Loewen & Philp, 2006). Often, they lacked pre-tests, and the post-tests were not immediate. Future research should certainly test the effectiveness of LREs by paying more attention to fix some of the weakness of tailor-made tests so far. An alternative way that could produce a qualitatively convincing link between LREs and post-test items is to focus on learners' errors. As discussed above, some learner errors display some characteristics that are so unique that when repeated in post-tests could be an indication of the transfer of knowledge from the LRE to the post-test item.

Finally, in this study paying attention to the verbal input with the purpose of reconstructing it have been shown as part of the reason why learners' focus more on form than meaning in the dictogloss. This claim should be further investigated in experiments with tasks that are matched in every other task feature except for this feature. The verbal input in this task was presented through auditory channel, however, other studies also used, with different purposes, (e.g., Izumi, 2002) verbal input in a written format. Both types of input could be further investigated paying attention to modality differences and using measures sensitive to how much attention to form they prompt. Furthermore, as mentioned above, the operationalization of the jigsaw in this study was limited with visual input. Other jigsaw tasks that provide learners with verbal input (i.e., written or oral) should be tested against the jigsaw used in this study.

**Conclusion**

The general purpose of the study was to investigate the amount and characteristics of collaborative dialogue in SCMC and find out whether task type had any effect on them. It has been argued that the theoretical importance of collaborative dialogue stem from the consensus in SLA research on that a focus on form in addition to a focus on meaning is beneficial for language acquisition. More specifically, collaborative dialogue, in line with the focus on form perspective (Doughty & Williams, 1998b), captures a variety of ways learners to draw each other's attention to form in response to needs arise during the completion of a meaningful task. As the output hypothesis (Swain, 1985, 1995, 2005) predicts collaborative dialogue, in addition
to drawing learners' attention to form, provides opportunities to test hypotheses about how the language works and increases metalinguistic awareness.

The study has presented some important findings. It has shown that LREs do occur during task-based SCMC. However, the frequency of this type of language behavior, at first glance, seems to be low in comparison to F2F studies. Because at the current stage there are too many variables that are not constant across studies, the study called for further research to find out whether any specific features of communication (F2F or SCMC) are responsible for the gap in the amount of collaborative dialogue between the modes of communication. Furthermore, the study has shown that the collaborative dialogues learners produce during SCMC-based tasks are mostly lexical, correctly solved, explicit, two-way and production based.

The study has also provided some empirical support for Swain and Lapkin’s (2001) claim by showing that the dictogloss task elicited a higher number of LREs than the jigsaw task. Further research should pay closer attention to the following differences between task types with respect to the nature of LREs: dictogloss LREs were characterized by solved correctly and orthographic LREs with more other LREs and input LREs, whereas jigsaw LREs characterized by unresolved LREs with more own and anonymous LREs. The differences between tasks have been explained in reference to Skehan's (1998) framework that was based on limited attentional capacity. It has been argued that because the jigsaw requires a great deal of attention to its content, learners fail to pay much attention to form. Even when learners do engage in collaborative dialogue, they tend to prefer ways that are the least intrusive with their meaning/content focus. The dictogloss, on the other hand, leaves some spare attentional resources that can be utilized to focus on problematic forms and produce collaborative dialogue.

The findings indicate that task-based SCMC interaction offers potential for learners to benefit from cognitive processes, such as noticing the gap, hypothesis testing, and to build metalinguistic awareness. Furthermore, the dictogloss, in comparison to the jigsaw, potentially offers more chances to benefit from these functions. Because no testing has been done as to measure the actual effectiveness of the LREs, this quantitative difference should be regarded with caution, and further research should evaluate whether this quantitative difference translates into greater benefits in terms of SLA.
APPENDIX A
Background Questionnaire (English Version)

