

Effects of Different Types of Tasks on Junior ELT Students'
Use of Communication Strategies in Computer-Mediated Communication

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ABSTRACT

Effects of Different Types of Tasks on Junior ELT Students'

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This thesis investigates the effects of different task types on the use of communication strategies (CSs) in computer-mediated communication (CMC) and the attitudes of students to using computers for communication and writing.

The use of communication strategies in three different communicative task types: (a) jigsaw (b) decision-making and (c) opinion-exchange were examined, based on and adapted from Dörnyei and Scott's (1997) and Smith's (2003b) taxonomies.

36 junior ELT students participated in on-line chat sessions for six weeks using Yahoo! Messenger. Before the chat sessions the participants were given Warschauer's (1996b) attitude questionnaire which also collected demographic information about participants and their computer familiarity. The participants were given the same questionnaire at the end of the last chat session. The data was analyzed using descriptive statistics, one-way repeated measures analysis of variance (ANOVA), one-sample and paired-sample t-tests procedures. Qualitative data about participants' experiences and feelings about the synchronous CMC to cross-validate the findings of the attitude questionnaire was collected through a post-session questionnaire which was adapted from Wang (1993).

The results showed that students used a wide variety of communication strategies during synchronous CMC, and task type affected the frequency and type of communication strategy used. It was also found that participants had positive attitudes towards using computers for communication and writing. The study provided evidence that synchronous CMC medium gave learners the opportunity to interact and negotiate meaning in the target language by providing them with a text-based communicative setting in which communication strategy use was promoted.

KISA ÖZET

Bilgisayar-Aracılı İletişim Ortamında Farklı Görev Türlerinin İngilizce Öğretmenliği
Üçüncü Sınıf Öğrencilerinin İletişim Stratejileri Kullanımı Üzerindeki Etkileri

Nur Eser Altun

Bu tez, bilgisayar-aracılı iletişim ortamındaki farklı görev türlerinin iletişim stratejilerinin kullanımı üzerindeki etkilerini ve öğrencilerin bilgisayarların iletişim ve yazma amacı ile kullanılmasına karşı olan tutumlarını araştırmayı amaçlamaktadır.

İletişim stratejileri Dörnyei ve Scott'ın (1997) ve Smith'in (2003b) sınıflandırılmalarına dayanılarak ve üç farklı iletişimsel görev türü: (a) bulmaca, (b) karar-verme, ve (c) fikir-alışverişi kullanılarak incelenmiştir.

36 İngilizce öğretmenliği üçüncü sınıf öğrencisi Yahoo! Messenger kullanarak altı hafta boyunca çevrimiçi sohbet oturumlarına katılmıştır. Çevrimiçi sohbet oturumlarından önce katılımcılara bilgisayarların kullanımına karşı olan tutumlarını ölçmek için Warschauer'ın (1996b) anketi verilmiştir. Bu anket aynı zamanda katılımcılar hakkında demografik bilgi ve katılımcıların bilgisayar bilgileriyle ilgili bilgi toplamıştır. Katılımcılara aynı anket son çevrimiçi sohbet oturumundan sonra tekrar verilmiştir. Veriler, tanımlayıcı istatistik, tek-yönlü tekrarlanan ölçümlü varyans ve iki eş arasındaki farkın önemlilik testi yöntemleriyle incelenmiştir. Katılımcıların çevrimiçi sohbet oturumları hakkındaki deneyimleri ve düşünceleri ile ilgili nitel veriler Warshauer'ın tutum anketini çaprazlama doğrulama

amacı ile oturumlar sonrası uygulanan ve Wang (1993)'ten uyarlanan oturum sonrası-anketi ile toplanmıştır.

Çalışmanın sonucunda eşzamanlı bilgisayar-aracılı iletişim ortamında öğrencilerin çok çeşitli iletişim stratejilerini kullandıkları ve görev türünün iletişim stratejilerinin kullanımının türünü ve sıklığını etkilediği bulunmuştur. Ayrıca öğrencilerin bilgisayarların iletişim ve yazma amaçlı kullanımına karşı olumlu tutumlara sahip oldukları görülmüştür. Sonuç olarak, eşzamanlı bilgisayar-aracılı iletişim ortamının yazı-odaklı bir iletişim ortamı sağlayarak öğrencilerin iletişim stratejisi kullanımını teşvik ettiği ve hedef dilde anlaşmaya yönelik etkileşime olanak kıldığı bulunmuştur.

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CHAPTER 1

INTRODUCTION

Since the introduction of the term “communicative competence”, which was appropriately defined as the knowledge of vocabulary and skill in using the sociolinguistic and discoursal conventions of a given language by Hymes (1971), and the increase in international communication with globalization, the idea that language is for communication has gained importance over the idea that language is for grammar.

In addition to this, researchers who emphasized the importance of interaction in terms of second-language acquisition (SLA) suggested that learners acquire language through the process of learning how to communicate in it (Hatch, 1978). Long (1981) argued that input, which is made comprehensible by means of the conversational adjustments that occur when there is a comprehension problem, is crucial for second language acquisition, and this view has been regarded as the “Interaction Hypothesis”.

The conversational adjustments mentioned by Long (1981) require strategic competence”, one of the four components of communicative competence which was identified by Canale and Swain (1980) as a result of their study with children learning French as a second language (L2). According to Canale and Swain (1980), “communicative competence” was made up of grammatical competence- the knowledge of what is grammatically correct in a language- sociolinguistic competence- the knowledge of what is socially acceptable in a language -discourse competence- the knowledge of how to combine grammatical forms and meanings to achieve coherence in form and in meaning, and strategic competence- the knowledge

of how to use verbal and non-verbal communication strategies to communicate intended meaning when communication breakdowns occur.

Later, Kramsch (1986) suggested that communicative competence must include ability to express, interpret and negotiate meaning. Kramsch (1986) argued that interpersonal interaction is a fundamental requirement of second language acquisition and thus the development of interactional competence is necessary in language instruction. According to Kramsch, language teachers should provide natural communicative situations for their students in which they can interact with the teacher or fellow students by turn-taking, giving feedback to speakers, asking for clarification, and starting and ending conversations.

In order to facilitate communicative competence, opportunities for interpersonal interaction and meaning negotiation in the target language (TL), (considered to be the fundamental requirements of SLA according to the interactionist perspectives in the field of second language acquisition research (SLAR)) have been sought for and several studies have been done. Research generally shows that in traditional L2 classrooms, language learners have a limited chance for interaction and they are rarely pushed for negotiation of meaning (Lyster & Ranta, 1997; Van den Branden, 1997).

On the other hand, research on computer-mediated communication (CMC) has revealed that CMC can provide learners with a medium for meaningful interaction and facilitate negotiation of meaning by providing language learners with opportunities for authentic communication with native speakers or non-native speakers of the target language. This can be achieved through human interaction among language learners in the same classroom or from different continents (Blake,

2000; Toyoda and Harrison, 2002). Furthermore, by providing learners with motivating, content rich and meaning centered tasks which facilitate interaction among learners, the use of CMC provides language learners with an alternative opportunity to practice their second language.

Research has been done on several aspects of SLA and CMC. Some of these are about learner participation patterns and the quantity and quality of learner production (Chun, 1994; Kelm, 1992; Kern, 1995; Warschauer, 1996a). There is substantial research on the use of CSs in face-to-face interaction and the role of task type on those interactions. There is also recent research about negotiation of meaning in CMC environment (Blake, 2000; Pellettieri, 2000; Smith; 2003a). However, little research has addressed the effects of different task types on the use of communication strategies (CSs) among non-native versus non-native learner negotiated interaction in synchronous CMC (Smith, 2003b). In the present study, the effects of different task types on the use of CSs in synchronous CMC was sought to address this gap.

1.1. Purpose of the Study

This study aims to investigate the effects of different task types on junior ELT students' use of CSs in synchronous CMC. Tasks are defined as goal oriented activities that require the active participation of the participants by Pica, Kanagy and Falodun (1993), and in line with Pica, Kanagy and Falodun's (1993) definition, in the present study tasks are operationally defined as activities which require the participants to exchange information purposefully by negotiating meaning in order to reach an outcome.

Although much research has been done on CSs in face-to-face communication and although there is some research on CMC that deals with participation structures, the quality of language and second and foreign language learner output and productivity, interactional features of CMC discourse have not been investigated widely. Although SLA research emphasizes the importance of interactional features resulting from negotiation of meaning such as the importance of communication strategy (CS) use in promoting language learning, the use of CSs in synchronous CMC environment is under-explored. There are only three studies that deal with the learner use of CSs in CMC (Chun, 1994; Lee, 2002, Smith, 2003b). Chun (1994) focuses on the number and functional types of student output with an emphasis on students' communicative language use. Lee (2002) focuses on the analysis of the CSs in CMC environment, and Smith (2003b) focuses on the relationship between the task type (jigsaw and decision-making) and the use of CSs in CMC environment. These studies do not focus on the type of CSs used by advanced-level speakers of English employed during three different task types (jigsaw, decision-making and opinion-exchange) and the attitudes of the learners to the use of computers for writing and communication.

The investigation of CSs in synchronous CMC is as important as the investigation of the same construct in face-to-face communication. First, this medium can be an alternative environment for language learners to improve and practice their target-language (TL) with several benefits like decreasing anxiety, offering a greater chance of participation to each learner, increasing the amount and quality of learner output, and providing meaning negotiation among learners which can improve foreign language learning. Second, as synchronous CMC shares several similar characteristics with face-to-face communication (Blake, 2000; Murray, 2000;

Yates, 1996), the benefits that are obtained through CMC can be transferred to face-to-face communication.

In addition to this, foreign language learners' attitudes to synchronous CMC is sought for in the present study, as one of the main alleged benefits of CMC is enhancing student motivation by providing students with a less threatening medium of communication (Kelm, 1992; Warschauer, 1996b).

1.2. Communication Strategies (CSs) and Foreign Language Learning

It has been widely accepted that communication is the essential purpose of language and thus communicative competence is the most important language competence (Campbell & Wales, 1970, Munby, 1978, Searle, 1969). When foreign language learners attempt to communicate in a target language (TL), most of them use expressions that are not as natural as those of the native speakers of that TL when they wish to convey the same meaning. Selinker (1972) argued that second language learners have a separate linguistic system based on the observable output which result from a learner's attempted production of a TL norm and that this linguistic system is called "interlanguage" (IL). Since compared to native speakers' linguistic competence, language learners' interlanguage is deficient by definition; learners of a TL often face problems when they wish to express a particular communicative intention in the TL, especially when they lack the necessary resources to convey their intended meaning. The problems that the learners face are usually solved via CSs which play a vital role in communicating intended meaning when communication breakdowns occur. Therefore, CSs are important aspects of communicative competence which is facilitated through interpersonal interaction and meaning negotiation in the target language.

On the other hand, in the Input Hypothesis, Krashen (1982) argued that input must be comprehensible to be able to be acquired. However, Long (1983) claimed that although comprehensible input is needed for language acquisition, it is not sufficient and he argued that it is the input that is shaped by the interaction among the learners that allows learners to directly acquire the language. By arguing that it was the modifications made by the learners during the conversations that make input comprehensible, Long (1983) signaled the importance of modification devices, or communication strategies used by the learners to make themselves understood by their interlocutors.

Swain (1985), in his “Comprehensible Output Hypothesis”, also argued that comprehensible input is insufficient for successful SLA, and signaled the importance of comprehensible output in language learning. According to Swain (1985) comprehensible output is important as it provides language learners with the contextualized and meaningful use of the TL so that the learners can test their hypothesis about the TL. He also suggested that the learners should be given opportunities to produce comprehensible output. In terms of producing comprehensible output Swain and Lapkin (1995) later argued that learners produce comprehensible output when they notice a linguistic problem in their existing interlanguage and when they consciously reprocess their performance in order to produce comprehensible output which in turn helps language learning.

Long (1996) argued that positive or negative feedback that is given to the participants during interaction may also benefit language learners. Positive feedback includes the modified input provided to the language learners and negative feedback is the information about what is unacceptable in the target language. Negative feedback could include either overt error correction or negotiation for meaning in the

form of clarification requests, confirmation checks, repetitions, or attempts to repair communication breakdowns. According to Pica (1994), negotiation occurs when learners and their interlocutors modify and restructure their interaction once difficulties in message comprehensibility are perceived or experienced. Pica (1994) argued that meaning negotiation helps learners make input comprehensible. Long (1996) argued that negotiation of meaning helps comprehension and the negative feedback obtained during negotiation fosters language development. He argued that conditions for language learning can be enhanced by having language learners negotiate meaning with either native speakers or non-native speakers under Interaction Hypothesis.

CSs play an important role in TL learning as they serve to make input comprehensible and they help language learning by enabling learners to keep the conversation going and thus providing learners with more opportunities to be exposed to input. Therefore, CSs have an important role in language learning as they maximize language learning opportunities by providing more opportunities to the comprehension of input which is thought to help language learning.

Since the role of interaction and meaning negotiation are important for language learning, the devices that learners use (CSs) to modify their language in order to make their messages comprehensible to their interlocutors are also important. Using CSs allows language learners to try out different vocabulary and language structures in order to modify input or output resulting in modified interaction which facilitates mutual understanding. In order for language learners to use modification devices when conveying their messages, they need to have strategic competence. This requires the use of verbal and non-verbal communication strategies to communicate intended meaning when communication breakdowns occur.

However, learners of a TL often have difficulties in expressing their intended meanings in the TL due to the underdevelopment of strategic competence which concerns the ability to express oneself in the face of difficulties or limited language knowledge. Dörnyei and Thurrell (1991) argued that strategic competence is the most neglected component of communicative competence. They argued that since strategic competence refers to the ability to express one's meaning especially when problems arise during communication, and since strategic competence involves CSs to be used when communication is difficult, it is crucial for foreign language learners as its absence may result in an inability to convey communicative intent. They concluded that learners should be given strategy training in a communicative syllabus and language classrooms should be made more communicative and should foster communicative language use. They argued that strategic competence is activated when learners wish to convey messages which their linguistic resources do not allow them to express successfully.

This argument is in line with the interactional perspective which supports the use of communication tasks that provide learners and their interlocutors with opportunities to exchange information and communicate ideas and which enable learners to convey messages beyond their linguistic capabilities. Communicative tasks are defined as goal oriented activities that require the active participation of the participants by Pica, Kanagy and Falodun (1993). They argue that communicative tasks require language learners to carry out a task with the aim of reaching an outcome by taking active roles. The use of communication tasks is argued to be one of the most effective ways to facilitate language learning as they foster interaction among language learners (Pica, Kanagy & Falodun, 1993). Therefore, as Tarone and Yule (1989) argued, in order to activate language learners' strategic competence,

communicative tasks that aim to provide learners with some information to convey, a listener who requires that information, and an awareness that an information gap exists can be used.

In conclusion, by adopting the view that communication strategies are used to clarify meaning when problems occur in communication for meaning negotiation, which in turn has been found to be important for language learning for the learner's conversational skills in the TL, the present study investigates the use of communication strategies in an interaction environment –a synchronous CMC environment- different than a face-to-face one. In English as a foreign language (EFL) learning settings such as Turkey, it is often difficult to provide students with classroom activities that give them opportunities to use English communicatively. Thus, this study investigates whether synchronous CMC environment provides language learners with enough opportunities to negotiate meaning and use CSs. This study also investigates the effects of different task types on the use of CSs in synchronous CMC and seeks answers to the following research questions:

1. What communication strategies do junior ELT students use in synchronous computer-mediated communication?
2. Do the frequency and type of communication strategies differ across different types of tasks?
3. What are the attitudes of junior ELT students' to the use of computers for communication and writing and do their attitudes change after the implementation of the study?

CHAPTER 2

REVIEW OF LITERATURE

2.1. Introduction

One of the problems that language teachers often face is making language learners speak and communicate in the TL. It is a well-known fact that many students with an excellent level of grammatical proficiency experience difficulties in using the TL to express their communicative intentions. Various suggestions and activities have been put forward to make language learners speak with each other, some of them have been successful and some of them have not. There has been a growing interest in the use of technology in language learning classrooms in the past few decades, and with the advancement of the Internet, an alternative tool has emerged to promote the use of written and oral language to make language learners communicate in an authentic way. In particular, computer-mediated communication (CMC) has drawn teachers' attention owing to its potential use for interactive and collaborative language learning (Warschauer, 1997), and more specifically, synchronous communication tools have been one of the interest areas since the late 1980s. Several researchers have argued the benefits of synchronous CMC in terms of increasing student communication in the TL by slowing down the communication process and allowing students to reflect and compose utterance like messages (Kelm, 1992; Kern, 1995).

In the forthcoming chapter, first the communication strategies; their definition, underlying criteria, main classifications and the research done about them will be covered, and then the definition of computer-mediated communication (CMC), its various genres, its similarities with spoken communication, its use in language learning classrooms, related research on CMC, its benefits to language

learning contexts, research on CMC and CSs and the role of task type in CSs research will be discussed.

2.2. Communication Strategies

2.2.1. Definitions of Communication Strategies

Selinker (1972) was the first one who mentioned communication strategies in his paper “Interlanguage” to account for certain classes of errors which were made by learners in an attempt to express their meanings in spontaneous speech resulting from an inadequate target language system. Later, Varadi (1983) argued that communication starts with language learners’ desire to communicate a meaning in the TL. When learners face a problem in conveying their intended meaning because of their insufficient linguistic abilities in the TL, they use various strategies to maximize their potential for communicating in L2 and these strategies are called communication strategies.

The definition of CSs, their identification and classification are tied to the adopted theoretical perspectives. Although there are some parts that the definitions below share, there are also some parts that they differ in terms of the theoretical perspectives that the researchers adopted.

Tarone (1980), adopting an interactional approach, focused on the interaction between the speakers in her definition of CSs and defined CSs as “mutual attempts of two interlocutors to agree on a meaning in situations where requisite meaning structures are not shared” (p. 288).

According to Corder (1983), CSs are related to the relationship between ends and means. That is, learners sometimes wish to convey messages which their linguistic resources do not permit them to express successfully. According to Corder, when learners find themselves in such situations they have two choices, either to

tailor their messages to the resources they have, or to attempt to increase their resources by one means or another in order to realize their communicative intentions. In their first choice, when learners adjust their ends to their means, they use *message adjustment strategies*, in other words *risk avoidance strategies*. In their second choice, when learners try to realize their communicative intentions, they use *resource expansion strategies*. According to Corder, successful communication strategy use may eventually lead to language learning and in language teaching resource expansion strategies should be encouraged.

Tarone, Cohen and Dumas (1983) attempted to provide a framework for CSs and they defined communication strategy use as “a systematic attempt by the learner to express or decode meaning in the target language, in situations where the appropriate systematic target language rules have not been performed” (p. 5)

Faerch and Kasper (1983) investigated the communicative aspects of foreign language communication according to a psycholinguistic approach. They located CSs in a general model of speech production and defined CSs as follows:

“communication strategies are potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular communicative goal.” (p.36)

Poulisse et, al., (1984) defined CSs as “.... strategies which a language user employs in order to achieve his intended meaning on becoming aware of problems arising during the planning phase of an utterance due to his own linguistic shortcomings.” (p. 72)

This section intended to provide an overview of some of the most important definitions of CSs suggested in the literature. Although these definitions share the idea that CSs are used when the requisite linguistic resources are not enough to

convey the speakers' intended communicative meaning, there is no universally accepted definition of CSs. On the other hand, three defining criteria of CSs could be found as a result of a review of the literature on CSs. These criteria will be discussed in the section below.

2.2.2. Basic Criteria Underlying Communication Strategies

There have been various attempts to define and identify the basic criteria underlying CSs. A review of the literature showed that there are three basic criteria underlying CSs. In this section, different points of view about these three basic criteria- “problem-orientedness”, “consciousness” and “intentionality” will be discussed.

Problem-orientedness

According to Faerch and Kasper (1984), problem-orientedness is the primary criterion that distinguishes CSs from other verbal plans. That is, learners use CSs to solve problems and to overcome difficulties. Faerch and Kasper explain that L2 users often come across situations where their communicative goal cannot be realized on the basis of their existing, accessible and applicable linguistic resources. In these situations the language user faces a communication problem and solves this problem by activating a particular strategic plan.