1. Name: 
2. Nickname: 
3. Sex: female ___ male ___
4. Age: ___________________
5. Years of High School English ________________________________
6. What was your average grade in English in previous courses? ____________
7. Have you ever studied in another country? ____________ If yes, which
country ________________________________
8. Have you ever studied another foreign language? ______ If yes, which
language, when and for how long ________________________________
9. Do you have a computer at home? 
_____________________________________
10. Do you use a computer? ________________________________
11. How often do you use a computer? ________________________________
12. Do you feel comfortable using a computer? ________________________________
13. How would you rate your typing skills? Circle one number. 1 2 3 4 5
14. Do you prepare your homework at computer? ____________ If yes, how
often ________________________________
15. Do you use instant messaging (chat) programs, such ICQ, MSN Messenger or
others? _____
If yes, how often (a) every day (b) several times a week (c) rarely (d) never
Name the programs you use ________________________________
15. Have you ever used a collaborative editing program such as MoonEdit?
_____________________________________

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16. Ad Soyad:
17. Kod Ad (Nickname):
18. Cinsiyet: kadın ___ erkek ___
19. Yas: __________________
20. Lisede gördüğün İngilizce Eğitimi (yıl olarak) ________________________
21. Daha önce aldığın İngilizce derslerindeki ortalama notun? ____________________
22. Daha önce yabancı bir ülkede eğitim aldın mı? ____________ cevabin evetse, hangi ülke? ____________ kaç yil? ______________________
24. Evinde bilgisayar var mı? _____________________________
25. Bilgisayar kullanıyor musun? ________________________________
26. Ne sıklıkla bilgisayar kullanıyorsun? _____________________________
27. Bilgisayar becerini yeterli buluyorsun? _____________________________
28. Bilgisayarda yazma becerini nasıl değerlendirirsin? Asağıdaki rakamlardan birini işaretle 1 2 3 4 5
29. Bilgisayarda odev hazırlıyor musun? ____________ cevabin evetse, ne sıklıkla? _____________________________
30. ICQ, MSN Messenger, Google Talk vb. sohbet (chat) programlarını kullanıyor musun? ______ cevabin evetse hangi sıklıkla? ___(a) her gün ___(b) haftada bir veya iki kez ___(c) nadiren ___(d) hiç bir zaman
Kullandığın sohbet programlarını yazarsın? _____________________________
15. Hic MoonEdit gibi birden fazla kişiyle bir metin yazıp, yazdığınız metinde beraberce düzeltmeler yapabildiğiniz bir program kullandın mı?
APPENDIX B

Picture Story for Training Jigsaw
Training Jigsaw Forms

Form A

Form B
Jigsaw A Forms

Form A

Form B
Jigsaw B Forms

Form A

Form B
APPENDIX C

Training Dictogloss

The planet Earth is only a tiny part of an endless universe where many secrets lie hidden, waiting to be uncovered. Over the last twenty years, enormous amounts of money have been invested in space exploration. This policy has been criticized by some section of society. Certainly, it is impossible to halt the march of progress. Nevertheless, one sometimes wonders whether our planet is not being neglected in this mad blind race for space.
Early in the morning one day, seven o’clock, a little boy went fishing and he was dreaming about the fish he was going to catch. He sat on the bank of the river and he caught three fish. At noon at twelve thirty, he made lunch and he cooked one fish over a fire. Later, he took the other two fish to the fishmonger and he sold them. The fishmonger gave him two bucks for the two fish. He went home in the afternoon and said to his dad, “I got two fish I sold them and I got the money”. His dad said, “Wow let’s go to the sporting store. I can get you a volleyball or a fishing pole what do you want?” But the boy said, “I don’t wanna have a volleyball and I don’t wanna have a fishing pole. I wanna have a gun.” His dad was unhappy with this idea and said “A gun?”
One bright sunny morning, mama made some jam. When she put the jam bottle up on top of the cupboard Junior was watching and he was pretty curious. Mother got ready to go the store and Junior asked, “Where are you going?” She said, “I am going to the post office”. Junior waited until his mother was gone and checked to see what his father was doing. His father was reading a newspaper. He looked at the jar but he was not tall enough to reach there. He took a chair and put it by the cupboard, and he got a stool and he put it on top of the chair. And he dangerously climbed on top of the chair and the stool to reach the jam. But before he could reach the jam he fell down. He started crying; his father came in and asked, “What are you doing here?”
APPENDIX D
Similarity between the Picture stories

Instructions: Please rate the level of similarity between the two sets of pictures. Please do these ratings only with respect to the information asked in the relevant section. The questions before the rating part in each section are there to help you with your rating. Therefore an exact response is not required for these questions.