However, it is also argued that learners may use CSs when they do not experience a problem but want to be sure that their interlocutors have understood them (Bialystok ,1990). Bialystok termed problem-orientedness as “problematicity” and argued that CSs are used only when the speakers perceive that there is a problem that may interrupt the communication.

Although they accept problem-orientedness as a primary defining criterion of CSs, Dörnyei and Scott (1997) argue that problem-orientedness is not specific enough since the types of problems that are faced during communication by the learners are not clear. According to Dörnyei and Scott (1997), the problems that are faced by language learners during the course of communication cannot be restricted only by the language deficits in the interlanguages of the learners, and there are three identifiable types of communication problems. The first type of communication problem results from *own-performance problems* – when the speakers realize that they have said something wrong, the second type of communication problem results from *other-performance related problems* – when the interlocutor's speech is found as problematic either because it is thought to be incorrect or because of a lack of a full understanding, and the third type of communication problem results from *processing time-pressure*, due to the interlocutors' need for time to process and plan L2 speech.

Consciousness

The second defining criterion of CSs is consciousness. This criterion has also been criticized by several researchers (Bialystok and Kellerman, 1987; Bialystok 1990; Dörnyei and Scott, 1997).

Faerch and Kasper (1983) argued that if the learners are not conscious of the difficulty in conveying their meanings they cannot experience a problem in reaching their goal. Therefore, Faerch and Kasper (1983) claimed that when learners have a problem they experience it consciously.

Later, Faerch and Kasper (1983a) argued that defining CSs as conscious plans is problematic and they classified plans as,

- 1.) plans which are always consciously employed
- 2.) plans which are never consciously employed

- 3.) plans which by some language users and /or in some situations are consciously used and plans which by other language users and/or in other situations are used unconsciously.

Faerch and Kasper (1983a) referred to plans as “potentially conscious plans” and they defined CSs as “potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular goal.” (p.36)

Bialystok and Kellerman (1987) argued that the degree of consciousness may vary from learner to learner. Bialystok (1990) also argued that it is difficult to decide whether learners use CSs consciously or not and argued that learners’ conscious reflections of their choices are needed in order to determine whether CSs are used consciously.

In order to clarify the notion of consciousness, Dörnyei and Scott (1997) focused on three aspects of consciousness as *consciousness as awareness of the problem*, *consciousness as intentionality* and *consciousness as awareness of strategic language use*.

The first aspect, *consciousness as awareness of the problem*, discusses the idea that not every mistake made by speakers can be accepted as a communication strategy. Dörnyei and Scott (1997) argued that CSs differ from mistakes or errors as they are used consciously in order to solve a communication problem by the speaker who is aware of his or her strategy use.

The *Consciousness as intentionality* aspect discusses the idea that the intentional use of CSs separates them from other verbal behaviors that are systematically related to the problems that the speaker is aware of. When the speakers employ CSs, they are aware of the difficulty faced and use CSs with a conscious decision.

The third aspect, *consciousness as awareness of strategic language use*, claims that if the speakers are not aware of using a strategy in order to solve a communication problem those instances cannot be accepted as CSs. Dörnyei and Scott (1997) gave the example of literal translation in relation to this aspect and they argued that literal translation is a regular part of the L2 production process and cannot be counted as cases of CSs use unless it is consciously used in order to overcome a problem in communication.

The above arguments in the literature of CSs show that consciousness is certainly one of the criteria in defining CSs and this criterion shows that not every problem-solving strategy can be accepted as a communication strategy. Dörnyei and Scott (1997) also argued that a problem-solving device can only be accepted as a communication strategy if it is conscious in the three aspects of consciousness as awareness of the problem, consciousness as intentionality and consciousness as awareness of strategic language use.

Intentionality

The third criterion underlying the definition of CSs is intentionality defined by Faerch and Kasper (1983) as the main goal of using CSs in order to deliver the intended meaning effectively in communication. Bialystok (1990) also argued that owing to intentionality, language learners are equipped with the options to select the most appropriate communication strategy (CS) among the types of many CSs. Bialystok noted that if the use of CSs is intentional it should be systematically selected. But she questioned the intentionality of CSs by pointing out the difficulty of assessing the strategies selected for specific situations. Therefore, the notion of intentionality is questionable according to her.

The three defining criteria of CSs that were discussed in the literature were dealt with in this section. The next section will discuss the main classification of communication strategies.

2.2.3. *Main Classifications of Communication Strategies*

Although SLA researchers mostly agree on the kinds of CSs that are observable in communication, they differ in the way they classify this observable strategic behavior. In this section the main classifications of CSs will be discussed.

In literature there are two broad theoretical approaches that deal with CSs. The first one has a linguistic basis which can be found in the works of Tarone, 1977, 1980; Faerch & Kasper 1983, 1984; Paribakht, 1985 and Dörnyei & Scott, 1997. The second one has a cognitive or process basis which can be found in the works of Bialystok, 1990 and Poullisse, 1990. The former of these approaches is called the *linguistic approach* and the latter is called the *cognitive approach*. Within the linguistic approach Tarone's (1977, 1980) *interactional approach* and Faerch and Kasper's (1983) *psycholinguistic approach* are the most influential ones. According to the *interactional approach*, CSs are devices of conversation maintenance and they belong to the study of learner interaction. On the other hand, according to the *psycholinguistic approach*, CSs are cognitive processes involved in the use of L2 reception and production and use of CSs are reflections of those cognitive processes.

Although these are the most important classifications of CSs within the linguistic approach, there are other studies done on CSs both from the linguistic and the cognitive approaches. Yule and Tarone (1997) categorized these studies on CSs in two main categories as the "Pros" and the "Cons" group.

The “Pros” group favors language learners’ differences in their linguistic performances and advocates an expansion of CSs. On the other hand, the “Cons” group is conservative about expanding the CS categories and rather tries to reduce them in order to generalize CSs according to psychological plausibility.

In addition to this, when forming their taxonomies, the “Pros” group tries to describe the observed forms in the speakers’ output whereas the “Cons” group tries to describe the underlying cognitive processes in their output. Therefore, these groups are absolutely different from each other, one being external and interactive and the other being internal and cognitive. In other words, the “Pros” group deals with the performance data to understand the underlying competence while the “Cons” group deals with the underlying competence in order to account for performance data.

These groups use different techniques when analyzing CSs. The “Pros” group which is external and interactive uses real-objects and a listening partner with a purpose in the elicitation of CSs whereas the “Cons” group which is internal and cognitive uses abstract shapes in CS elicitations and does not require a listening partner. Furthermore, as the “Pros” group focuses on linguistic variances it investigates L2 learners with different L1s and compares these performances with TL native speaker performances. Since the priority of the “Cons” group is to find out underlying cognitive processes, it investigates L2 learners with the same L1s and compares the performances of L2 learners with their own L1 performances. Lastly, the “Pros” group is for teaching the use of CSs whereas the “Cons” group is against it, arguing that CSs are reflections of cognitive processes and teaching them would mean teaching cognitive processes. Yule and Tarone (1997) named these groups as

“profligate” and “conservative”, profligate referring to the “Pros” group and conservative referring to the “Cons” group.

The *Interactional* and *Psycholinguistic* theoretical approaches are members of the “Pros” group. Although they study the use of CSs from different theoretical perspectives, they follow a linguistic and product-oriented approach in their analyses of CSs. On the other hand, the “Cons” group is process-oriented in the analysis of CSs and follows a psychological approach to conceptualize CSs.

In line with Yule and Tarone’s (1997) classification of the “Pros” and “Cons” groups, the main existing taxonomies will be introduced in the following section.

2.2.3.1 The “Pros” Group:

Yule and Tarone (1997) argued that the taxonomic approaches of the “Pros” group focuses on descriptions of the language produced by L2 learners. The CSs in these taxonomies are the descriptions of the observed forms in L2 output. According to this argument, there are four main taxonomies of the “Pros” group. These are Tarone’s (1977, 1981, and 1983), Faerch and Kasper’s (1983), Paribakht’s (1985) and Dörnyei and Scott’s (1997) classifications.

Tarone’s Interactional Approach:

Tarone (1977) argued that CSs are consciously used by an individual to overcome a crisis which occurs when language structures are inadequate to convey the individual’s thought. Later, Tarone (1981) argued that it is difficult to say whether CSs occur consciously or unconsciously, and she avoided specifying the degree of consciousness in her new definition of CSs.

By defining CSs as “mutual attempts of two interlocutors to agree on a meaning in situations where requisite meaning structures do not seem to be shared” (p. 288), Tarone brought an “interactional perspective” to CSs studies. In her definition CSs are seen as the tools to negotiate meaning when both interlocutors try to agree on a communicative goal.

Tarone (1981) proposed three criteria to characterize a communication strategy. According to these, there should be a speaker who desires to communicate meaning *x* to a listener. The speaker believes that his linguistic or sociolinguistic means are unavailable to him or unshared with the listener and then he chooses either to avoid communicating meaning *x* or tries to alternate means to communicate meaning *x*.

This view focuses on negotiating meaning between the interlocutors since the intention of the speakers is to clarify meaning when linguistic or sociolinguistic means are unavailable or unshared by the interlocutors. This view is also interactional because it reflects the learners’ attempts to make themselves understood to their interlocutors and CSs are used to achieve mutual understanding between two interlocutors.

In line with her CSs definition and criteria, Tarone (1981) provided a classification of communication strategies. (Appendix A).

Faerch and Kasper’s Psycholinguistic Approach:

Faerch and Kasper (1983a) located CSs in a general model of speech production in which two phases exist as a planning phase and an execution phase. In the planning phase, the learners develop a plan which can be executed to achieve communicative goals. Faerch and Kasper (1983a) argued that CSs belong to the

planning process and they are used when learners experience some problems in their initial plans. These problems prevent them from executing their plans and when trying to solve these problems the learners either use avoidance strategies (reduction strategies) or achievement strategies.

Faerch and Kasper (1983a) provided two defining criteria for CSs and in their model CSs are seen as strategic plans as they are problem-oriented and conscious.

For problem-orientation, which is the first defining criterion of CSs, Faerch and Kasper argued that CSs are employed when learners lack the L2 resources that are required to express their intended meaning (a problem in the planning phase), or when they cannot gain access to them (a problem in the execution phase).

For consciousness, which is the second defining criterion of CSs, Faerch and Kasper argued that CSs are “potentially conscious” which mean that they are consciously employed by some but not all learners in some but not all situations to solve the problems in reaching communicative goals.

According to Faerch and Kasper’s (1983a) psycholinguistic approach learner’s mental processes are important, whereas in Tarone’s (1981) interactional approach meaning negotiation between the learners is important.

Faerch and Kasper (1983a) developed a taxonomy of CSs according to the criteria they provided. They divided CSs into two main categories as reduction strategies which are used when the original communicative goal is changed and achievement strategies which are used when an alternative plan is developed.

(Appendix B).

Paribakht’s Knowledge-Based Approach:

Paribakht (1985) defined CSs as “ vehicles through which speakers use their different kinds of knowledge to solve their communicative problems” (p. 134) . In

line with her definition, she tried to identify the “different kind of knowledge” or CSs that learners use to solve their communicative problems. She identified four types of approaches that are based on different types of knowledge and her classification of CSs is based on these four different types of knowledge. The first one of these approaches is the linguistic approach which emphasizes the semantic features of the target items. The second one is the contextual approach which uses the speakers’ contextual knowledge. This approach emphasizes on the contextual knowledge of the learner and instead of the semantic features of the target item it gives contextual information about the target item. The next approach is the conceptual approach which is about the speakers’ general world knowledge. The fourth approach is the mime which is the speakers’ knowledge of using meaningful gestures when communicating the target items. Paribakht (1985) also provided a classification of CSs (See Appendix C).

Dörnyei and Scott’s Problem-Management Approach:

Suggesting that “stalling strategies” are also problem-solving strategies in communication, Dörnyei (1995) extended the scope of CSs. He argued that one of the important problems that L2 speakers face when communicating is insufficient processing time, and he suggested that “stalling strategies” which are the use of lexicalized pause-fillers and hesitation gambits also help speakers to gain time to think and continue communication. Dörnyei and Scott (1997) further extended the scope of CSs by arguing that “CSs include every potentially intentional attempt to cope with any language-related problem of which the speaker is aware during the course of communication” (p.179). Dörnyei and Scott (1997) classified CSs according to the manner of problem management- that is how CSs help to resolve

conflicts and achieve mutual understanding. There are three main categories, direct strategies, interactional strategies and indirect strategies in Dörnyei and Scott's (1997) classification. (Appendix D)

2.2.3.2. *The “Cons” Group*

With a shift from product-based approaches to process-based approaches in the late 1980s, the “Pros” group researchers began to be criticized by several researchers such as Bialystok 1990; Bongaerts et al. 1987; Kellerman et al. 1987; Poulish, 1987-or Nijmegen Group (Bongaerts and Poulish, 1989; Bongaerts, Kellerman & Bentlage, 1987; Kellerman, 1991; Kellerman, Bongaerts & Poulish, 1987; Poulish, 1987; Poulish, Bongaerts &, 1987) for being product-based and descriptive because the “Pros” group focuses on the description of language production by L2 learners and its primary focus is on the description of observed forms in L2 output.

On the other hand, the “Cons” group focuses on the description of the psychological processes of the L2 learners and its primary interest is on the description of cognitive processing. The “Cons” group criticizes the product-based taxonomies for describing only the different CSs types and not focusing on the psycholinguistic processes that cause the selection of a particular CS. According to the “Cons” group, the classification of CSs based on the surface structures of underlying psychological processes is not sufficient, so they investigate the underlying psychological reasons that lead the learners when using CSs.

There are some differences in the Pros and Cons group typical taxonomies. While “Pros” group taxonomies favor both reduction and achievement – or compensatory- strategies, “Cons” group taxonomies focus mainly on compensatory

strategies. Reduction strategies are the ones that are used when faced with a communication difficulty by avoiding, changing or abandoning the communicative goal. Achievement strategies or compensatory strategies, on the other hand, are used to form alternative communication resources when faced with a problem in communication. The compensatory strategies in the taxonomies of the “Cons” group are divided into two main types as *conceptual*, which could be holistic or analytic, and as *code*, which involves the use of linguistic devices.

In addition to the reduction-achievement distinction between the “Pros” and “Cons” group taxonomies, three of the four main taxonomies of the “Pros” group (except for Dörnyei and Scott’s (1997) taxonomy, the other taxonomies (Tarone, 1981; Faerch and Kasper, 1983; Paribakht, 1985)) are based on certain linguistic features like the role of the L1. This was claimed to be psychologically unfounded and over-detailed by the “Cons” group researchers who, like Dörnyei and Scott (1997), organized their taxonomies and classified CSs according to different principles such as the learner’s manner of problem-management to solve communication problems and to achieve mutual understanding.

There are three main taxonomies of the “Cons” group. These are Bialystok’s classification (1990), Nijmegen Group’s classification and Poulishse’s (1993) classification.

Bialystok’s Classification:

In line with her cognitive theory of language processing, Bialystok (1990) classified CSs into two main classes as “analysis-based” and “control-based”. Analysis-based strategies are “attempts to convey the structure of the intended concept by making explicit the relational defining features” (p.133). These strategies

are circumlocution, paraphrase, transliteration and word-coinage in product-based strategies. The control-based strategies involve “choosing a representational system that is possible to convey and that makes explicit information relevant to the identity of the intended concept” (p.134). Code-switch and mime are examples of control-based strategies. Bialystok’s classification of CSs is:

- i) Analysis –Based Strategies
- ii) Control–Based Strategies

Nijmegen Group’s Classification:

The most important criticism of the Nijmegen Group researchers against product-based taxonomies is about their not being related to theories of language use or development. According to the Nijmegen Group researchers, the taxonomies of CSs should provide insights into the cognitive processing underlying CS use. In line with this argument they favor fewer categories and promote psychological plausibility in their taxonomies. Another important criterion in their taxonomies is generalizability and they argue that their classification of CSs is independent of the variations across speakers, tasks, languages and proficiency levels. The Nijmegen Group, like Bialystok, deals only with compensatory strategies and they categorize them into two main categories as “conceptual” and “linguistic” strategies.

Conceptual strategies include CSs like approximation, circumlocution and word-coinage and are used when speakers manipulate concepts to make them expressible by their linguistic or mimetic resources. Conceptual strategies are further divided into two sub-categories as analytic and holistic. Linguistic/code strategies are used when speakers manipulate their linguistic knowledge either by morphological creativity or transfer. Linguistic/code strategies include literal translation, code-

switch, foreignizing and grammatical word-coinage. Nijmegen Group's classification of CSs is:

- i) Conceptual Strategies
 - Analytic
 - Holistic
- ii) Linguistic/ Code Strategies
 - Morphological Creativity
 - Transfer

Poulisse's Classification:

Poulisse (1993) extended process-based taxonomies by conceptualizing CSs according to a model of speech production. Poulisse argued that the existing process-based taxonomies were not sufficient enough to handle the processes involved in speech production and classified compensatory strategies into three major strategies as “substitution strategies”, “substitution-plus strategies” and “reconceptualization strategies”. Substitution strategies involve modifying some features of a lexical chunk in search of a new lexical item. These strategies are ones like approximation or code-switching. Substitution-plus strategies involve untypical uses of L1 or L2 morphological or phonological features, and *foreignizing* is an example of this category. Reconceptualization strategies are used when there is a change in the preverbal message which involves more than one chunk and circumlocution is an example to this category. Poulisse's (1993) classification of CSs is:

- i) Substitution Strategies
- ii) Substitution-plus Strategies
- iii) Reconceptualization Strategies

In summary, CS classifications are mainly divided according to two major approaches as product-based and process-based approaches and within these approaches, especially in the product-based approach, there are different theoretical perspectives. In the product-based approach, while Tarone (1981) followed an interactional approach and viewed CSs from a discourse analytical approach, Faerch and Kasper (1983) argued that CSs are verbal plans within a speech production framework. Dörnyei and Scott (1997) argued that CSs are related with communication problem-solving behavior and they included devices that are not strictly meaning related, extending Faerch and Kasper's and Tarone's ideas. On the other hand, in the process-based approach, while Bialystok (1990) and the Nijmegen Group argued that CSs are mental events that follow a cognitive psychological approach, Poulishie (1993) developed the psycholinguistic approach by including CSs in a speech production framework.

2.2.4. Research on Communication Strategies

The factors controlling the use of different kinds of CSs have been investigated by many researchers and Bialystok (1990) identified three potential factors that influence the choice of CSs. These are the nature of the task, the proficiency level of the L2 learners, and features of the communicative context. In the section below, the findings of the research on the use of CSs will be discussed by focusing on a) whether CSs used in L1 and L2 are similar or different b) whether learner variables have an influence on the use of CSs and c) whether context has an impact on the use of CSs.

2.2.4.1. *CS use and L1 versus L2*

Whether speakers use the same or different CSs in L1 and L2 during the course of communication has been one of the interests of CSs research although Bialystok (1990) argued that the use of CSs by second language learners is a distinctive second language phenomenon.

Bongaerts and Poulishse (1989) were one of the first researchers who looked at whether L2 speakers of English use the same or different CSs in their L1 and L2. In their study, Bongaerts and Poulishse (1989) made their participants describe abstract shapes both in their L1 and in their L2. When the CSs were compared, the researchers found out that the participants used holistic strategies both in their L1 and L2. This study showed that in terms of the use of CSs in L1 versus L2, there are similarities rather than differences.

Ellis (1984) also compared L1 and L2 communicative performance and he asked six L2 learners and six native speakers to tell a story by looking at a picture. Paraphrase and avoidance strategies were specifically investigated in the study and it was found that native speakers used less avoidance and paraphrase strategies than L2 speakers.

In order to investigate whether there is a difference between L1 and L2 in terms of communication strategy use, Kellerman, Ammerlaan, Bongaerts and Poulishse (1990) also asked 17 Dutch learners of English to describe 11 abstract shapes in two sessions, one in Dutch (in their L1), and one in English (in their L2). Based on their findings, the researchers classified the strategies as holistic, partitive and linear. The results showed that, participants generally preferred holistic strategies over partitive over linear strategies and no significant difference was found on the use of strategies employed in L1 and L2.

Russel (1997) replicated Kellerman et al.'s (1990) study with Japanese non-native speakers of English to examine whether the hierarchy previously found as holistic strategies over partitive strategies over linear strategies both across and within the languages operated among Japanese learners of English as well. The results of the study showed that Kellerman et al.'s (1990) hierarchy operated across languages (Japanese versus English) but not within languages. That is, participants violated the hierarchy in their definitions within one language.