Section I. In each picture

Do the characters change their location?
Do they interact with people?
Do they interact with objects?
Do some characters appear in one scene and disappear in another?

Based on the answers you gave to the above questions, how would you rate the level of similarity between these tasks?

Not similar 1 2 3 4 5 Similar

Section II. In each picture story...

How many characters are there?
How many similar characters are there in each task?
With how many characters do the main characters interact?
With how many objects do the main characters interact?

Based on the answers you gave to the above questions, how would you rate the level of similarity between these tasks?

Not similar 1 2 3 4 5 Similar

Section III In each picture story...

How many different scenes are there?
Are there any flashbacks?
Is the story linear?
Do events follow each other?

Based on your response to the above questions, how would you rate the level of similarity between these tasks?

Not similar 1 2 3 4 5 Similar
APPENDIX E

Instructions for Jigsaws

English Version
Now you are going to work in groups of two and you will write a story based on a series of pictures. There will be 8 pictures in total and one of you will have 4 of the pictures and the other will have the other 4 pictures. Your ultimate aim is to combine these pictures and write a story. You will do this in two stages.

In the first stage, you will only use MSN Messenger. For 10 minutes, without trying to look at each other’s pictures, you will tell your partner what your pictures contain. You will discuss how you would order them correctly and tell each other the outline of the story behind these pictures.

At the end of 10 minutes, it will be announced that you can use CoWord program along with MSN Messenger. You will have 25 minutes to write the story you have discussed in the first stage. At this stage, you can use MSN Messenger to talk to your friend, and CoWord to write the story. Please do not address to your friend from CoWord use MSN for this purpose.

Remember at the end of the 35 minutes, you must be able to submit only one finished story. Now, you can just click on your partners’ nickname and start chatting.

Turkish Version

İlk asamada, sadece MSN Messenger programını kullanacaksiniz. 10 dakika boyunca birbirlerininiz resimlerine bakmadan, kendi resimlerinizde neler olduğunu ve resmin neyi anlattığını arkadasınız ileteceksiniz. Beraberce resimleri nasıl sıraya koyacağınızi tartışacak ve de doğru sıraya konuldugunda resimlerin nasıl bir hikaye anlattığını bulmaya çalışacaksınız.


Unutmayın, 35 dakika sonunda bana ayrı ayrı degil tek bir tamamlanmış hikaye vereceksiniz. Simdi, arkadaşınızın kod ismini tiklayıp konusmayla baslayabilirsiniz.
**Instructions for Dictogloss**

*English Version*

Now you are going to work in groups of two and you will reconstruct a story that you will listen first.

Your ultimate aim in this task is to write a story with your partner and submit it to me at the end of 35 minutes. The story should be close to the original story as much as possible. You will listen to a story twice, and in the second time, you can take notes - words or phrases to remember the story- onto a paper or a computer file.

You will complete the task in two stages. In the first stage, you will only use MSN Messenger. At this stage, you can talk to your friend about the notes you have taken when listening and try to find out whether your notes are different or similar. Then, try to sketch the outline of the story.

At the end of 10 minutes, it will be announced that you can use CoWord program along with MSN Messenger. You will have 25 minutes to write the story you have discussed in the first stage. At this stage you can use MSN Messenger to talk to your friend, and CoWord to write the story. Please do not address to your friend from CoWord, use MSN for this purpose.

Remember at the end of the 35 minutes, you must be able to submit only one finished story.

Now, you can just click on your partners’ nickname and start chatting.