Yule and Tarone (1990) carried out a study in which they compared the usage of CSs by native-speaker/ native-speaker and non-native speaker /non-native speaker pairs by using three different communicative task types in L1 and L2. The results of this study also showed that there were similarities on the use of CSs in L1 and L2 as native-speaker/ native-speaker and non-native speaker /non-native speaker pairs use the same CSs.

The studies above show that there is generally no difference in the use of communication strategies in terms of L1 or L2 and that the same CSs are used in L1 and L2. That is, these studies showed that communication strategy use is not only an L2 phenomenon but that it is present in L1 as well.

2.2.4.2. CS use and Learner Variables

Researchers dealing with the use of CSs have also been interested in learner variables such as proficiency level, gender, age, personality, cognitive difference and their effects on CS use.

Among the learner variables, the proficiency level of the learner on the use of CSs has been one of the most investigated by the researchers. Bialystok (1983) investigated the relationship between proficiency level and the use of CSs by

collecting data from 12 children and 14 adult learners of French with a picture reconstruction task in which the participants depicted the picture to a native speaker of French. The children represented the low-proficiency learners and the adults represented the high-proficiency learners in her study. She found out that high-proficiency level learners used significantly more L2-based CSs such as word-coinage and description and used significantly fewer L1-based CSs such as code-switching and literal translation than low-proficiency level learners.

Paribakht (1985) also investigated the relationship between speakers' proficiency level in the TL and their CS use. 20 intermediate, 20 advanced proficiency level Persian learners of English and 20 native speakers of English participated in the study. They were asked to complete a concept-identification task in which they were required to communicate 20 single lexical items comprising both concrete and abstract items to native speaker interlocutors in an interview situation. The results of the study showed that low proficiency level-learners came across more communication problems and used more CSs than high-proficiency level learners and native speakers. It was also found that high-proficiency level learners used more L2 based strategies and tended to abandon L1 based strategies as they became more proficient in the language, which is in line with Bialystok's (1983) findings.

Chen (1990) also investigated the relationship between L2 learners' TL proficiency and their strategic competence. In the study, the CSs employed by twelve Chinese EFL learners, six high-proficiency level and six low-proficiency level learners were investigated through a concept-identification task. This involved 12 concrete and 12 abstract objects and required the participants to describe two concrete and two abstract concepts out of 24 choices to a native speaker of English in an interview situation. The results showed that low-proficiency level learners

employed more CSs than the high-proficiency level learners and there was a significant difference in the type of CSs used between low and high- proficiency level learners. High-proficiency level learners used more linguistic-based strategies such as metalanguage, superordinate categories, synonym and antonym, whereas low-proficiency level learners used more knowledge-based CSs such as exemplification and cultural knowledge.

The influence of gender on CS use has not been investigated by many researchers. Wang (1993) conducted a study with 16 Korean learners of English and 16 native speakers of English who were audiotaped during their conversation about a university orientation program with native speakers of English. The results of the study showed that CSs were used more when communicating with a female rather than a male native speaker interlocutor.

The influence of age on the use of CSs is another area of interest in CSs literature. Bialystok (1990), for instance, investigated the use of CSs by 9 year old children learning French with a picture reconstruction task. Her findings revealed that the use of avoidance, paraphrase, conscious transfer and appeal for assistance strategies were used by child L2 learners and circumlocution was the most frequently used communication strategy type among child L2 learners.

Marrie and Netten (1991) also investigated the relationship between the use of communication strategies and age. They tried to determine whether the CSs used by older L2 learners were used by young L2 learners as well. The results of the study revealed no significant difference between the old and young participants and it was found that approximation and circumlocution strategies were the most frequently used strategies.

The effect of personality on the use of CSs was also investigated. Tarone (1977) carried out a study to investigate whether the personality or background of the learners affected the use of CSs. Nine learners of English from different L1 backgrounds (Spanish, Turkish and Mandarin) participated in the study and they were asked to perform a picture description task in both their L1 and L2. It was found that learners' personality rather than their background affected the selection of CSs.

In another study, Littlemore (2001) investigated the relationship between the cognitive style and the use of communication strategy. 82 Belgian university students specializing in English participated in the study. After the students' cognitive styles were identified as holistic or analytic, they were asked to perform a concrete picture description task. The results of the study showed that holistic students used more CSs based on comparison whereas analytic students used more strategies that involved focusing on individual features of the target item. That is, analytic participants used significantly more analytic strategies than holistic participants and holistic participants used more holistic strategies than analytic participants. Thus, it was found that cognitive style had an impact on the use of CSs.

The above studies show that learner variables and especially the proficiency level of the learners affect the use of communication strategies. In general, low-proficiency level learners use more CSs whereas high-proficiency level learners use more L2 based CSs such as circumlocution and approximation.

2.2.4.3. CS use and Context

The relationship between the use of CSs and context, that is, the task type, cultural background, or the effect of different contexts such as non-native/non-native

versus non-native/ native speaker dyads on the use of CSs have been investigated in several studies.

In order to find out the sort of CSs used by non-native speakers of different L1s and cultural backgrounds, Yule and Tarone (1987) carried out a study with Asian and South American EFL learners. The participants in the study were asked to perform picture description tasks to their non-native speaker pairs. The results of the study showed that participants from different cultural backgrounds and with different L1s did not use CSs related to their culture based information. It was also found out that circumlocution and approximation strategies were the most used CSs in non-native/non-native interaction.

In another study, Yarmohammadi and Seif (1992) investigated the employment of different CSs in native/non-native interaction. They specifically looked at the relationship between the task-type and the use of CSs. 51 intermediate Persian learners of English participated in the study and they were asked to perform three tasks, which were writing compositions on a series of pictures, translation of the picture story, and narration of the picture story. The participants first performed the tasks in their L2 and then in their L1 and their oral versus written performances were compared. The results of the study showed that the participants used significantly more achievement strategies than reduction strategies in written or oral task types. It was also found that the participants used interlanguage based strategies such as word-coinage, approximation or circumlocution significantly more than L1 based strategies such as literal translation and code-switch, especially in written tasks.

In order to investigate the relationship between the use of CSs and the discourse topic, one of the factors affecting the context of the communicative

situation, Bou-Franch (1994) carried out a study. 10 three-party conversations between a native speaker of English and two Spanish learners of English were video-recorded and the participants were asked to take part in retrospective sessions that were tape-recorded after each session. 20 female Spanish learners of English participated in the study and the results showed that code control strategies such as borrowing, foreignizing, request for help and code-switching were used twice as much as conceptual analysis strategies such as approximation, description and mime. It was also found that CS use is influenced by the topic of discourse.

Flyman (1997) also investigated the role of CSs in communication between non-native speakers in three different tasks. 10 learners of French participated in the study and they were asked to perform a translation task, a picture-story telling task and a topic discussion task. Flyman investigated the compensatory strategies and the reduction strategies used by the participants and the results of the study showed that the highest number of compensatory strategies was found in the translation task and the least number of compensatory strategies was found in the topic discussion task. While conceptual strategies such as paraphrase, word coinage or mime were found more often in the translation task, code strategies such as language switch and appeal for assistance were used more often in picture-story telling and topic discussion tasks. In terms of reduction strategies the major difference between the three tasks was found on the morphological level. While 73% of the morphological avoidance strategies were applied in the picture-story telling task, 8% were applied in the discussion task. Therefore, Flyman (1997) found that task type affected the use of CSs.

Wongsawang (2001) aimed at exploring CS use for culture-specific notions in L2 to find answers to questions such as what kinds of CSs Thai ESL speakers

employ to convey referential concepts in English, and whether there are any patterns that can be observed as different from CSs used in other kinds of tasks. 30 Thai native speakers with intermediate English proficiency were asked to perform two tasks that contained culture-specific notions and the results showed that circumlocution and approximation were the most preferred strategies. The study also suggested that the familiarity of L2 speakers with a concept did not always help them in dealing with communicative problems; rather it was their knowledge of how to talk about it in the L2 that mattered more.

These studies also showed that task type and different contexts such as non-native/ non-native versus non-native/ native speaker dyads affect the use of CSs. In non-native/ non-native speaker dyads it was found that the use of circumlocution and approximation were the most frequent CSs, and in terms of the task type, picture-story telling task generated more CS use than discussion task.

After this review of the literature on CSs research, the literature on CMC will be reviewed in the following section.

2.3. Computer- Mediated Communication (CMC)

With the introduction of the Internet, computers have been used as a medium for communication and the type of communication that is provided via computers is generally called computer-mediated communication (CMC), though it has many different genres.

CMC was originally defined as a form of electronic written, or text-based communication, but as networking tools such as the Internet advanced, the forms of CMC have also advanced, including audio and video based communication.

Herring (1996) defined CMC as the communication between people through the use of computers. Warschauer (1999) used the term CMC to refer to modes in which people send messages to individual groups, and Murray (2000) defined CMC as “communication that takes place between human beings via the instrumentality of computers” restricting it to only text-based modes (p.39).

The term computer-mediated communication (CMC) is defined by Barnes (2003) as “a wide range of technologies that facilitates both human communication and the interactive sharing of information through computer networks, including e-mail, discussion groups, newsgroups, chat, instant messages, and Web pages” (pg.4). It is obvious from these CMC genres that there are two modes of CMC; asynchronous in which communication does not occur in real time, and synchronous in which participants react simultaneously at the same time.

According to Barnes (2003), one of the important features of CMC is maintaining communication among people by allowing them to bridge time and space in which face-to-face physical presence is no longer required. Although text-based messages do not include much visual and verbal information and this could be counted as a disadvantage of CMC, it has the advantage of providing communication among people anywhere there is a computer and an Internet connection, thus making it easy to communicate across distances. The lack of visual and aural information in most forms of CMC, as in e-mail has lead to another characteristic of CMC environment called “fantasy”. In order to compensate for the lack of visual and aural information, people have found creative ways to exchange information when presenting themselves in CMC, such as using emoticons to express their feelings.

Another feature of CMC is anonymity which enables people to behave and play in ways they would never do in face-to-face contexts. Anonymity enables

people to hide their actual identities and create an online personality which also allows them to act much more freely than in face-to-face communication.

Since the late 1980s, the interest in CMC in language learning has grown. Wilson and Whitelock (1997) argued that the most important characteristics of CMC that makes it an attraction in language learning and teaching is that it allows communication that is not restricted by location.

In terms of the use of CMC in language learning, Beaty (2003) argued that computer-mediated communication refers to situations which allow computer-based discussions without necessarily involving language learning. Beaty (2003) also argued that language learning can occur when learners negotiate meaning with native speakers of the target language or with their non-native peers.

Other characteristics of CMC in language learning that have been put forward in the literature are that CMC allows collaborative learning activities (Meskil & Mossop, 2003), it encourages participation among language learners and leads them to take active roles in communication and to have control over their learning (Bikowski & Kessler, 2002), it facilitates negotiation of meaning between students (Blake, 2000; Toyoda & Harrison, 2002), it encourages students to be less self-conscious of their language use (Meskil & Mossop, 2003, Sotillo, 2000), it provides a more equitable and a less threatening medium for L2 discussion (Warschauer, 1996). It has also been claimed that CMC results in increased participation among students (Kern, 1995; Kelm, 1992; Beauvois, 1992), it minimizes the role of the dominant teacher (Kern, 1995; Warschauer, 1997), it focuses learner attention on linguistic form due to its text-based medium (Warschauer, 1997; Blake, 2000; Pellettieri, 2000), it allows good quality language output production (Kern, 1995;

Warschauer, 1996; Chun, 1994) and it fosters learner autonomy and empowerment (Shetzer & Warschauer, 2000).

2.3.1. Synchronous versus Asynchronous Computer Mediated Communication

Messages exchanged via the Internet can be either synchronous or asynchronous. If the messages are exchanged synchronously, the communication occurs at the same time where participants exchange messages simultaneously in the same session and this is called synchronous CMC. If the messages are exchanged at different times and if there are time laps, asynchronous communication occurs and this is called asynchronous CMC. The time delay between when the messages are sent and received is a defining characteristic of asynchronous CMC including e-mail, discussion lists, Web sites and news groups. On the other hand, synchronous CMC occurs in real time and the messages are received almost instantaneously depending on the typing speed and quality of the hardware and the Internet connection. Chat rooms, Instant messenger and MUDs are examples of synchronous CMC.

In terms of the similarities and differences between synchronous and asynchronous CMC, Abrahams (2003) noted that in both of the modalities there is extensive learner-to-learner or learner-to teacher negotiation of meaning, more time to talk per learner than oral classroom communication, and increased amount of output that results in richer and more diverse lexicon. Both of them are written codes but they are registers between written and oral styles of communication. In terms of the differences, while synchronous CMC requires relatively immediate responses, in asynchronous CMC there is extended planning, encoding and decoding time. Also, in synchronous CMC, the use of outside resources is limited whereas it is not limited in asynchronous CMC. Finally, in synchronous CMC the interlocutors should be

immediately present, but in asynchronous CMC there is no social immediacy of the interlocutors.

2.3.2. CMC versus Spoken Communication

CMC has been found to exhibit characteristics that resemble spoken communication and written interaction, but some characteristics are unique to CMC discourse (Blake, 2000; Collor & Bellmore, 1996; Werry, 1996; Yates, 1996).

According to Yates (1996), some textual features that are present in written language such as lexical density, and other features like the use of the first person that are most often found in oral language can also be found in CMC. Yates (1996) argued that CMC is also affected by “numerous social structural and social situational factors which surround and define the communication taking place” (p.46).

Murray (2000) argued that in CMC environment people tend to use more abbreviations, simplified syntax (such as subject or modal deletion), emoticons to express emotional meaning, and formulaic phrases. People also tend to accept surface errors (such as typographical errors or misspellings). Murray (2000) concluded that in contrast to face-to-face communication, CMC was found to have a simplified register. Murray (2000) also noted that like conventional face-to-face interaction, learners addressed one topic at a time during synchronous CMC. Smith (2004), on the other hand, noted that due to its reduced sensory nature, CMC conversations need to be more explicit in indicating understanding and non-understanding. Finally, according to Gains (1999), CMC conversations differ from face-to-face interactions with their optional openings and closings and with differences in turn-taking behavior.

Among the differences between CMC conversations and face-to-face conversations, the requirement to be more explicit in indicating understanding and non-understanding in CMC conversations can be an important feature for the use of CSs as the need to express understanding and non-understanding might also require the use of CSs such as confirmation and clarification checks.

2.3.3. *CMC Genres*

People communicate with each other via computer in several different ways which constitute the genres of CMC. Basically, CMC has seven different genres. These are, 1-) electronic mail (E-mail), 2-) discussion lists, 3-) newsgroups, 4-) chat rooms, 5-) instant messenger, 6-) Multiplayer games/ MUDs/MOOs and 7-) web pages.

Electronic Mail (E-Mail):

Electronic mail is an Internet tool for transmitting textual messages and documents, in which users have mailboxes that receive and store messages. It is used for the sharing of information between people, and allows for one-to-one and one-to-many communication. It is the most frequently used genre of the CMC. Kern (1996) argued that e-mail is one of the important tools in foreign language education as it allows learners to communicate directly with native speakers or non-native speakers for a real purpose which supports language learning. It also gives awareness to students of how language is used in social discourse with its written form which permits reflection on the communicative act. Therefore, using e-mail in foreign language learning contexts not only promotes language learning but also cultural awareness and critical reflection with the interactional communication that it provides.

Discussion Lists:

Discussion lists enable small groups of people to exchange e-mail messages among themselves. This genre of CMC allows people to share information by allowing people to read messages at different times. In order to share information, first a discussion list on a networked host computer which stores messages and has software to send and receive messages to and from list members is set, and people are allowed to post their messages.

Newsgroups:

Newsgroups are message areas that are defined by subject. They allow people to communicate with each other just like bulletin boards do. The messages are stored on a news server where people post messages. Anyone with access to a newsreader can read and respond to posts as people are not required to subscribe to news groups.

Instant Messenger:

Instant messenger enables people who are logged onto their computers at the same time to exchange short messages with each other in real time.

Multiplayer games/ MUDs /MOOs:

MUDs (multiplayer-user dungeon or dimension) are online games in which players are involved in fantasy adventure that they create together as the game progresses.

MOOs (multi-user domain-object oriented software) add additional programming features to MUDs. MOOs are text-based virtual reality systems accessed through the Internet and foreign language MOOs are synchronous communicative language tools that provide communication in the TL in cyberspace. Pantelidis (1995) argued that MOOs are good in foreign language education as they encourage creativity, provide social atmosphere, allow passive students to become active, provide opportunities for

communication with students in other cultures, teach computer skills and build keyboarding skills with their highly motivating multimedia environments.

The World Wide Web:

The World Wide Web is a hypertext-based multimedia information and resource system designed for use with the Internet. It is used by people as a medium of interpersonal communication; individuals use Web pages as a form of personal expression. In language instruction, it is mainly used as a resource for students to find and interact with authentic language materials. The flexibility and interactivity of the Web provides language instructors with an ideal medium in which there is out-of class access to materials.

Chat:

Chat is defined as the computer users' engagement in online dialog synchronously with other users from around the world by typing messages back and forth to each other. Most chat occurs within "rooms" that are sponsored at various locations on the global network. Chat rooms allow people to communicate online by allowing them to exchange messages in real-time. It is interactive and many online services make chat rooms available to their subscribers. Among the three types of chat modes of audio, video and text-based, text-based chat has been the most widely used one in language learning classrooms.

According to Almedia d'Eça (2002) using synchronous CMC chat in language learning classrooms is beneficial for many aspects and the ultimate goal is to give language learners more of a chance to practice and communicate with each other. As learners have the opportunity to communicate with others in real-time settings where each can get used to a speech-like linguistic strategy (Kern, 1995) and where each can get immediate responses and feedback, they can improve their

communicative skills such as carrying on a conversation, turn-taking, greeting others as well as their interpersonal skills such as listening to each other, discussing and negotiating abilities which can be transferred to face-to-face communication.

In addition to this, as chat allows different types of interactions such as one-to-one or one-to many it can encourage collaborative learning where students work together to produce group projects with other students from different nations and take more control of their own learning. Working students from abroad may help students to have cultural awareness as well. Moreover, chatting helps learners to improve their computer literacy, such as improving students' typing abilities.

Almedia d'Eça (2002) pointed out some of the disadvantages of using chat in foreign language classrooms as well. One of the disadvantages is the use of bad-language. In order to type fast the participants of the chat may reduce some parts of the language. As chatting on-line requires both thinking in the TL and typing skills under fast time constraints, simplified sentences occur and some letters or some grammar elements might be omitted, resulting in learning and using bad language. Another disadvantage is technical problems such as the bad quality Internet connections or bad quality hardware and software which affect the speed of chat and cause problems during communication.

2.3.4. Research on CMC

Studies on CMC in language learning research have mainly focused on aspects such as participation structures, quantity and quality of linguistic features produced by the learners, and motivational patterns in CMC. More recently, researchers have started to focus on some other aspects such as meaning negotiation

and the role of task type. In the section below an overview of the previous research is provided.

In order to analyze the effects of networked computer interactions on the quality and characteristics of language production, Kern (1995) compared the quantity of output, discoursal and morphosyntactic features and teacher-control in CMC and face-to-face oral discussions by using the software *InterChange* which allowed the participants to discuss the given topics synchronously. The participants were 40 college students in two elementary-level French classes. The results of the study showed that the CMC sessions resulted in more turn-taking by students, more varied discourse functions, verb forms and clause types and less teacher control than in face-to-face sessions. Kern (1995) also asked the participants to evaluate the use of *InterChange* in their lessons by a questionnaire and the results showed that students evaluated the use of *InterChange* positively.

Sullivan & Pratt (1996) also conducted a comparative study of two ESL writing environments, in a computer-assisted classroom and a traditional oral classroom. They compared large and small group discussions in CMC environment and face-to-face environment by using *InterChange* with an emphasis on interactional patterns. 38 college students in two intermediate ESL writing classes participated in the study and their attitudes, writing apprehension, written products, transcripts of the electronic discussions and audio/video tapes of the oral discussions were examined. The results showed that students had a positive attitude towards discussions and writing on *InterChange* after 15 weeks of instruction. It was also found that large-group *InterChange* discussions generated student-dominated discourse, whereas the oral discussions generated teacher-dominated discourse. The

small-group discussions revealed a more equal student participation in CMC environment than the face-to-face discussion environment.

In order to examine the quality of student participation and language use, Warschauer (1996a) compared 16 advanced level ESL students' discussions in face-to-face and CMC by using *InterChange*. He made a counterbalanced within-group analysis and calculated the ratio of total words produced by speaker to the total amount of words produced by the group. The results of the study showed that the number of words per speaker showed more equal participation in the *InterChange* discussions than the face-to-face discussions. The equal participation in the *InterChange* discussions was seen mostly among students who had less confidence in their fluency. It was also found that electronic discussions resulted in more formal and complex language use lexically and syntactically than face-to-face discussions.

Beauvois (1998) compared student-student and student-teacher interaction in a synchronous CMC environment and a traditional classroom setting. The data were collected from 40 students of an intermediate French course at the university level, once a week at a regularly scheduled time for four sessions. The students were asked to answer two to four questions in French about the previous night's readings as a starting point for their discussions. The results of the data showed that the students used more complex language structures, treated the topics more thoroughly and openly and used only the target language in synchronous CMC environment as opposed to the traditional classroom setting. Beauvois (1998) argued that in terms of quantity, quality and greater student participation, synchronous CMC bridged the gap between oral and written communication for some students who found oral production in the L2 classroom stressful by providing them with a less threatening communicative environment that slowed down the communication.

In her case study with fourteen graduate students who were obtaining Master of Arts degrees in educational technology, Poole (2000) searched for student participation in a discussion oriented online course. She investigated how students chose to access and engage course materials, how they participated during the week in which they moderated the discussions, the content of their postings, and whether their participation contributed to the class as a community of learners. The software *WebCT* was used for data collection during a semester and it was found that most of the students accessed the class Web site several times each week from their home computers and contributed more than they were required. Although student participation varied from person to person, each of them gave a voice to the online medium with increasing participation when they were assigned as the moderator of the discussions. The content of the messages were focused on the course content and the development of the class as a community was not prevented as the students referred to each other to maintain the dialogue as conversation rather than as distinct and unconnected messages.

Beauvois (1992) looked for computer-mediated discussion on networked computers and examined student-student and student-teacher interaction in real time within the context of an intermediate French course. Beauvois (1992) tried to find the number of student-initiated messages in the course of each computer-mediated and oral discussion, the types of response in the TL the students produced such as simple or complex sentences and superficial or in-depth messages, how the errors were corrected in this medium where the instructor could not verbally correct errors immediately, whether network conversations resembled regular classroom oral discussions, and when code-switching occurred in network conversations. The results showed that students generated between 150 and 200 messages per session and a

comparison of electronic discussions with oral classroom discussions showed favorable results in terms of quantity, quality and greater student participation in CMC. It was also found that students were more honest and open in their treatment of the topics in CMC. In terms of error-correction, the instructors corrected students' messages either indirectly by sending a message that restated the error correctly or by returning a list of student's messages for correction. Exclusive TL usage in CMC was one of the findings of the study.

In order to explore the motivational aspects of using computers for writing and communication, Warschauer (1996b) conducted a study with 167 university students in 12 EFL and ESL academic writing classes in the USA, Hong Kong and Taiwan by gathering data from a questionnaire. The results of the questionnaire revealed that the majority of students had a positive attitude towards using computers and this attitude was consistent across the variables of gender, typing skill, and access to computers at home. It was also found that students' self reported knowledge about computers and amount of experience using electronic mail correlated positively with student motivation.

In her study, Abrahams (2003) investigated the characteristics of how learners' online language use in both synchronous and asynchronous modes of CMC transfers to their face-to-face oral interaction. The participants were 96 third-semester university students with an intermediate level of German, and their performances were compared in three groups consisting of a control group, a synchronous group and an asynchronous group on three oral discussions tasks during one semester using *WebCT* chat tool and *WebCT* bulletin board for asynchronous CMC. Although no statically significant difference was found across groups in terms of quality of language, measured by lexical richness, lexical diversity and syntactic

complexity, students in the synchronous CMC group produced more language in subsequent face-to-face discussions than the students in asynchronous CMC group and the control group.

Blake (2000) conducted a study to show that networked learner/learner discussions would also produce language modifications as in the oral interactions reported in the literature, and to test whether Pica, Kanagy, and Falodun's (1993) argument about the superiority of jigsaw and information-gap tasks was also true for students in CMC environment. In Blake's (2000) study, 50 intermediate L2 Spanish learners were asked to carry out networked discussions in pairs using a synchronous chat program- *Remote Technical Assistance (RTA)*. The dyads completed jigsaw, information-gap and decision-making tasks in 50-minutes. The students were also given a post-test attitude survey which gathered their opinions about the pros and cons of synchronic chatting using the RTA tool. The results of the study showed that jigsaw tasks were the most influential ones in promoting negotiations and lexical confusions triggered the majority of negotiations. In addition to this, among the student responses to the post-test attitude survey, 51 comments indicated that CMC was fun, helpful, and/or conducive in improving their communication skills, and a few students suggested that the CMC medium was superior to the oral discussions that occur in the classroom. Blake (2000) concluded that CMC can provide many of the benefits of the Interactional Hypothesis with more possibilities for access outside of the classroom environment.

Pellettieri (2000) examined whether negotiation of meaning occurred in task-based synchronous CMC as it does in oral interaction. Pellettieri (2000) worked with 20 intermediate level learners of Spanish through five communicative tasks which ranged from focused open conversation in which students had a specific topic to

discuss to more closed tasks such as jigsaw-type activities using a *UNIX* program that provides synchronous computer interaction. Pellettieri (2000) concluded that task-based synchronous CMC chatting fostered the negotiation of meaning and involved learners in all aspects of the discourse which pushed them to form-focused linguistic modifications. Another finding of the study was the importance of the language task for the quantity and type of negotiation produced. Pellettieri (2000) argued that synchronous CMC language tasks should be goal-oriented with a minimum of possible outcomes and they should be designed in a way that requires all participants to request and obtain information. The data from the study suggested that the tasks that consist of vocabulary beyond the repertoire of the learners and that involve ideas or items outside of their real-word expectations can increase the quantity of negotiation produced. It was concluded that synchronous CMC chat can play a significant role in the development of grammatical competence because it fosters the negotiation of meaning and form-focused interaction and because learners have more time to process and monitor their interlanguage.

In order to determine whether computer-mediated negotiation resembles face-to-face negotiation and whether the role of task type has a similar effect on CMC non-native speaker /non-native speaker interaction as has been noted in the face-to-face literature, Smith (2003a) carried out a study with 14 non-native-non-native dyads who completed four communicative tasks using *ChatNet*. The communicative tasks were two jigsaw and two decision-making tasks which were seeded with eight target lexical items. To determine whether CMC is like face-to-face interaction Varonis & Gass's (1985) model of negotiation was used. The results of the study showed that learners negotiate for meaning in CMC environment when problems in communication occur. Learners who worked on CMC tasks engaged in negotiated

interactions in about one-third of their total turns. Task type had an influence on the extent to which learners engaged in negotiation, but differed from face-to-face communication in that learners negotiated more in the decision making tasks than the jigsaw tasks. These findings are contrary to Pica et al. (1993) who argued that jigsaw tasks facilitate negotiation over information gap, problem-solving, decision making and opinion exchange tasks.

Satillo (2000) compared synchronous and asynchronous CMC in order to see whether there was a quantitative and qualitative difference between ESL learners' synchronous discussions of reading assignments and asynchronous discussions in terms of the discourse functions. Satillo (2000) also explored which mode of CMC showed more syntactically complex learner output. The data was collected from 25 students from two advanced ESL writing classes, using *Internet Relay Chat (mIRC)*. The participants met twice a week for six hours and the results of the data showed that the quantity and types of discourse functions present in synchronous discussions were similar to the types of interactional modifications found in face-to face conversations. It was argued that the use of emoticons or the use of symbolized discourse markers functioned as non-verbal negotiation strategies. In addition, it was found that in asynchronous CMC discussions were more constrained than those in synchronous CMC, whereas in terms of syntactic complexity asynchronous discussions were richer due to their delayed nature.

Chun (2003) analyzed whether Korean learners of English engage in appropriate meaning negotiation for SLA through CMC, using the chat program MS Chat 3.0 for synchronous chatting through eight communicative tasks (jigsaw and information gap). 20 male students of pre-intermediate level of English took part in the study at eight rounds of computer mediated chatting conducted after school twice

a week in the computer lab for four weeks. All participants were surveyed with a questionnaire which gathered opinions about the advantages and disadvantages of synchronous CMC using *MS Chat 3.0*. The linguistic features of the students' language modifications produced in the eight rounds of CMC were also investigated. The data showed that information gap tasks appeared as productive of meaning as jigsaw tasks in terms of stimulating negotiations, and picture-drawing tasks offered a significantly higher occurrence of negotiations than other tasks. It was found that synchronous CMC can provide Korean learners with more opportunities to engage in meaning negotiation in the TL and pictures can play a significant role in promoting negotiations. It was argued that describing pictures required the use of nouns and exact expressions that were outside the vocabulary scope of most students, thus necessitating the use of circumlocution, which motivated frequent clarification requests and confirmation checks. A great majority of negotiations were triggered by lexical confusions and the overall content of utterances, as reported by previous findings from studies of computer-networked interaction (Pellettieri, 1999; Blake, 2000). These negotiations demonstrated that students asked for clarifications and explanations when they wanted to check their understanding, and they gave feedback to others, typically in the form of agreement or continuation. Responses to the students' evaluation questionnaire showed 98% agreement that the MS Chat experience was "enjoyable" and "motivating." Students' responses in terms of the use of CMC for improving their English language development ranged from "very helpful" (54%) and "helpful" (37%) to "somewhat helpful" (9%). The findings revealed that using a chat program can be an effective method to facilitate the development of interactive competence because it gives students the opportunity to generate different kinds of discourse.

Smith (2004) also explored whether non-native speaker /non-native speaker computer-mediated negotiated interaction facilitated learners' ability to recognize and produce new lexical items, and whether the type of interactionally modified input-responsive (negotiated interaction), or preemptive (preemptive input)-best facilitated learners' ability to recognize and produce new lexical items. 24 intermediate-level ESL students met once a week in a campus computer lab during regularly scheduled class meetings over a period of 5 weeks. *ChatNet* was used as the synchronous CMC tool and the participants were asked to complete jigsaw and decision making tasks in 30 minutes. It was found that computer-mediated negotiated interaction facilitated learner's ability to recognize and produce new lexical items. The results also showed that negotiated interaction facilitated learners' ability to recognize and produce new lexical items better than preemptive input modifications. This study demonstrated that learners can and do negotiate meaning when problems in communication arise in a CMC environment and that such routines are extremely successful at resolving these difficulties, especially as they relate to negotiation around lexical items. Therefore, in a CMC environment, learners often choose to negotiate unknown lexical items and this negotiation is quite effective in leading to the acquisition of basic word meanings of previously unknown lexical items.

Looking at the above research findings, it can be concluded that research done in the field of CMC has revealed many benefits to the language learning context. In the forthcoming section, the benefits of CMC to language learning will be discussed, based on the results of the above research.

2.3.5. The benefits of CMC to language learning context

The literature on CMC points to several advantages of using CMC rather than face-to-face oral exchanges and to its benefits to the foreign language learning context.

First of all, it is argued that CMC provides a more equitable and less threatening medium for language learners. Warschauer (1996a) indicated that CMC provides learners with more equal participation opportunities than oral discussions. CMC has a strong equalizing effect. Therefore in CMC speakers share the floor more equally, whereas in face-to-face communication one or two participants dominate the floor and determine the topics to be discussed.

According to several researchers, during CMC chat learners are less anxious about participating and they are more motivated to use the TL (Kelm, 1992; Beauvois, 1992; Kern, 1995; Chun, 1998). It is also reported that communication in CMC is easier than oral communication in the classroom setting even for those without advanced typing skills (Beauvois, 1998, Kelm 1992; Kern, 1995).

Secondly, CMC interactions often result in high participation among the students (Kern, 1995; Kelm, 1992; Beauvois, 1992). Holiday (1995) also emphasized the benefits of participation made possible through CMC, and suggested that participation in CMC empowers language learners and enhances their language learning capacities. Learners are able to communicate with their peers by taking care of their literacy experiences and are involved in a highly stimulating environment enhanced by collaborative support and appreciation received from peers.

It is also suggested that CMC interaction increases learners' attention to linguistic form with its text-based medium (Blake, 2000; Pellettieri, 2000).

Warschauer (1999) claimed that students are allowed to better notice the input from

others' messages and incorporate that input in their own messages. Therefore the opportunities to learn new linguistic chunks are expanded in a CMC environment.

Another advantage of CMC interaction is the quality of the language input that is produced. Kern (1995) argued that synchronous CMC can facilitate the development of sociolinguistic and interactive competence and argued that students in CMC produce more turns and sentences and use a greater variety of discourse structures than students in oral discussions. In addition to this, in terms of the quality of the language produced in CMC, it was found that students use only the TL (Beauvois 1992; Kelm, 1992; Kern, 1995). Chun (1994) revealed that CMC is an effective way to facilitate the acquisition of discourse skills and interactive competence. Her study demonstrated that learners produce a wide range of discourse structures and speech acts and they interact directly with each other with minimal pressure on response time and without the psychological pressure of making mistakes or looking foolish. Warschauer and Meskill (2000) argued that CMC enables students to practice the TL, especially in foreign language instruction where students have few opportunities for authentic TL use.

Pellettieri (2000), analyzing the advantages of synchronous CMC within the context of the Interaction Hypothesis (which focuses on the role of the negotiation of meaning), investigated whether synchronous CMC chatting holds the same potential for the development of grammatical competence as oral interaction. Pellettieri (2000) found that task-based synchronous CMC such as chatting can foster the negotiation of meaning and form-focused interaction and suggested that CMC chatting can play a significant role in the development of grammatical competence. Blake (2000) also argued that CMC can provide many of the benefits suggested by the Interaction

Hypothesis by providing learners with opportunities for access outside the classroom environment.

In terms of student motivation, students using CMC revealed that they are willing and eager to communicate in a CMC environment (Warschauer, 1996a; Kern, 1995; Chun, 2003). CMC is also found to be a less threatening environment than the face-to-face environment by the students, and this often results in an increased willingness to take risks and try out new hypotheses (Kelm, 1996; Kern; Warschauer, 1996a, 1997). Warschauer (1996a), for example, found that students were less inhibited during written production than in oral discussions. Meunier (1998) also noted that students took more risks experimenting with new ideas during online discussions. Kern (1998) suggested that the potential for anonymity may contribute to risk taking as it creates a certain distance between participants.

To sum up, CMC is beneficial for many aspects of foreign language learning as it enhances the quality and quantity of language production by providing a strong motivation and equal participation context to language learners. Its text-based medium attracts students' attention to linguistic form and enables them to improve their grammatical competence. Lastly, task-based synchronous CMC can foster negotiation of meaning which is beneficial to language learning.

2.4. Research on Synchronous CMC and Communication Strategies

There has been little research on the use of CSs in synchronous CMC and only three studies (Chun, 1994; Lee, 2002 and Smith, 2003b) focus on the use of CSs in synchronous CMC.

Chun (1994) examined whether computer-assisted class discussion provided learners with the opportunity to generate and initiate different kinds of discourse and collected data from 23 students for two semesters by using the software *InterChange* which allowed the participants to discuss the given topics in real-time. The results of the study demonstrated that participants performed various interactional speech acts like asking questions to fellow participants or to the teacher, giving feedback to others and requesting clarification like in oral discussions. The electronic discussions resulted in more student-student interaction than teacher-student interaction observed in language classrooms and, Chun (1994) argued that computer-assisted class discussion enabled participants to acquire and practice more varied communicative proficiency since the interactional structures seen in synchronous CMC resembled spoken conversation. It was argued that the competence that was acquired and practiced in synchronous CMC could be transferred to the participants' spoken discourse competence.

Lee (2002) carried out a study to find the modification devices that learners of Spanish at the intermediate level of proficiency use during synchronous online communication. 34 participants gathered together for a 50- minute chat once a week outside the classroom. Open-ended questions based on everyday topics, seasonal events, movies that students were required to see as their class assignments were posted to the chat folder in the *Blackboard* as discussion topics. The online discussions were retrieved from the archives under the "Virtual Classroom" in the

Blackboard and they were used in the analysis of communication devices and language patterns. The data were coded according to nine different modification devices (comprehension check, confirmation check, clarification check, request for help, self correction, use of English, topic shift, use of approximation, use of keyboard symbols as discourse markers) based on CSs defined by Long (1985), Pica and Doughty (1985) and Tarone (1980) in face-to-face exchanges. The results of the data revealed that request for help, clarification check, and self-correction were the most used CSs. Students improved their fluency of using the TL by focusing on the meaning but not the accuracy of the form and the quick interaction seemed to foster fluency rather than accuracy, especially in learner to learner exchanges. By ignoring each other's linguistic errors, learners proved that as in face-to-face communication, synchronous exchange takes place in a natural context and requires immediate responses. The use of self-correction showed that learners had time to pay attention to the form of their output and this reinforced learners' language skills. The use of keyboard symbols as discourse markers functioned in a way similar to non-verbal negotiation strategies that facilitate online interaction. Therefore, it was concluded that participants used communication devices similar to the ones used during face-to-face interaction, and since the use of interactive strategies facilitate the comprehensibility of input, it was argued that the use of negotiation devices might promote L2 learning.

Smith (2003b) investigated whether task type had an effect on the use of CSs and whether some CSs were more effective than others in synchronous CMC. The data was collected from 18 intermediate ESL university students from different L1 backgrounds using the tool *ChatNet*. The participants met once a week for five weeks and they were given 30 minutes to complete jigsaw and decision-making

tasks. Long's (1983) way of defining CSs as the ones that learners use for discourse maintenance, and a combination of various CS categories from multiple sources in the SLA literature was used to code the data. To code compensatory strategies- the ones that are used to compensate for a lack of competence in the TL when problems in communication arise- the taxonomy outlined by the Nijmegen group was used. The results of the data showed that learners used a wide variety of CSs during CMC in positive navigation (before any problems) and students varied in their usage, some of them resembling writing and the others resembling oral discussions. There were 26 strategies coded for CS use and substitution, framing, fillers and politeness were the most frequently used CSs by the students. A total of 23 compensatory strategies were coded. A paired group t-test was performed for each CS to determine whether task type had an effect on strategy use and no significant difference was found. For compensatory strategy use, it was found that about two-thirds of compensatory strategy usage occurred during the decision-making task. In addition to this, no significant difference for effectiveness across compensatory strategies was found in a one-way repeated measures analysis of variance. The heavy use of framing strategy showed that the CMC interface required learners to signal their transitions perhaps more explicitly than during face-to-face interaction as framing is seen as an attempt to mark the end of old topics or the beginning of new ones. Fillers (to fill pauses, to gain time) were also used more and their usage was similar to face-to-face communication. Smith (2003b) concluded that future research should investigate the role of task type in CS use in greater detail by expanding the number of task types since no task type effect was found between jigsaw and decision-making task types in his study.

2.5. The Role of Task Type in Communication Strategy Research

In language teaching, tasks have been seen crucial since they help learners to develop communicative competence by experiencing language as it is used outside the classroom, and it is widely accepted that the nature of interaction is affected by the task type (Skehan, 1996). Tarone & Yule (1989) argued that communicative tasks aim to provide speakers with some information to convey to a listener who requires that information, and an awareness that an information gap exists. Thus, communicative tasks give language learners the chance to negotiate meaning more effectively.

Pica, Kanagy, & Falodun (1993) explained that:

“In interaction-based pedagogy, classroom opportunities to perceive, comprehend, and ultimately internalize L2 words, forms, and structures are believed to be the most abundant during activities in which learners and their interlocutors, whether teachers or other learners, can exchange information and communicate ideas.” (p. 10)

Therefore, tasks that are chosen for this goal should be goal-oriented and negotiate interaction in which learners can take an active role. The features and goal of communication tasks also requires learners to consider helping each other in whatever they do not understand and to make themselves understood whenever their own message is unclear when carrying out and completing a task. This means that the learners may need to use CSs in communication tasks as they want to negotiate meaning.