*Turkish Version*

Birazdan ikili gruplara halinde iki kez dinleyeceginiz bir hikayeyi yazmaya calisacaksiniz. Bu aktivitedeki nihai amaciniz arkadasinizla beraberce 35 dakika icerisinde bir hikaye yazmak ve bu hikayeyi bana teslim etmek. Hikaye mumkun oldugunca aslina (dinlediginiz metne) yakindir olmali.


Unutmayin, 35 dakika sonunda bana ayri ayri degil tek bir tamamlanmis hikaye vereceksiniz. Simdi, arkadasinizin kod ismini tiklayip konusmaya baslayabilirsiniz.
APPENDIX F
Human Subjects Committee Approval Letter

Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673   FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 5/4/2006

To:
Yucel Yilmaz
312 Pennell Circle #6
Tallahassee, FL 32310

Dept.: MULTILINGUAL MULTICULTURAL EDUCATION

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Collaborative Dialogue During Tasks in Synchronous Computer-Mediated Communication

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be Exempt per 45 CFR § 46.101(b) 2. and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If the project has not been completed by 5/2/2007 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

Cc: Nancy Eleni Pappamitsos
HSC No. 2006.0386
APPENDIX H
Informed Consent Form

LETTER OF INFORMED CONSENT:

Dear student:

I am a graduate student under the direction of Dr. Eleni Pappamihiel in the Department of Middle and Secondary Education of the College of Education at Florida State University. I am doing a research study about learners’ discourse in synchronous computer-mediated communication and I would like you to take part in this study.

Your participation will involve completing a background questionnaire, taking a language proficiency test, participating in three computer-mediated sessions, completing follow-up tasks and interviews. In computer-mediated sessions, you will be asked to go to a computer lab as a class and carry out two language tasks consecutively in each session. Later on, I will ask some of you to complete an additional oral task and to participate in an interview. The proficiency test will take an hour. Each computer lab session will take one and a half hours. The additional task and the interview will take 30 minutes each. The oral tasks and interviews will be tape-recorded and your interactions on the computer will be saved to a computer file.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no consequences. The results of the research study may be published, but your name will not be used. There are no foreseeable risks or discomforts if you agree to participate in this study. The information obtained during the course of the study will remain confidential to the extent allowed by law.

Although there may be no direct benefit to you, the possible benefit of your participation is that you will have an extra practice opportunity to use the language that you have been learning.

If you have any questions concerning the study, please call me at (850) 345 8307 or e-mail me at yilmazyucel@gmail.com. You may reach Dr. Pappamihiel at 644-2129 or by e-mail pappamih@cce.fsu.edu. If you have any questions about your rights as a subject in this research, you may contact the FSU Human Subjects Committee at the Office of Research at 644-8673 or by e-mail (phsrc@mail.fsu.edu).

Sincerely,
Yucel Yilmaz

I agree to participate in this study. I understand that I will be tape recorded, I will fill out a questionnaire, take a proficiency test and my interactions on the computer will be saved in a computer file by the researcher. The questionnaire forms and tapes will be kept by the researcher in a locked filing cabinet at researcher’s house. The computer file will be protected with a password in the researcher’s personal computer. I understand that only the researcher and his professors will have access to these data and that they will be destroyed by 31 May 2015.

Name: ____________________________ (signature) ____________________________ (date)
REFERENCES


BIOGRAPHICAL SKETCH

Yucel Yilmaz was born on September 20, 1977 in Istanbul, Turkey. He earned a B.A. degree in American Culture and Literature from Istanbul University in 2000. He started his graduate studies at the University of Pennsylvania, where he received his M.S. Ed. in TESOL in 2003. In 2004, he began to pursue a doctoral degree in Multilingual/Multicultural Education at the Florida State University. He taught English in Turkey to middle school and college students for three years. He also worked as an ESOL specialist in a K-12 school in the US. His research interests involve task-based language teaching, interactional feedback, focus on form through computer-mediated communication and morphological processing.