According to Pica, Kanagy, & Falodun (1993), the most effective task type in terms of opportunities for negotiation of input and modification of interlanguage is the jigsaw task type, while the least effective is the opinion exchange task type.

In their article Pica, Kanagy, & Falodun (1993) presented a typology for communicative tasks which have the main features of *interactional activity* and

communication goal. In the typology, the features *interactional activity* and *communication goal* are divided into categories of *interactant relationship*, *interaction requirement*, *goal orientation*, and *outcome options*.

Interactant relationship explains the responsibilities given to task participants to hold, request and/or supply the information needed to achieve task goals. Participants can be either mutual information requesters and suppliers, or they can be independent requesters to suppliers of requesters. Long (1985) pointed out that when participants engage in a relationship of mutual request and suppliance, they exchange information in a two-way direction. However, when the relationship of information request and suppliance becomes less mutual and more differentiated, information flows in a one-way direction from supplier to requester.

Interaction requirement explains whether obligations to request or supply task-related information are required or optional. *Goal orientation* can be convergence or divergence. According to Duff (1986), if the shared goal of learners is to reach a mutually acceptable solution, the task is characterized as a “convergent task type”. If the learners have independent or opposite goals then the task type is characterized as “divergent task type”. *Outcome options* can be the range of acceptable task outcomes available to interactants in attempting to meet the task goals.

According to Pica, Kanagy, & Falodun’s typology, a task which promotes the greatest opportunities for learners to experience comprehension of input, feedback on production, and interlanguage modification is one which meets these four criteria:

1. Each interactant holds a different portion of the information which must be exchanged and manipulated in order to reach the task outcome.
2. Both interactants are required to request and supply this information to each other.
3. Interactants have the same or convergent goals.
4. Only one acceptable outcome is possible from their attempts to meet this goal.

When these criteria are met learners and their interlocutors can find opportunities for negotiation. This explains why jigsaw task type is the most effective one in terms of opportunities for negotiation of input and modification of interlanguage as it satisfies the four conditions outlined above. Information gap, problem solving, decision-making and opinion exchange task types follow jigsaw task-type from most facilitative to least facilitative for SLA according to these criteria.

In CSs studies various kinds of tasks have been used in order to make students interact and elicit CSs from those interactions. Among the various tasks the concrete picture description tasks in which pictures of real-world objects are shown to learners who are asked to describe them for their interlocutors to either identify the objects or to reconstruct the picture are the ones most commonly used (Poulisse, 1990; Bialystok, 1983; Yule & Tarone 1987).

Apart from concrete picture description tasks, novel abstract figure reference tasks which are abstract pictures that are unconventional, that is, no specific terms or names that can be used to refer to them, are shown to the participants (Poulisse, 1990; Kellerman, Ammerlan, Bongaerts, and Poulisse, 1990; Russel, 1997).

Concept-identification tasks in which not only concrete lexical items but also abstract concepts are used as referents are employed to elicit CSs as well (Paribakht, 1985; Chen 1990).

Pellettieri (2000) investigated whether negotiation of meaning occurred in task-based synchronous CMC through five communicative tasks which ranged from focused open conversation to more closed tasks such as jigsaw-type of tasks. Blake (2000) in order to test whether Pica, Kanagy, and Falodun's (1993) argument about the superiority of jigsaw and information-gap tasks was also true for students in CMC environment, used jigsaw, information-gap and decision-making tasks in his study. Smith (2003b) used decision-making and jigsaw tasks to examine the use of CSs in CMC and Chun (2003) explored meaning negotiation with jigsaw and information gap task types.

In CMC research, on the other hand, the role of task type on CS use has not been widely investigated. There is only one study (Smith, 2003b) which analyzed the use of CSs in synchronous CMC with jigsaw and decision-making task types.

Therefore, previous research reveals that in order to make language learners interact meaningfully in the TL and elicit CSs, communicative tasks should be employed by the researchers.

2.6. Conclusion

This chapter has tried to shed light on the important aspects of the present study. First, the importance of interaction in language learning has been summarized, and the importance of CSs in foreign language learning contexts has been explained. Secondly, the main classifications of CS and research findings about CSs which reveal that learner variables, task type and features of the learning context affect the use of CSs have been reported.

Furthermore, CMC, its genres, the similarities between CMC and spoken communication have been explained with previous research findings which reveal

several benefits of CMC for language learning contexts. Providing a less threatening environment, promoting high participation among language learners, facilitating sociolinguistic, grammatical and interactive competence with its highly motivating medium, promoting negotiation of meaning which is one of the key elements in language learning, are among the benefits of CMC to language learning.

The role of task type in CS studies has also been portrayed and it was found that various tasks were used in CS studies in face-to-face communication. However, it can be seen that the use of CSs and the role of task type on CS use have not been widely investigated. It was only Smith (2003b) who analyzed the role of task type on the use of CSs in synchronous CMC, and the scarce research on the use of CSs in CMC has shown that CSs are also used in CMC as in face-to-face communication.

In conclusion, since there is a scarcity of research on the use of CSs among non-native/ non-native learner negotiated interaction, and on the effects of task types on the use of CSs in synchronous CMC, the present study aims to fill this gap.

CHAPTER 3

METHODS AND PROCEDURES

3.1. Introduction

The methods and procedures of the present study will be described in this chapter. The chapter will start with an explanation of the research questions and variable definitions and will continue with the explanation of the participants and the materials that were used to collect data. Finally, the data collection and analysis procedures will be described in detail.

3.2. Research Questions

This study examines the use of communication strategies (CSs) and the effects of different types of tasks on the use of CSs in synchronous computer-mediated communication (CMC) environment. Furthermore, this study examines junior ELT students' attitudes towards using computers for communication and writing, and whether there will be any change in their attitudes towards the use of computers for communication and writing after the implementation of the present study. Based on these, the present study seeks answers to the following research questions:

1. What communication strategies do junior ELT students use in synchronous computer-mediated communication?
2. Do the frequency and type of communication strategies differ across different types of tasks?
3. What are the attitudes of junior ELT students' to the use of computers for communication and writing and do their attitudes change after the implementation of the study?

3.3. Definitions and Measurements of Variables

3.3.1. Research Questions 1 and 2

Independent Variable

Task Type:

Task type is a categorical variable with three levels: a) jigsaw, b) decision-making, c) opinion-exchange.

Dependent Variable

Type and Frequency of CS Use :

The dependent variable of the first and second research questions is the type and frequency of communication strategy use. For communication strategy usage, the present study made use of Dörnyei & Scott's (1997) taxonomy and Smith's (2003b) findings. The use of communication strategies was first analyzed according to 36 communication strategies based on Dörnyei & Scott's (1997) taxonomy and 5 communication strategies based on Smith's (2003b) findings. In Dörnyei & Scott's (1997) taxonomy, communication strategies were divided into three categories as a) direct strategies b) interactional strategies c) indirect strategies. A fourth category, paralinguistic strategies, was added to the classification of this study based on Smith's (2003b) study on the use of communication strategies in computer-mediated communication. The CSs in Dörnyei & Scott's (1997) taxonomy are developed for face-to-face communication and do not include CSs such as the use of emoticons or capitalizing words for emphasis that might occur in synchronous CMC environment.

After the identification of the types of CSs the frequency of each type of CS was determined and compared across different task types.

3.3.2. Research Question 3

Independent Variable

The use of computers for communication and writing

The third research question investigates junior ELT students' attitudes to the use of computers for communication and writing. In CMC computers provide direct human-to-human communication, by offering them with various types of communication genres such as e-mail exchange and chat. The third research question investigates the students' attitudes to this medium as opposed to a face-to-face one for communication. The independent variable is exposure to the synchronous CMC environment.

Dependent Variable

Students' Attitudes

The dependent variable of the third research question is the students' attitudes to the use computers for communication and writing. Whether there was a change in the students' willingness to use computers for communication and writing is investigated. This is a continuous variable measured through a questionnaire developed by Warschauer (1996b).

3.4. Participants

The study was conducted at the Department of Foreign Language Education (FLED), at Boğaziçi University where the medium of instruction is English. The data was collected from 36 native speakers of Turkish who were in their junior year in FLED. Among the participants there were 3 male students and 33 female students. The students were selected on a voluntary basis. In order to prevent the loss of

participants, the students were awarded with 10% for one of the FLED courses they were enrolled in.

The students can be considered as advanced level learners of English for the following reasons: First, they passed the Boğaziçi University English Proficiency Test (BUEPT) to be admitted to the FLED department. The overall passing grade for BUEPT is 60 which equals a minimum score of 213 in the computer-based TOEFL. Second, the students passed the writing component of the BUEPT. In order to be excluded from the writing component of BUEPT students must have a score of 4.5 from the writing section of TOEFL. Third, they had taken 30 undergraduate courses in which the medium of instruction was English before the time of data collection.

The pre-treatment questionnaire (See Appendix F) given before the data collection procedure revealed that the average age of the participants was 21. While most of the participants had a computer at home, six of the participants indicated that they did not have a computer at home. The participants rated their typing ability and computer knowledge as “good” with an average of “3” out of a scale from 1 to 5 with 1 meaning “poor” and 5 meaning “excellent”. The participants were also asked whether they used computers for word-processing, e-mail, world-wide-web and chat “a lot”, “a little” or “never”. It was found that the participants used computers for word-processing “a lot” with a mean score of 2.97 where 3 means “a lot”, 2 means “a little” and 1 means “never”. In terms of the use of computers for e-mail and world wide-web, all the students indicated that they used computers for e-mail and world wide-web “a lot” with a mean score of 3. The mean score for the use of computers for chat was found to be 2.17 which indicated that the participants used computers for chat “a little”. Therefore the participants were determined to be similar in terms of their experiences with computers.

3.5. Data Collection

In order to answer the research questions of the study three types of tasks: jigsaw, decision-making and opinion-exchange tasks; an attitude questionnaire; a post-session questionnaire and on-line chat sessions during which students completed six different tasks by using Yahoo! Messenger were used.

3.5.1. Application

One of the applications which enable learners to communicate with each other in real-time is Yahoo! Messenger which is an instant messaging software which can be freely downloaded and which enables people to exchange written or voice messages in real time with other people over the Internet. In order to send and receive messages, there has to be an Internet connection and once the software is set up, an ID should be obtained in order to receive and send messages, and then the person can create a list of contacts to chat with. As the software enables the person to see who is online at a particular moment, the person can begin a conversation.

<http://www.yahoo.com> provides more information on system requirements, text features, and download instructions.

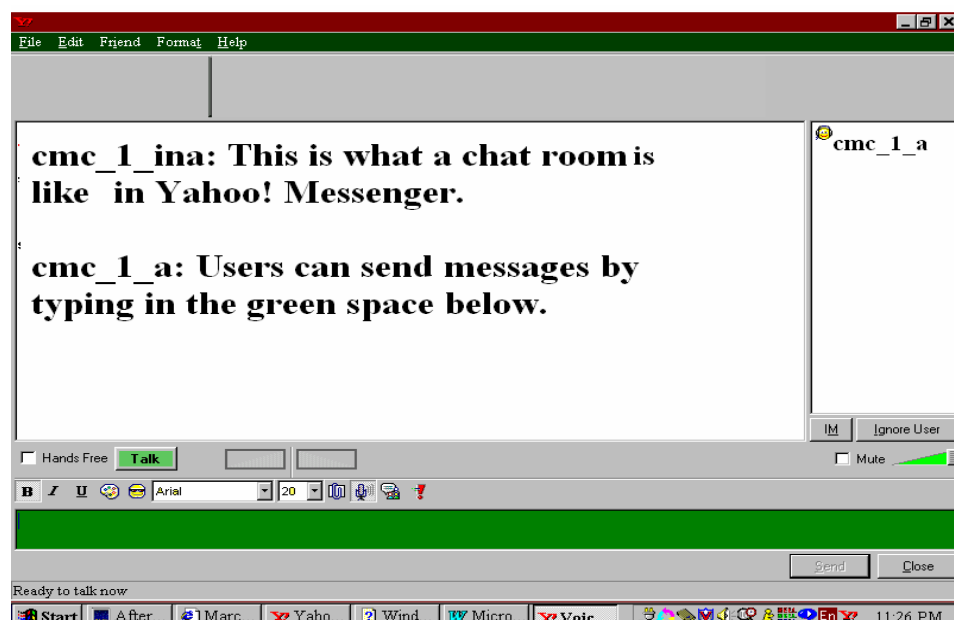
In the present study, an ID was taken for each of the participants and pairs were randomly matched by the researcher. The IDs were like *cmc_1_ina* and *cmc_1_a*. The pairs were randomly matched as *cmc_2_ina* to *cmc_2_a*. It was only the researcher who knew who was chatting with whom. The IDs were taken by the researcher and the participants were matched anonymously and randomly as the researcher wanted to make students chat only about the given tasks. As Yahoo! Messenger chat environment can be open to visitors from anywhere and anytime as long as the person is online, students with existing Yahoo IDs were not allowed to use them, and in order to be able to prevent outsiders from contacting the students,

IDs such as *cmc_1_ina* were taken as it was difficult for outsiders to guess such IDs for the purpose of blind chat. Furthermore, in order to make students feel comfortable in expressing their opinions freely during their chat sessions and in order to prevent two close friends from being matched together and talking about topics other than the tasks, the pairs were anonymously and randomly matched and the researcher kept the information of who was chatting with whom confidential.

Yahoo! Messenger was chosen as the software for this study for several reasons. Cost-effectiveness is the first reason among all since it was very difficult to afford an application that was designed for pedagogical purposes. Secondly, downloading Yahoo! Messenger and taking accounts are fast and easy. Thirdly, most of the participants had heard about Yahoo! Messenger before and were familiar with it. Another reason for choosing Yahoo! Messenger was that it automatically saves all text chats and allows the researchers to carry out their analysis.

Figure 3.1

A Screenshot Showing a Typical Chat room in Yahoo! Messenger.



3.5.2. *Attitude Questionnaire*

In order to discover junior ELT students' attitudes to the use of computers for communication and writing, a questionnaire developed by Warschauer (1996b) was used. This questionnaire (See Appendix F) was divided into two sections. The aim of the first section was to gather demographic information like the age, sex, native language of the students, self-rating of typing ability, self rating of computer knowledge, whether the student had a computer at home and if so for how long, and the amount of experience in using word processing, e-mail, the World Wide Web and chat. The second section had thirty items which analyzed the participants' attitudes about using computers. The first five questions were about the use of computers for word processing. The next 11 were about the use of computers for communication. The final 14 questions were about participants' general feelings about using computers.

The questions were answered on a five-point Likert scale where 5 was the highest score, meaning "strongly agree" and 1 was the lowest score meaning "strongly disagree". Seven of the questions were reverse-coded and required negative responses to indicate a positive attitude to ensure the reliability of the questionnaire.

The participants were first given the first part of the questionnaire and then the second part and they were informed that the survey was anonymous. The questions were in English. The researcher did not translate the questions into the participants' native language as all the students had an advanced level of English proficiency. In order to ensure the reliability of the second part reliability coefficients were taken and Cronbach's alpha revealed that it had a high internal reliability (Alpha: .779).

In order to see whether there was a change in the participants' attitudes to the use of computers for communication and writing after the study, the second part of the questionnaire was administered again after the treatment.

3.5.3. Tasks

Three types of tasks were used in this study: a) jigsaw b) decision-making and c) opinion-exchange. The selection and development of these tasks were mostly based on previous studies conducted by Pellettieri (2000); Blake (2000); Smith (2003b) and a collection of articles edited by Crookes & Gass (1993).

Since it is important for the researcher to understand what the participants intend to convey in order to be able to identify CSs, rather than providing participants with open discussion topics, three different types of tasks in which participants were oriented towards goals were used in the present study.

The tasks of the present study; a) jigsaw b) decision-making c) opinion-exchange were chosen according to the features presented in the table below categorized by Pica, Kanagy, & Falodun (1993).

Table 3.1

Communication task types for L2 research and pedagogy analysis based on: Interactant (X/Y) relationships and requirements in communicating information (INF) to achieve task goals.

	INF holder	INF requester	INF supplier	INF requester-supplier relationship	Interaction requirement	Goal orientation	Outcome options
Task Type:							
Jigsaw	X&Y	X&Y	X&Y	2 way (X to Y & Y to X)	+ required	+ convergent	1
Information Gap	X or Y	X or Y	X or Y	1 way > 2 way (X to Y/Y to X)	- required	+ convergent	1
Problem Solving	X=Y	X=Y	X=Y	2 way > 1 way (X to Y&Y to X)	- required	+ convergent	1
Decision Making	X=Y	X=Y	X=Y	2 way > 1 way (X to Y&Y to X)	- required	+ convergent	1+
Opinion Exchange	X=Y	X=Y	X=Y	2 way > 1 way (X to Y&Y to X)	- required	- convergent	1+/-

Jigsaw: In jigsaw tasks the interactants (X) and (Y) hold portions of a totality of information which must be exchanged and manipulated as they work convergently toward a single task goal. The flow of information is two-way, the interaction is absolutely required as they alternately seek and give information in a mutual relationship in order to accomplish the task

Decision-making: In decision-making tasks each interactant has shared access to the information to complete the task ($X=Y$) whereas in jigsaw tasks the interactants have the portions of the information to complete the task ($X\&Y$). In decision-making tasks, a two-way exchange of information is possible but interaction is not necessary as one interactant can complete the task using the information to make the decision. The difference between jigsaw and decision-making tasks is that in decision-making tasks although participants are expected to work toward a single outcome; they have a number of outcomes available to them, whereas in jigsaw tasks the participants are expected to achieve a single outcome which allows for no options in order for the task to be completed.

Opinion-Exchange: These are the tasks which engage learners in discussion and exchange of ideas. The fewest opportunities for comprehension, feedback, and modified production are found in opinion exchange tasks as there is no requirement for interaction, and therefore a single interactant (X or Y) might dominate the interaction. As interactants are permitted, but not expected, to converge toward a single opinion or goal, any number of outcome options, including no outcome at all, is possible. Thus, the opinion exchange task could end with interactants continuing to hold the contradicting opinions with which they began.

When choosing these tasks for the present study the researcher aimed to use tasks which have different characteristics in terms of the information holder, the information requester- supplier relationship, goal orientation and outcome options.

Jigsaw, decision-making and opinion-exchange type of tasks were chosen for the present study for several reasons. (See Appendix G) First of all, these were the tasks that were mostly used by the researchers in the literature to collect data. Therefore, the researcher had the intention of comparing her results with previous studies. Secondly, the careful examination of the task-type categorization table presented by Pica, Kanagy, & Falodun (1993) revealed that the chosen tasks all have different characteristics in terms of *interaction requirement*, *goal orientation* and *outcome options*. That is, while jigsaw tasks require *interaction*, decision-making and opinion-exchange tasks do not require it. While jigsaw and decision-making tasks are *convergent* in terms of goal orientation, opinion exchange tasks are divergent. And while jigsaw tasks require a *single outcome*, decision making tasks require a single outcome out of more than one possible outcome, and in opinion-exchange tasks reaching an outcome is optional. Thirdly, in face-to-face communication environment it was usually found that in terms of the opportunities for negotiation of input and modification of interlanguage, jigsaw type tasks were the most effective and opinion-exchange tasks were the least effective. The researcher aimed to find out which task type would allow communication strategy usage in terms of quantity and variety in synchronous computer-mediated communication environment.

Furthermore, Long (1981) found that the type of communication task affected the amount of negotiation work. In his study he found that there were significant differences in the relative frequencies of interactional adjustments in two-way exchange tasks whereas one-way exchange tasks did not result in significant

differences in the interactional adjustments across native speaker- native speaker and native speaker –non-native speaker dyads. Therefore, it was assumed that the more the participants engage in communication the more they use communication strategies and therefore two-way exchange communication tasks were used in the present study.

Finally, in terms of the use of CSs in task based CMC Smith (2003b) used jigsaw and decision-making tasks and suggested that future research should investigate the role of task type in communication strategy use by expanding the number of task types since no task type effect was found between jigsaw and decision-making task types in his study. Therefore, in order to compare the findings of this study with Smith's (2003b) findings, and taking into account the suggestion Smith(2003b) made, another task type- opinion-exchange- was added to this study in order to investigate the use of CSs.

In the present study, the participants were given two jigsaw, two decision-making and two opinion-exchange type tasks over the six sessions they met. For the jigsaw type of tasks each person in the pairs was given different versions of the same pictures which differed in six ways from their partner's and the participants were asked to describe the pictures to each other so as to identify those six differences. The jigsaw tasks had been tried before the data collection with two advanced-level learners and two native speakers of English to check whether they resulted in interaction and they were found to result in interaction.

The decision-making tasks were taken from a previous study of Duff (1986). In her study Duff used the tasks "Desert Island" and "Sad Story" as "problem-solving" tasks. In "Desert Island", pairs had to reach an agreement on a list of items most critical for survival, and in "Sad Story", pairs had to reach an agreement on

who carries the greatest responsibility for an accident. Duff had labeled these tasks as “problem solving” tasks, however, Pica, Kanagy, & Falodun (1993) considered these tasks as “decision making” type of tasks. According to the typology they proposed, in problem solving tasks, interlocutors are expected to achieve a predetermined single goal, whereas in decision-making tasks, interlocutors can reach a number of outcomes. Therefore, in line with Pica, Kanagy, & Falodun (1993), the tasks used in Duff’s study are considered as decision making type of tasks in the present study.

The opinion-exchange tasks were also taken from Duff’s (1986) study and they consist of one-to-one debates on the topics of the positive and negative contributions of television to society and on direct versus indirect relationships between age and wisdom. The participants in the same pair were assigned different viewpoints on these topics and were asked to defend the given position and refute their partner’s with as many arguments as possible. (See Appendix G for the tasks that were used)

3.5.4. Post-session Questionnaire

After the treatment, a post-session questionnaire which was adapted from Wang (1993) was administered to the participants. (See Appendix H) The questionnaire was sent through e-mail and out of 36 participants 26 responded to it. The questionnaire consisted of 11 questions, 8 of the questions were five-point scale and 3 of them were open ended. The purpose of the post-session questionnaire was to collect more information about the participants’ experiences and feelings about the computer-mediated communication and to cross-validate the findings of the attitude questionnaire.

3.6. Data Collection Procedures

The preparation of the materials including the selection of the computer application, tasks, attitude and post-session questionnaires, finding the participants, and computer labs lasted for approximately 5 months (October 2004 – March 2005). The data collection procedure lasted for 8 weeks, including the training session and the spring break of the university (April 5th – May 18th).

The data collection sessions were held in the two computer laboratories of the Faculty of Education, Boğaziçi University. The researcher made use of 18 computers in each laboratory and before data collection started Yahoo! Messenger was downloaded to the 36 computers in these laboratories.

Except for the post-session questionnaire which was administered through e-mail, all the instruments used for the data collection procedure were given in regularly scheduled meetings in the computer laboratories. The participants met once a week for 6 weeks in the campus labs and since participation was awarded with 10% extra credit for one of their courses, the researcher managed to prevent the loss of participants during these 6 weeks and the pairs remained the same for each task for 6 weeks.

Before the data collection, the researcher held a training session in which the participants received an introduction to Yahoo! Messenger and were asked to practice communicating with an anonymous partner online in real time. Before the training session, the researcher took 36 Yahoo! Messenger accounts such as *cmc_1_ina* and *cmc_1_a* and assigned them to each participant and the participant *cmc_1_ina* chatted with *cmc_1_a* in every chat session for 6 weeks. In the training session, the participants were first given 15 minutes to answer Warschauer's (1996) questionnaire which sought to understand the extent of students' attitudes to the use

of computers for communication and writing. After all participants submitted their questionnaires, the researcher explained what Yahoo! Messenger was and how text-messages could be sent and received by using it and how the participants could save and send the text-messages in their chat sessions to the researcher's e-mail address. Once the researcher explained these by using the projector, she randomly divided the participants into two groups for two different computer labs and then they were randomly assigned their Yahoo accounts. 18 participants were randomly assigned accounts like *cmc_1_ina*, *cmc_2_ina*, *cmc_3_ina*, etc...The other 18 participants were assigned accounts like *cmc_1_a*, *cmc_2_a*, *cmc_3_a*, and so on up to *cmc_18_ina* and *cmc_18_a*. The accounts and passwords were given to the participants written on a paper which included information about how to receive and send text-messages and save and send their chat sessions as well. The papers also included a calendar about when and what time the students were expected to participate in the study. The participants were asked not to share their account and password information with each other and they were asked to keep themselves anonymous during 6 weeks for confidentiality purposes. (see Appendix I)

The last step of the training session was to allow the participants to practice chatting by using Yahoo! Messenger and to save and send their messages to the researcher. When each participant got their accounts and signed-in to Yahoo! Messenger, the researcher gave an information-gap type of task to the participants to practice chatting and asked them to chat for 15 minutes and send their chat sessions to the given e-mail address. (see Appendix J)

During each meeting the participants completed 6 different tasks; two jigsaw tasks, two decision-making tasks and two opinion-exchange tasks. As suggested by

Huck (2004), the order of the tasks was randomized in order to prevent a possible order effect. The tasks were presented to the participants in the following order:

1 st session: jigsaw	4 th session: decision-making
2 nd session: decision-making	5 th session: jigsaw
3 rd session: opinion-exchange	6 th session: opinion-exchange

The participants were given 35 minutes to work-on each task and no matter if they completed the task or not they were asked to save and send their chatscripts. During 6 weeks, the researcher printed-out the participants' chat scripts after each session.

At the end of the last session, the participants were asked to answer Warschauer's (1996b) questionnaire once again as the researcher wanted to find out whether there would be a change in the participants' attitudes to the use of computers for communication and writing. In addition to this, one-day after the last session, the participants were e-mailed an optional post-session questionnaire and were given one week to respond through e-mail. 26 of the participants responded. By the last week of May the data collection procedure was completed.

3.7. Data Analysis

The data analysis procedures will be explained according to the research questions in the following section. First the coding procedure and the taxonomy used in the study will be presented and then how the data was analyzed will be explained in reference to the research questions.

3.7.1. *Coding Procedure*

The interaction of 18 pairs were saved by the participants and sent to the researcher's e-mail address. Then they were printed out and the interactions were coded according to Dörnyei and Scotts' (1997) taxonomy and the paralinguistic elements that occur in CMC environment from Smith's (2003b) study. First, the coding procedure will be explained, and then the taxonomy of Dörnyei and Scott (1997) will be presented. The classification of the present study will be presented as the last step of this section.

After reviewing all the existing taxonomies of CSs, Dörnyei and Scott's (1997) taxonomy was decided to be used. Like all existing taxonomies, this taxonomy was classified for face-to-face communication. Since the present study focuses on the use of CSs in a different medium than a face-to-face one, some of the elements from Smith's (2003b) study on the use of communication strategies in computer-mediated communication were utilized (i.e. paralinguistic strategies). Smith (2003b) combined various communication strategy categories from multiple sources in SLA literature and included some that are unique to his study on the use of communication strategies in computer-mediated communication. The "paralinguistic strategies" which are the use of emoticons, substitution, capitalizing words for stress, punctuation or onomatopoeia were used in the present study. Instead of using a combination of existing communication strategy taxonomies like Smith (2003b), Dörnyei and Scott's (1997) taxonomy in which CSs were classified according to the manner of problem management- that is how CSs help to resolve conflicts and achieve mutual understanding was used. Since this study adopts an interactional and product-based approach to the use of CSs, Dörnyei and Scott's (1997) taxonomy was chosen because it is the most elaborate taxonomy among the other product-based

taxonomies that cover the CSs identified in previous taxonomies. This can be seen from the fact that out of the 33 CSs in Dörnyei and Scott's (1997) taxonomy, 22 were used in other taxonomies as well. Therefore, by choosing a taxonomy which was used for face-to-face communication medium and which is the most elaborate one that covers 22 of the CSs among all existing CS taxonomies, the researcher is able to investigate whether the emerging CSs in computer-mediated communication and face-to-face communication are similar or different. According to Dörnyei and Scott (1997) "CSs include every potentially intentional attempt to cope with any language-related problem of which the speaker is aware during the course of communication (p.179)" and as they covered all types of communication problem-solving mechanisms, their taxonomy was used in the present study with a little adaptation to code the CSs used in a synchronous CMC environment.

When coding the CSs according to this taxonomy and according to the elements from Smith's (2003b) study, the interlocutors' turns were taken as an item to count the communication strategies. For example:

cmc_6_a: is there smth strange with the foot of the woman (item 1)

cmc_6_ina: what?

cmc_6_a: his foot (item 2)

In some cases more than one communication strategy was used in the same item and in those cases, each strategy was counted separately in the coding process. In the example below, two strategies (circumlocution and verbal strategy markers) were used and counted as two different strategies.

cmc_6_ina: *it is the place where the "34 yk 7890" is written I donot know*
it si english name

When identifying CSs, it was argued that a noticeable feature of the majority of examples of CSs is that they involve acts of reference. (Yule & Tarone, 1990). In the present study some referents were identified as communication strategy usage and some were not in line with Tarone & Yule's (1990) argument. In Yule and Tarone's (1990) example below where a caterpillar is referred to as *a turtle*, the use of the word *turtle* is accepted as a transfer strategy since the word *turtle* is similar to the speaker's L1 expression for caterpillar (tirtl).

"There are a little animal on the mushroom but I don't know what's its name. It's a turtle? I think it's a turtle." (p. 181)

In this example, although there are two reference words as mushroom and turtle, only the word turtle (the second referring expression) was taken as a usage of communication strategy because when both referents are considered the first referent is a more typical word that a native English speaker would use, and the other one (turtle) is a much less typical one. Therefore, the underlying reason for trying the jigsaw tasks with two native speakers of English was to take into account the native speaker's communicative behavior as a basis for comparison and to identify particular referents as communication strategy use or not.

Another consideration in the identification of the participants' CS use is the use of strategy markers. Very often a participant's statement contained several CSs, that is, they occurred within the framework of another CS. For example:

cmc_7_a: *I don't know the correct name but let's
say hair of the vacuum cleaner*

In the example above, the verbal strategy marker "*I don't know the correct name but*" signals a problem in communicating the intended meaning, thus signals for a CS usage, and the expression "*hair of the vacuum cleaner*" is coded as

communication strategy use. As mentioned before, when more than one communication strategy was used in the same item, each strategy was coded separately in the coding process.

In order to check inter-rater reliability the researcher trained a native English instructor to code 35% of the data for communication strategy use. When inter-rater reliability was calculated percent agreement analysis was made according to Holsti's (1969) coefficient of reliability (C. R.) which investigates the percentage of observed agreement between the coders. The percentage of agreement between the coders was found to be 85%, which showed that the researcher and the other coder were in agreement 85% of the time, indicating a high inter-rater reliability. In order to provide intra-rater reliability the data was coded twice by the researcher. The intra-rater reliability according to Holsti's (1969) coefficient of reliability (C. R.) was found to be 89%, which is also considered high.

3.7.2. Dörnyei and Scott's Taxonomy

Dörnyei and Scott (1997) classified CSs according to the manner of problem management, that is how CSs can solve problems to achieve mutual understanding when communication breakdowns occur. They divided CSs into three separate categories as direct, indirect and interactional CSs. Further information about Dörnyei and Scott's (1997) inventory of strategic language devices with descriptions and definitions can be found in Appendix E.

3.7.3. Classification of the CSs in the Present Study

Although the researcher coded the data according to Dörnyei and Scott's (1997) taxonomy which was developed for face-to-face communication environment, some modifications and adaptations were made as the study was carried out in a synchronous computer-mediated communication environment. Some of the strategies in Dörnyei and Scott's (1997) taxonomy could not be used due to the differences in communication environments. To be able to cover strategies that might occur in text-based communication environment some other strategies like the paralinguistic strategies that were identified in Smith's (2003b) study were also used. The present study categorized CSs into four categories as a) direct strategies b) interactional strategies c) indirect strategies and d) paralinguistic strategies. The classification of the study will be presented below with examples from the collected data. The typos or misspellings in the chatscripts were not edited.

A) DIRECT STRATEGIES

According to Dörnyei and Scott (1997) direct strategies “provide an alternative, manageable, and self-contained means of getting the (sometimes modified) meaning across.” (p. 198).

1. Message Abandonment: In line with Dörnyei and Scott's (1997) definition *message abandonment* strategy was identified when the learners did not finish their message because of some language difficulty encountered during communication. In the example below *cmc_9_ina* had difficulty in using the word “slippers” and she left the message unfinished.

Example (41): *cmc_9_ina*: she wears white
cmc_9_ina:
cmc_9_a: slippers
cmc_9_ina: yeah slippers

2. Message Reduction (topic avoidance): In line with Dörnyei and Scott's (1997) definition *message reduction* was identified when the learners avoided certain language structures or topics as they found to be problematic. In the example below *cmc_13_ina* and *cmc_13_a* had difficulty with the words “flare”, “utensils” and “flashlight”. In the present study, the identification of message reduction strategy was quite difficult for the researcher since it requires the retrospective comments of the participants. However, in the example below the use of this strategy was obvious since the participants were talking overtly that they did not know the meaning of the words. In this example, it is obvious that the participants face a difficulty with the vocabulary and they decide to omit those vocabulary items.

Example (42): *cmc_13_a*: do you know what flare means

cmc_13_ina: no I do not.

cmc_13_a: utensil?

cmc_13_ina: I dont know, flashlight?

cmc_13_ina: never mind.If we donot know the meaning of them we
can take something else ;)*

* An emoticon signaling “winking”

3. Message Replacement: In line with Dörnyei and Scott's (1997) definition, *message replacement* was defined as forming a new message when not feeling capable of executing the original message. Although the researcher sought for instances of this strategy by overt expressions, or by the use of emoticons as in the case of message reduction strategy, no instances of its usage was found in the data.

4. Circumlocution (paraphrase): In line with Dörnyei and Scott's (1997) definition, *circumlocution* was identified when the learners exemplified, illustrated or

described the properties of the target object or action. In the example below *cmc_15_ina* had difficulty with the word “mop” and she was using circumlocution strategy.

Example (43): *cmc_15_ina*: there are six parts of the thing with the stick

cmc_15_ina: it is used for cleaning the floor

5. Approximation: In line with Dörnyei and Scott’s (1997) definition, in the present study *approximation* strategy was identified when the learners used a single alternative lexical item which shares semantic features with the target word or structure. When coding approximation, the researcher considered whether the vocabulary items used by the participants had a connection with the participants’ L1s (Turkish). For example, for several times, the participants used “moustache” instead of “whiskers”. This word was coded as literal translation rather than approximation as in Turkish the word “bıyık” (moustache) would mean both moustache and whisker. Therefore, if the used vocabulary items had a connection with the participants’ L1, they were coded as literal translation. In the example below *cmc_6_ina* and *cmc_6_a* had difficulty with the word “lighthouse” and instead they used the words “tower” or “triangle”. In Turkish, the equivalent of “tower” or “triangle” cannot be used for “lighthouse”. Therefore, this was coded as approximation.

Example (44): *cmc_6_ina*: lets look the tower in the sea

cmc_6_a: ok

cmc_6_a: on the triangle

cmc_6_a: there are three white lines

6. Use of all-purpose words: In line with Dörnyei and Scott's (1997) definition, *use of all-purpose* strategy was identified when the learners used words like thing, something, stuff, etc... to compensate for the lacking words. In the example below *cmc_3_ina* used an empty word "thing" and "stuff"

Example (45): *cmc_3_ina*: do you think a lady who is 90 that live in some village
have seen more things, went more abroad, did more
stuff than the lady who is 90 and was a diplomat.

cmc_3_a: if not this means the knowledgeable young lady will be
less knowledgeable when she is old

7. Word-coinage: In line with Dörnyei and Scott's (1997) definition, when the learners created a non-existing L2 word by applying a supposed L2 rule to an existing L2 word those strategies were identified as *word-coinage* by the researcher. In the example below *cmc_15_ina* created a non-existing word by applying an existing rule. She added the suffix -al to the word to make an adjective:

Example (46): *cmc_15_a*: we also need firstaidkit too we can hurt
ourselves there may be microps

cmc_15_ina: *infectional* diseases yes so we should take it too

8. Restructuring: In line with Dörnyei and Scott's (1997) definition, *restructuring* strategy was identified when learners abandoned the execution of a word or phrase because of language difficulties and left the utterance unfinished, and then communicated the intended message according to an alternative plan. This strategy differs from message abandonment as in message abandonment the learner does not finish his or her utterance.

Example (47): *cmc_13_a*: so age in this sense is very important how can
a young person have lots of experience where...I mean
knowing something by heart is not knowledge.

9. Literal Translation (transfer): In line with Dörnyei and Scott's (1997) definition *literal transfer* strategy was identified as transferring a lexical item, an idiom, a compound word or structure from L1/L3 to L2. In the example below *cmc_4_a* transferred a Turkish idiom to English.

Example (48): *cmc_4_a*: I say at the beginning I do not go such a place
without a gun. My brain is still in my head. I have not
eaten it with bread and cheese.

10. Foreignizing: In line with Dörnyei and Scott's (1997) definition, *foreignizing*, using a L1/L3 word by adjusting it to L2 phonology and/or morphology and was identified. In the example below instead of "cable" the learner used "cablo" which resembles "kablo" (equivalent of cable) in Turkish.

Example (49): *cmc_10_a*: and there is a cablo black
cmc_10_ina: yes

11. Code-switching (language transfer): In line with Dörnyei and Scott (1997), *code-switch* strategy was defined as including L1/L3 words with L1/L3 pronunciation in L2 speech. This may involve stretches of discourse ranging from single words to whole chunks and even complete turns. In the example below *cmc_7_ina* used "midye" instead of the word mussel:

Example (50): *cmc_7_ina*: on the left of the musical instrument there is something
light colored and its mouth is open.

cmc_7_ina: it can be a big midye

12. Use of similar- sounding words: In line with Dörnyei and Scott (1997), *use of similar- sounding words* was defined as compensating a lexical item whose form the speaker is unsure of with a word (either existing or non-existing) which sounds more or less like the target item. In the example below the learner had difficulty in remembering the word “heel” and used the word “wheel” instead.

Example (51): *cmc_17_a*: the boy has black shoes

cmc_17_ina: yes

cmc_17_ina: with wheel

cmc_17_a: yes

cmc_17_ina: or whatever it is

13. Omission: In line with Dörnyei and Scott (1997), *omission* strategy was defined as carrying on the message when not knowing a word by leaving a gap as if it had been said but no instances of its usage was able to be identified in the data.

14. Self-rephrasing: In line with Dörnyei and Scott’s (1997) definition, *self rephrasing* was identified when the learners repeat a term in order to paraphrase what they had said before.

Example (52): *cmc_4_ina*: yes an electric cable but the cable in is the its place

cmc_4_ina: namely it is working

15. Self-repair: In line with Dörnyei and Scott's (1997) definition; if the learners made self-initiated corrections in their speech this strategy was identified by the researcher as *self-repair* strategy.

Example (53): *cmc_1_ina:* I can see the two wheel?

cmc_1_a: u did not mention the railing

cmc_1_ina: wheels

16. Other-repair: In line with Dörnyei and Scott's (1997) definition when the learners corrected something in their interlocutor's speech the other-repair strategy was identified by the researcher.

Example (54): *cmc_3_ina:* his hands in his pocket

cmc_3_a: yes his hands are in his pocket

B) INTERACTIONAL STRATEGIES

Interactional strategies were defined by Dörnyei and Scott (1997) as the cooperative attempts of the interlocutors to solve the trouble-shooting exchanges.

1. Appeals for help:

1.a.) Direct appeal for help: In line with Dörnyei and Scott's (1997) definition, when the learners turned to the interlocutor for assistance by asking an explicit question concerning a gap in their L2 knowledge, that was identified as *direct appeal for help* strategy.

Example (55): *cmc_17_ina:* what is the name which we use to close our coats?

cmc_17_a: buttons?

cmc_17_ina: yes

1.b.) Indirect appeal for help: In line with Dörnyei and Scott's (1997) definition, when the learners try to elicit help from their interlocutors indirectly by expressing lack of a needed L2 item, either verbally or nonverbally, this strategy was coded as *indirect appeal for help*.

Example (56): *cmc_3_ina*: Like the way we write 34 TR 345
I don't know how you call it

2. Comprehension check: In line with Dörnyei and Scott's (1997) definition, when the learners ask questions to check that their interlocutor can follow them it was identified as *comprehension check* strategy.

Example (57): *cmc_1_a*: do you know what trotter means?
cmc_1_ina: noo
cmc_1_a: lower parts of the trouser leg look at those of the man

3. Own-accuracy check: In line with Dörnyei and Scott's (1997) definition, *own accuracy check* strategy was identified when the learners checked that what they said was correct by asking a concrete question or by repeating a word with a question intonation.

Example (58): *cmc_15_ina*: ok actually I like fresh fruits very much and fresh
Juices too and I thought they will not be fresh anymore
and what If they are spoiled... was it spoiled or what
rotten?

4. Asking for repetition: In line with Dörnyei and Scott's (1997) definition, when the learners request repetition when they cannot understand something properly it was identified as *asking for repetition* strategy.

Example (59): *cmc_5_a*: red ake up

cmc_5_ina: red what

cmc_5_ina: ?

5. Asking for clarification: In line with Dörnyei and Scott's (1997) definition, when the learners request explanation of an unfamiliar meaning structure it was identified as *asking for clarification* strategy

Example (60): *cmc_1_a*: is there a railing in your pic behind the guys

cmc_1_ina: what is railing

6. Asking for confirmation: In line with Dörnyei and Scott's (1997) definition, when the learners request confirmation that they have heard or understood something correctly it was coded as *asking for confirmation* strategy.

Example (61): *cmc_6_a*: the mans hands are on his knees right??

7. Expressing non-understanding: In line with Dörnyei and Scott's (1997) definition, when the learners could not understand something properly they expressed non-understanding verbally or nonverbally. Those instances in the data were identified as *expressing non-understanding* strategy.

Example (61): *cmc_5_a*: on the sight of the man there is two

cmc_5_ina: two of what?

cmc_5_a: stick of hence right?

cmc_5_a: until the car

cmc_5_ina: ??

cmc_5_ina: I don't understand

8. Interpretive Summary: In line with Dörnyei and Scott's (1997) definition when learners paraphrased what they had received from the interlocutor to check that they understood correctly, those instances were identified as *interpretive summary* strategy.

Example (62): *cmc_12_ina:* 3 stripes

cmc_12_ina: 3. difference

cmc_12_a: you mean that the number of stripes is different

9. Responses:

9.a.) Response repeat: In line with Dörnyei and Scott's (1997) definition, when the learners were corrected by their interlocutors and they repeated what was suggested it was accepted as *response repeat* strategy, but no instances of its usage was found in the data.

9.b.) Response repair: In line with Dörnyei and Scott's (1997) definition *response repair* was identified when the participants provided other-initiated self-repair.

Example (64): *cmc_17_ina:* why has just the watching what u hear bad effects

cmc_17_a: what do you mean

cmc_17_ina: sorry there is a comma after why

9.c.) Response rephrase: In line with Dörnyei and Scott's (1997) definition, if the participants rephrased the trigger when their interlocutors could not understand the trigger, this strategy was identified as *response rephrase*.

Example (65): *cmc_3_ina*: what about the third item utensils?

cmc_3_a: I don't know what is it

cmc_3_ina: forks and knives

9.d.) Response expand: In line with Dörnyei and Scott's (1997) definition, when the learners put the problem into a larger context this strategy was identified as *response expand*.

Example (66): *cmc_18_ina*: aren't they vertical to you?

cmc_18_a: ?

cmc_18_ina: the lines lies from north to south

9.e.) Response confirm: In line with Dörnyei and Scott's (1997) definition, when the learners confirmed what was said or suggested by their interlocutors it was identified as *response confirm* strategy.

Example (67): *cmc_7_a*: background?

cmc_7_a: the wall do you mean

cmc_7_ina: yes and the rest white

9.f.) Response reject: In line with Dörnyei and Scott's (1997) definition, when the learners rejected what their interlocutors said or suggested without offering an alternative solution, it was coded as *response reject* strategy.

Example (68): *cmc_6_a*: age brings the wisdom

cmc_6_ina: I am right u mean?

cmc_6_a: nooooo

C) INDIRECT STRATEGIES

Indirect strategies prevent breakdowns in communication and keep the communication channel open. They do not need to be problem-solving devices or provide alternative meaning solutions; however, they still create the conditions for achieving mutual understanding.

1. Use of fillers: Although the *use of fillers* strategy is normally expected to occur in face-to-face communication environment, the researcher investigated their use since it is believed that computer-mediated communication environment shares some features with face-to-face communication environment. Fillers are used when learners try to gain time in order to keep the communication channel open and maintain discourse at times of difficulty. Dörnyei and Scott (1997) exemplified that fillers can range from very short structures such as *well; you know, actually; okay*, to longer phrases such as *this is rather difficult to explain; well, actually, it's a good question* and in the data many instances of the use of fillers were coded.

Example (69): *cmc_6_a*: I mean what kind of influence

cmc_6_ina: you know

cmc_6_a: (after 14 seconds later) many people are affected by
what they see on TV programs

2. Repetitions:

2.a. Self-repetition: In line with Dörnyei and Scott's (1997) definition, *self-repetition* strategy was identified when learners repeated a word or a string of words immediately after they were said.

Example (70): *cmc_1_a*: clouds?

cmc_1_ina: do u have any clouds above the car

cmc_1_ina: do u have any clouds above the car

cmc_1_ina: on the upper left side

2.b. Other-repetition: In line with Dörnyei and Scott's (1997) definition, *other-repetition strategy* was identified when learners repeated a word or a string of words to gain time.

Example (71): *cmc_9_a*: what about the tires?

cmc_9_ina: tires?

cmc_9_a: yeah

cmc_1_ina: what does it mean?

3. Verbal strategy markers: In line with Dörnyei and Scott's (1997) definition, *verbal strategy markers* were identified when learners used verbal marking phrases before or after a strategy to signal that the word or structure does not carry the intended meaning perfectly in the L2 code.

Example (72): *cmc_7_a*: I don't know the correct name but let's
say hair of the vacuum cleaner

In the present study, the researcher identified that the use of quotation marks by the participants to signal their awareness of the inappropriate use of a word were also employed as *verbal strategy markers* in synchronous computer-mediated communication environment. In the example below *cmc_1_ina* knew that the word “arm” was not the right word and she used quotation marks in order to express that she was using it instead of the correct word, which means the tool to open the car door. In fact she transferred the word “arm” from her L1 and she was aware of it.

Example (73): *cmc_1_ina*: and is there an “arm” on the car

4. Feigning understanding: In line with Dörnyei and Scott’s (1997) definition, *feigning understanding* strategy was identified when learners attempted to carry on the conversation though they did not understand something but pretended to.

Example (74): *cmc_8_a*: the car something brown at the back

cmc_8_ina: yes

cmc_8_ina: but I did not

cmc_8_ina: understand exactly what u mean

C) PARALINGUISTIC STRATEGIES

These strategies were not in Dörnyei and Scott’s (1997) classification as they can only occur in a computer-mediated communication environment. Since synchronous CMC environment in the present study is a text-based medium it restricts the use of paralinguistic strategies such as intonation, gestures, body posture, or eye contact which can be used as communication strategies in a face-to-face communication environment. However, there are some paralinguistic strategies which can be identified in a text-based communication environment. Smith (2003b) identified 5

types of paralinguistic strategies in his study. These are *capitalizing words for stress*, *using emoticons*, *onomatopoeia*, *punctuation*, and *substitution*. As the participants in the present study chatted in a computer-mediated communication environment these strategies were also investigated.

1. Capitalizing words for stress: *Capitalizing words for stress* was coded as a CS since in synchronous CMC environment participants cannot emphasize verbally what they want to emphasize. In addition to this, capital words are used to indicate loudness of speech to attract the attention of the learner since it is impossible to indicate it otherwise in a text-based medium. The researcher identified capitalizing words for stress strategy as in the example below:

Example (75): *cmc_l_a*: it has a holder on one of the door

cmc_l_ina: holder?

cmc_l_ina: HOLDER?

cmc_l_a: what do you mean by holder?

cmc_l_ina: STH FOR OPENING THE DOOR

2. Using Emoticons: Emoticons are symbols that use the characters on a computer keyboard to convey emotion or tone in an electronic message. Emoticons are used in e-mail or chat, and other forms of communication using computers. The most popular emoticon is the smiling face (☺). The learners used emoticons to show their various emotions. The use of emoticons compensates for the lack of facial expressions in a text-based communication environment. When the participants expressed their feelings for various reasons with various emoticons, these emoticons were coded by the researcher as *using emoticons* strategy as in the example below.

Example (76): *cmc_9_a*: what is a flare do you know?

cmc_9_ina: what is “large flare”

cmc_9_a: ☺ (*smiling*)

cmc_9_ina: ☺ (*smiling*)

cmc_9_a: let's not take it

cmc_9_ina: ok ☺ (*smiling*)

3. Onomatopoeia: Onomatopoeia represents the aural cues that are used in face-to-face communication to express feelings or to attract attention. The researcher looked for their but no instance of onomatopoeia was identified in the chatscripts when the participants were working on the tasks.

4. Punctuation: When the learners used punctuation such as question and exclamation marks, dots, and commas to indicate pitch and intonation, express surprise, etc., those instances were identified as *punctuation strategy*.

Example (77): *cmc_15_ina*: reading is a passive activity and does not
supply the real atmosphere it sounds just primitive

cmc_15_a: I can not believe u think that

cmc_15_a: the technology developed how people read!!!!

5. Substitution: When the use of abbreviated forms of words like (u= you) were found they were identified as *substitution strategy* in the present study.

Example (78): *cmc_1_a*: u r the winner u should have counted it

The taxonomy above does not include several CSs that are present in Dörnyei and Scott's (1997) taxonomies. These CSs are; mumbling, retrieval, mime and

guessing. Mumbling, retrieval and mime CSs were not included in the taxonomy of the present study since the text-based communication environment of the present study would not allow their usage. According to Dörnyei and Scott (1997), guessing strategy is similar to the confirmation request strategy but they differentiated between these strategies by the degree of the certainty of the attempted key word. This was not included in the taxonomy of the present study since it would be very difficult for the researcher to identify whether the learners were certain or not when they were asking for confirmation.

In conclusion, for the classification of CSs in the present study the strategies that were adopted from Dörnyei and Scott's (1997) taxonomy were *a-) direct strategies*: message abandonment, message reduction, message replacement, circumlocution, approximation, use of all-purpose words, word-coinage, restructuring, literal translation, foreignizing, code switching, use of similar sounding words, omission, self-rephrasing, self-repair and other repair *b-) interactional strategies*: appeals for help, comprehension check, own accuracy check, asking for repetition, asking for clarification, asking for confirmation, expressing nonunderstanding, interpretive summary, and responses *c) indirect strategies*: use of fillers, repetitions, verbal strategy markers and feigning understanding. Four communication strategies which are present in Dörnyei and Scott's (1997) taxonomy- *mumbling, retrieval, mime and guessing*- were excluded from the classification of the present study since they could not be identified in a text-based communication environment. In addition to this, a fourth category *d-) paralinguistic strategies*: capitalizing words for stress, using emoticons, onomatopoeia, punctuation, and substitution was included in the classification of the present study

from Smith's (2003b) study, since the text-based communication medium that was used in this study required them.

3.7.4. Analysis of the Data According to the Research Questions

Research Question # 1:

What communication strategies do junior ELT students use in synchronous computer-mediated communication?

In order to find out the communication strategies used by the participants the chat scripts were coded using the coding system described in the previous section. Then, the total number of each communication strategy was calculated for each pair and then their mean scores were taken by using descriptive statistics. In addition to this, the researcher used descriptive statistics to find which category of the communication strategies - direct, interactional, indirect and paralinguistic - was the most frequently used one. The main purpose of the descriptive analysis for the first research question was to reveal the frequency of each communication strategy used over six weeks time through three different task types in a synchronous computer-mediated communication environment.

Research Question # 2:

Do the frequency and type of communication strategies differ across different types of tasks?

In order to find out the effect of task type on communication strategy use this research question was analyzed in two steps. First, the effect of task type on the overall communication strategy use was analyzed by conducting a one-way repeated measures ANOVA. Thus, the total number of communication strategies used in each task was compared for each task type- jigsaw, decision-making and opinion-

exchange- to see whether these tasks had an effect on the use of communication strategies.

Second, the frequency of communication strategies for the categories of CSs- direct strategies, indirect strategies, interactional strategies and paralinguistic strategies- was compared according to the different task types. Thus, in order to find whether task type affected the use of communication strategies in terms of the sub-categories presented in the study's taxonomy, four separate repeated measures ANOVA were conducted for each sub-category of communication strategies.

The assumptions associated with one-way repeated measures ANOVA were checked before running the analyses. First of all, random assignment and independence of observations were met with an appropriate design for the study. Secondly, the assumption of normality was checked with Kolmogorov-Smirnov test of normality. If the test is not significant ($p > 0.05$) it shows that the distribution of the sample is not significantly different from a normal distribution. Since one-way repeated measures ANOVA is fairly robust to violations of the normality assumption no correction was made when this assumption was violated.

Mauchly's Test of sphericity assumption which is used to see whether the variances of the differences between experimental conditions are equal was also checked. If the sphericity assumption is not sustained the F-ratios produced by SPSS cannot be trusted. Therefore, when the assumption of sphericity was not met, Greenhouse-Geisser correction was used.

Research Question # 3:

What are the attitudes of junior ELT students' to the use of computers for communication and writing and do their attitudes change after the implementation of the study?

In order to investigate the students' attitudes to the use of computers for communication and writing and to find out whether their attitudes changed after the study, an attitude questionnaire was given to the students before and after the treatment. To discover the attitudes of the students to the use of computers for communication and writing first, a mean attitude score for each question as well as overall mean scores for pre and post questionnaires was calculated for each student's responses to all 30 questions for the pre and post questionnaires. Then the attitude scores of the pre-questionnaire were compared to a mean score of 3- which hypothetically represents a neutral score- using paired samples t-tests. This calculation was made to find out whether students' attitudes were positive or negative. In order not to run 30 separate t-tests, p was multiplied by 30 and the significance level was set at .0017.

The same calculation was done for the post-questionnaire and after getting the mean attitude score for the post-questionnaire a paired samples t-test was conducted between the pre-questionnaire and post-questionnaire's mean attitude scores to see whether the students' attitudes to using computers for communication changed or not.

In order to cross-validate the findings of the attitude questionnaire, students' responses for 8 five-point scale questions of the post-session questionnaire descriptive statistics were used. The three open-ended questions of the post-session

questionnaire were coded and analyzed with qualitative data analysis methods. The data were reviewed sentence by sentence and statement patterns were investigated.

3.8. Summary

The research questions, data collection methods, and data analysis are summarized in the table below.

Table 3.2
Overview of Research Questions and Related Procedures

Research Questions	Instruments	Data Analysis	Expected Results
1. What communication strategies do junior ELT students use in synchronous computer-mediated communication?	- Three types of tasks; a.) jigsaw, b) decision-making and c) opinion-exchange - Yahoo! Messenger - Dörnyei & Scott's (1997) taxonomy and Smith's (2003b) study.	Descriptive statistics	Paralinguistic strategies were expected to occur more frequently because of the synchronous CMC environment. No expectation could be done with the use of other CSs.
2. Do the frequency and type of communication strategies differ across different types of tasks?	- Three types of tasks; a.) jigsaw, b) decision-making and c) opinion-exchange - Yahoo! Messenger - Dörnyei & Scott's (1997) taxonomy and Smith's (2003b) study.	One- way repeated measures ANOVA	Jigsaw task type was expected to generate the most CS use across all the communication task types.
3. What are the attitudes of junior ELT students' to the use of computers for communication and writing and do their attitudes change after the implementation of the study?	-Warschauer's (1996b) Questionnaire -Post-session questionnaire	One-sample t-test Paired-sampled <i>t</i> - tests. Descriptive statistics qualitative data	A positive attitude or an increase in the positive attitude to the use of computers for communication and writing was expected.

CHAPTER 4

RESULTS AND DISCUSSION

4.1. Introduction

In this part of the study, the findings of the previous research questions followed by a discussion will be presented. The first research question investigated the communication strategies that were used in synchronous computer-mediated communication. The second research question sought to examine the effect of task type on the frequency and type of communication strategy use. The third research question investigated the attitudes of the participants' to the use of computers for communication and writing and whether those attitudes changed overtime. Both quantitative and qualitative analyses were used in answering the research questions. SPSS 13.0 (The Statistical Package for Social Sciences) was used for the statistical analysis of the data. Descriptive statistics, one-way Repeated Measures ANOVAs and paired sample t-tests were used to seek answers for the quantitative analyses.

4.2. Results and Discussion

4.2.1 *The Use of Communication Strategies in Synchronous CMC*

The first research question was;

What communication strategies do junior ELT students use in synchronous computer-mediated communication?

This research question was analyzed in two parts. In the first part, the communication strategies were examined regardless of the categories presented in the taxonomy of the present study. In the second part, the communication strategies were analyzed according to the categories of the present study's taxonomy as a) direct strategies, b) interactional strategies, c) indirect strategies and d) paralinguistic strategies.

As this research question examined the types of communication strategies occurring in three different types of tasks in synchronous CMC environment, descriptive statistics were used. The results of the descriptive statistics showed that 38 out of 41 CSs that were investigated according to the present study's taxonomy were found during synchronous CMC chat. The CSs of "omission", "message replacement" and "onomatopoeia" did not emerge in the data.

A complete table of the results of the descriptive statistics can be seen in Appendix K. In table 4.1 the results of the descriptive statistics according to the categories of CSs and the most frequently used CSs under those categories are presented.

Table 4.1

The Means and Standard Deviations of most frequently used CSs according to the Categories of CSs

Communication Strategies	N (pairs)	M	SD
<u>Direct Strategies</u>	<u>18</u>	<u>156.66</u>	<u>38.27</u>
Approximation	18	39.72	12.56
Use of all-purpose words	18	34.61	12.36
Circumlocution	18	29.05	9.03
Literal translation	18	17.38	14.13
Code switching	18	10.55	7.22
<u>Paralinguistic Strategies</u>	<u>18</u>	<u>79.72</u>	<u>56.43</u>
Substitution	18	37.50	40.17
Using emoticons	18	26.44	22.43
Punctuation	18	10.00	8.76
<u>Interactional Strategies</u>	<u>18</u>	<u>40.16</u>	<u>18.89</u>
Asking for confirmation	18	11.77	6.69
Asking for clarification	18	9.94	3.76
<u>Indirect Strategies</u>	<u>18</u>	<u>29.50</u>	<u>11.49</u>
Use of fillers	18	25.16	22.43

As can be seen from the complete table of the results of the descriptive statistics of CS use in Appendix K, the mean of “approximation” strategy was the highest among all the other CSs. The communication strategies “substitution”, “use of all-purpose words”, “circumlocution”, “using emoticons” and “use of fillers”, were the most frequently occurring strategies after “approximation”.

Frequent use of approximation and circumlocution CSs in synchronous CMC environment is in line with Bialystok’s (1983) argument that learners who have greater formal ability in the target language use strategies based on target language rather than strategies based on some other language. Bialystok categorized CSs as L1-based and L2- based strategies and approximation (semantic contiguity in Bialystok’s taxonomy), circumlocution (description in Bialystok’s taxonomy) and word-coinage are the L2- based strategies. In her study of CSs, she found that high-proficiency level learners used more L2 based CSs and used less L1 based CSs in a face-to-face communication medium. Thus, the use of approximation and circumlocution CSs by advanced level learners in this study supports Bialystok’s (1983) findings. This finding also suggests that synchronous CMC environment and face-to-face communication environment share similar characteristics in terms of the most frequent CSs among high proficiency level learners.

These strategies might be the most frequently used ones due to the written nature of synchronous CMC medium, is in line with Yarmohammadi and Seif’s (1992) argument that interlanguage based strategies such as word-coinage, approximation or circumlocution occur significantly more than L1 based strategies in written tasks than in oral-tasks. Furthermore, the high use of approximation and circumlocution is also in line with the findings of Yule and Tarone (1987) who claim that circumlocution and approximation strategies are the most used CSs in non-

native/non-native interaction, as in the present study where the interactions were between non-native/non-native speakers of English.

Although the use of substitution and the use of emoticons show a high variability in terms of their usage, they followed approximation and circumlocution in frequency of occurrence. The high variability of the use of substitution and emoticon CSs resulted from the fact that while some participants who were more experienced in CMC used these CSs frequently, some other participants never used them. The occurrence of these strategies is also highly related to the communication medium through which the participants convey their messages. Murray (2000), for instance, argued that in CMC environment people tend to use more abbreviations and emoticons. The written nature of CMC encourages the use of these strategies. As Smith (2003b) argued, learners can easily abbreviate entire words and phrases by simply typing two letters such as “u r” for “you are”. Negretti (1999) also argued that emoticons are used to compensate for the lack of visual cues such as facial expressions and eye contact in CMC environment. However, in Negretti’s (1999) study, non-native speakers never used emoticons whereas they were very popular with native speakers and she concluded that that might be because of EFL learners’ scant acquaintance with e-mail and CMC. Although the participants in the present study indicated that they used computers for chat “a little”, they also indicated that they used computers for word-processing, e-mail and world-wide-web “a lot”. The participants’ common use of computers for communication such as e-mail might be one of the reasons for the contradictory finding about the participants’ use of emoticons. Besides, Negretti’s (1999) study was conducted six years prior to this study when the use of emoticons was not common and easy. Thus, the rapid

advancement in technology might be the reason for the contradictory finding about the use of emoticons.

The use of all-purpose words- general “empty” lexical items such as “thing” or “stuff”- to compensate for the lacking words more often than other L1-based strategies might be related to the participants’ high-proficiency level and their ability to continue their intended messages in time of lexical difficulties by relying on the target language rather than their L1. Furthermore, in line with Smith’s (2003b) findings, the use of fillers, the gambits that are used to fill pauses and time-gaining strategies employed to maintain conversation, are among the mostly used CSs (8%) in the present study. According to Smith (2003b), the use of fillers in CMC has the same function as in face-to-face communication, and the use of fillers is important in CMC as this medium lacks the non-verbal and paralinguistic strategies that assist face-to-face communication. The use of all-purpose words and fillers also show that synchronous CMC and face-to-face communication have similar characteristics since both of the strategies are expected to be found mostly in spoken conversation.

Although it was found in the present study that the participants used L2 based strategies such as approximation or circumlocution more than L1 based strategies due to their high proficiency level, it was found that L1- based strategies such as literal translation, code-switching or foreignizing were also used. This shows that although the participants are high-proficiency level learners, they still refer to L1-based strategies to save time when they experience difficulties in conveying their messages.

The coding of the chatscripts revealed that quotation marks were also used as verbal strategy markers in synchronous CMC. The participants sometimes made use of quotation marks when they wanted to acknowledge to their interlocutors that they

were not sure of the lexical items they used, or when they were aware of using an unacceptable word in the TL. The use of quotation marks such as ... *and is there an "arm" on the car* ... maybe to be due to the CMC medium, or it could be a transfer from non-verbal negotiation devices that exist in face-to-face communication since some speakers can show quotation marks with their fingers to express that they are aware of using an unusual lexical item in the TL.

After reaching these results, the researcher made use of descriptive statistics for the communication strategy categories of the present study.

As it can be seen in table 4.1, direct communication strategies were the most frequently occurring strategies with a mean of 156.66 and indirect communication strategies were the least occurring strategies with a mean of 29.50 according to the categories of the present study's taxonomy in synchronous CMC environment.

According to Dörnyei and Scott (1997), direct strategies provide alternative, manageable and self-contained means of getting the message across unlike indirect strategies which are not strictly problem-solving devices but rather create conditions for mutual understanding by facilitating the conveyance of meaning indirectly and keeping the communication channel open. Most of the CSs in the other taxonomies fall under the direct strategy category and the participants' high usage of direct CSs in this study reveals that the participants are capable of using CSs by resorting to their own capabilities, since direct strategies require self-contained solutions to communication problems. When the participants' experience in the TL is considered this might be expected, but whether low-proficiency level learners would also use direct strategies in their conversations rather than the other CS categories should be investigated.

As the table above indicates, paralinguistic strategies were the second most common CS category in the present study, and this is due to the communication medium in which the messages were conveyed. Since in CMC participants cannot use their gestures, facial expressions, intonation or other discourse markers, they use other paralinguistic strategies that exist in CMC like punctuation “?” to express that they are uncertain or to seek help from the interlocutor. They also use emoticons, like a happy face (☺) to express agreement or (☹) to express incomprehensibility, confusion or dislike of an idea. According to Saitillo (2000) and Lee (2002), these paralinguistic strategies play a similar role with non-verbal negotiation strategies and they facilitate online interaction.

The third most prevalent CS category was that of interactional strategies. The use of these CSs is important in terms of negotiated input and output which facilitate comprehension and foster the development of learners’ language competence (Long, 1996; Pica, 1994). In the present study, participants made use of a variety of these strategies such as comprehension, confirmation and clarification checks, requests for help and requests for repetition to clarify unclear messages. This finding reveals that synchronous online interaction provided the participants with opportunities to negotiate with each other using CSs similar to those used in face-to-face communication. This finding is in line with Lee (2002) who found that intermediate level students used interactional strategies more than other types of strategies and she concluded that since interactional strategies facilitate comprehension of input and output, the use of these strategies might promote TL learning or help to develop learners’ language skills.

4.2.2 *The Effect of Task type on Communication Strategy Use in Synchronous CMC*

The second research question was;

Do the frequency and type of communication strategies differ across different types of tasks?

In order to find out whether task type had an effect on the frequency and type of communication strategy use in synchronous computer-mediated communication environment, the researcher first compared the CSs across task types and then compared the categories of CSs across task types by conducting one-way repeated measures ANOVA.

First of all, to assess the difference across jigsaw, decision-making, and opinion-exchange task types of the use of 38-communication strategies that were found by descriptive statistics, a one-way repeated measures ANOVA was conducted. Before conducting the one-way repeated measures ANOVA, normality assumption was checked via the Kolmogorov-Smirnov test of normality and the data was found to be normally distributed ($p > 0.05$). Mauchly's test indicated that the assumption of sphericity was sustained ($X^2(2) = .410, p < .05$).

Table 4.2 provides the means and standard deviations for the use of communication strategies across task types.

Table 4.2

Means and Standard Deviations for the Use of CSs across Task Types

Task Type	N (pairs)	M	SD
Jigsaw	18	152.22	43.09
Decision-making	18	61.83	28.56
Opinion-exchange	18	92	39.12

This table shows that jigsaw task type generated the highest and decision-making task-type generated the lowest communication strategy use. But to understand whether there was really an effect of task type on the use of communication strategies a one-way repeated measures ANOVA was conducted. The summary of one-way repeated measures ANOVA is given in table 4.3:

Table 4.3

Summary of One-way Repeated Measures ANOVA for the Effect of Task Type on CSs Use

Source	SS	Df	MS	F
Participants	654635.62	17	38507.97	
Task	76241.370	2	38120.68	98.429***
Error	13167.963	34	387.29	
Total	744044.95	53		

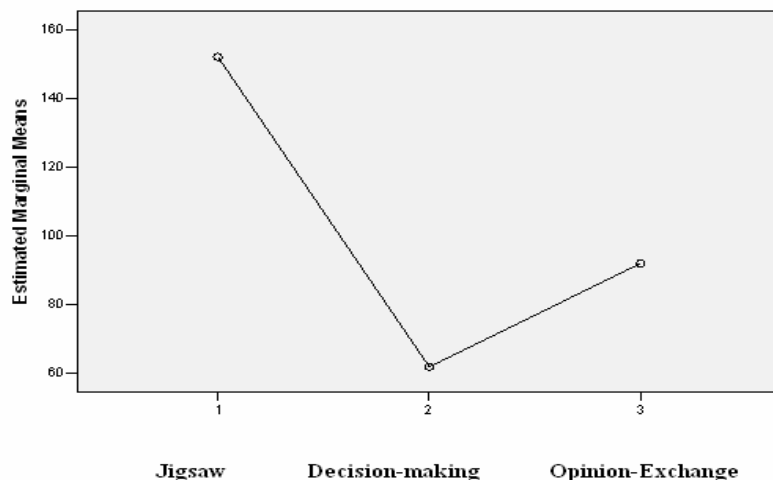
***p<.001

The results show that the use of communication strategies across the three task types differed significantly, $F(2, 34) = 98.43$, $p < .001$. Pair wise multiple comparison tests revealed that the use of communication strategies differed

significantly in all the three tasks types ($p < .01$). Figure 4.1 shows the estimated marginal means for communication strategy use across task types.

Figure 4.1

Estimated Marginal Means for Communication Strategy Use :



The effect of task type can be clearly seen from figure 4.1 which shows that jigsaw task type generated the most communication strategy use and the decision-making task type generated the least communication strategy use. As Pica, Kanagy, and Falodun (1993) argued, the most effective task type in terms of providing opportunities for negotiation of input and modification of interlanguage is the jigsaw task type, thus, the highest use of CSs is expected to be found in the jigsaw task type. Since learners usually negotiate meaning in times of communication difficulties to make themselves understood, and since CSs help learners to overcome those difficulties, the highest use of CSs was expected to be in the jigsaw task type. However, Pica, Kanagy, and Falodun (1993) also argued that the least effective task type in terms of meaning negotiation is the opinion exchange task. Contrary to our

expectations, the decision-making task type was found to result in the least CS use in this study. This might be due to the requirements of the decision-making and opinion exchange tasks in the present study. In the decision-making tasks, the participants were asked to come to an agreement together, whereas in the opinion-exchange tasks, the participants were asked to persuade each other. When the interactions of the participants were analyzed, it was seen that in the decision-making tasks the participants usually agreed with their partners' suggestions without objection, whereas in the opinion-exchange tasks, they usually rejected their partners' opinions and tried to persuade each other. Therefore, opinion-exchange tasks resulted in more communication among the participants and it required more meaning negotiation than decision-making tasks did. Thus, the use of CSs was higher in opinion-exchange task type in this study.

Further analysis involved examining each category of communication strategies across task types. The effect of task type on the 4 different categories of direct communication strategies, indirect communication strategies, interactional communication strategies, and paralinguistic communication strategies was assessed by conducting 4 separate one-way repeated measures ANOVAs for each category of communication strategies. Before conducting the analysis, the data was checked for normality, and except for the paralinguistic strategy category, all the categories of CSs were found to be normally distributed according to the Kolmogorov-Smirnov test of normality ($p > 0.05$). Since one-way repeated measures ANOVA is fairly robust to violations of normality assumption, no correction was made for the paralinguistic strategy category.

The effect of task type on direct communication strategy category was assessed first by a one-way repeated measures ANOVA, since it was the most

frequent CS category. Table 4.4 provides the means and standard deviations for the use of direct communication strategies across task types.

Table 4.4

Means and Standard Deviations for the Use of Direct Communication Strategies across Task Types

Task Type	N (pairs)	M	SD
Jigsaw	18	97	22.71
Decision-making	18	20.3333	7.30
Opinion-exchange	18	39.3333	15.46

According to the descriptive statistics, direct communication strategies occurred mostly in jigsaw tasks. Opinion- exchange and decision-making task types followed jigsaw task type respectively. To assess whether there was a significant difference between these means in terms direct communication strategy use, one-way repeated measures ANOVA was conducted. The assumption of sphericity was checked by Mauchly's Test of Sphericity, which revealed that the assumption was not met ($X^2(2) = .6025, p < .05$). Thus, the F test with Geisser-Greenhouse correction was employed. The summary of one-way repeated measures ANOVA is given in table 4.5:

Table 4.5

Summary of One-way Repeated Measures ANOVA for the Effect of Task Type on Direct Communication Strategy Use

Source	SS	Df	MS	F
Participants	644405.14	17	37906.18	
Task	57385.33	1.52	37696.00	179.351***
Error	5439.33	25.87	210.18	
Total	707229.8	44.401		

As the table indicates, the use of direct communication strategies across the three task types differed significantly, $F(1.522, 25.879) = 179.351, p < .001$. Figure 4.2 shows the estimated marginal means for direct communication strategy use across task types.

Figure 4.2

Estimated Marginal Means for Direct Communication Strategy Use :

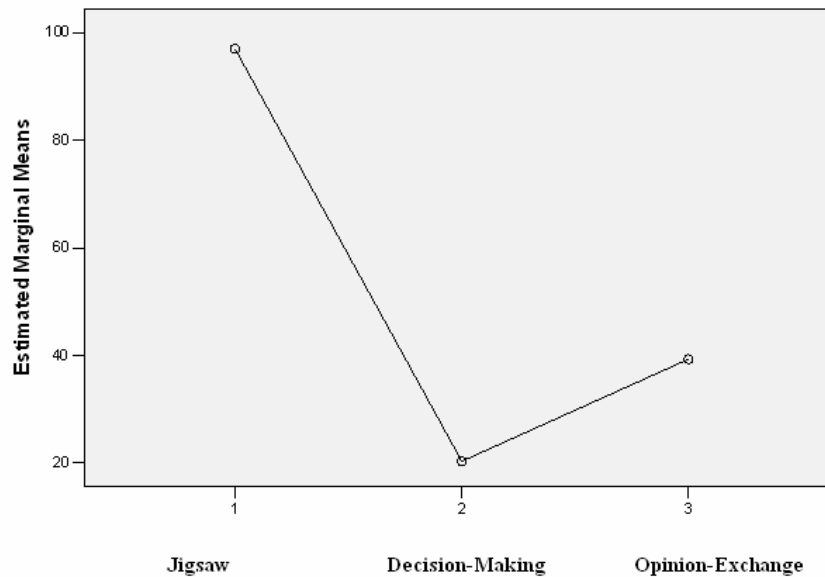


Figure 4.2 clearly shows that direct communication strategies differed significantly across task types and jigsaw task type generated the highest direct communication strategy use. Thus, task type has a significant effect on the use of direct communication strategy use.

Second, the effect of task type on the use of paralinguistic communication strategy category was assessed by a one-way repeated measures ANOVA since it was the second most occurring communication strategy category with a mean of 79.72.

Table 4.6 shows the means and standard deviations for the use of paralinguistic communication strategies across task types.

Table 4.6

Means and Standard Deviations for the Use of Paralinguistic Communication Strategies across Task Types

Task Type	N (pairs)	M	SD
Jigsaw	18	25.55	22.31
Decision-making	18	21.50	17.56
Opinion-exchange	18	32.66	24.45

This table indicates that paralinguistic strategies were used most often in opinion-exchange task type. Jigsaw and decision-making task types followed. In order to assess whether the use of paralinguistic strategies differed significantly across task types, in other words, to see whether these means were significantly different from each other a one-way repeated measures ANOVA was conducted.

Table 4.7 shows the summary of this analysis.

Table 4.7

Summary of One-way Repeated Measures ANOVA for the Effect of Task Type on Paralinguistic Communication Strategy Use

Source	SS	Df	MS	F
Participants	12689.75	17	746.45	
Task	1150.25	2	575.13	3.357*
Error	5825.07	34	171.32	
Total	19665.08	53		

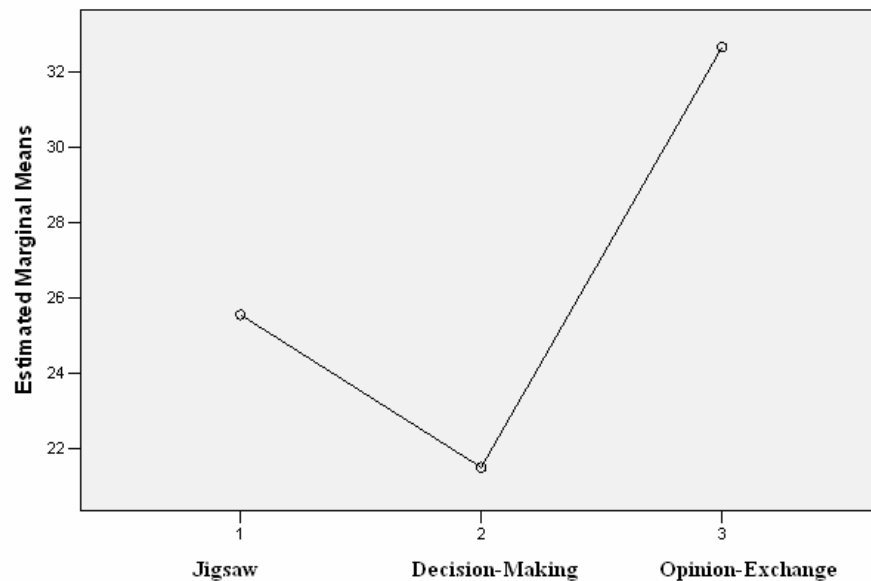
* $p < .05$

Mauchly's test indicated that the assumption of sphericity was assumed ($X^2(2) = .842, p < .05$). The results show that the use of paralinguistic communication strategies across the three task types differed significantly, $F(2, 34) = 3.357, p < .05$. However, since the paralinguistic strategies were not normally distributed this result should be taken with care, although one-way repeated measures ANOVA is argued to be robust to violations of normality.

Figure 4.3 shows the estimated marginal means for paralinguistic communication strategy use across task types.

Figure 4.3

Estimated Marginal Means for Paralinguistic Communication Strategy Use :



Although task-type seemed to have a significant effect on the use of paralinguistic strategies, pair wise multiple comparison tests revealed that there was a significant difference in the use of paralinguistic strategies between decision-making and opinion-exchange task types but there was no significant difference

between jigsaw and decision-making task types and jigsaw and opinion-exchange task types. The only significant difference was found between decision-making task type and opinion-exchange task type ($p < .01$).

The researcher then examined the use of interactional communication strategies across the tasks. Table 4.8 presents the means and standard deviations for the use of interactional communication strategies across task types.

Table 4.8

Means and Standard Deviations for the Use of Interactional Communication Strategies across Task Types

Task Type	N (pairs)	M	SD
Jigsaw	18	18.44	10.20
Decision-making	18	11.83	7.35
Opinion-exchange	18	9.88	5.47

In order to assess whether these means significantly differed from each other, a one-way repeated measures ANOVA was conducted. The summary of one-way repeated measures ANOVA is given in table 4.9:

Table 4.9

Summary of One-way Repeated Measures ANOVA for the Effect of Task Type on Interactional Communication Strategy Use

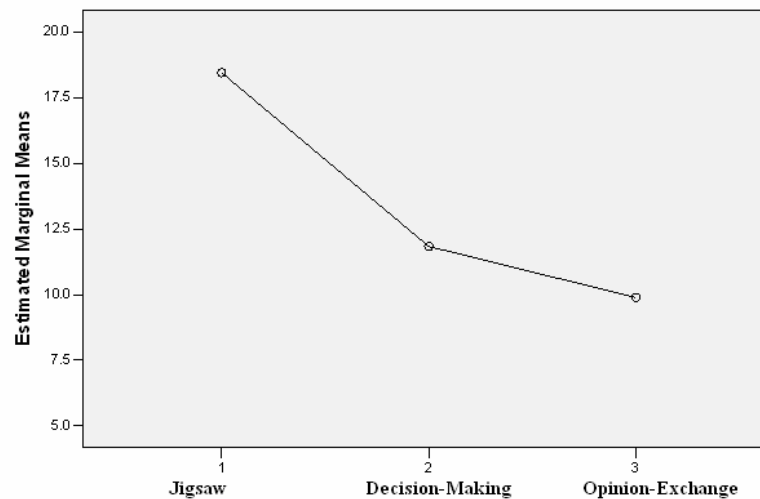
Source	SS	Df	MS	F
Participants	6743.56	17	396.68	
Task	724.11	2	362.05	10.457***
Error	1177.22	34	34.62	
Total	8644.89	53		

*** $p < .001$

Mauchly's test indicated that the assumption of sphericity was assumed ($X^2(2) = .850, p < .05$) and the results showed that the use of interactional communication strategies across the three tasks types differed significantly, $F(2, 34) = 10.457, p < .001$. Figure 4.4 shows the estimated marginal means for interactional communication strategy use across task types.

Figure 4.4

Estimated Marginal Means for Interactional Communication Strategy Use :



Although one-way repeated measures ANOVA revealed significant differences among the use of interactional strategies across tasks, pair wise multiple comparison tests revealed that while interactional communication strategies differed significantly between jigsaw and decision-making tasks and between jigsaw and opinion-exchange tasks ($p < .01$), there was no significant difference in the use of interactional communication strategy between decision-making and opinion-exchange task types.

The use of indirect communication strategies was analyzed last as they were the least frequently occurring communication strategies among all the other four categories. Table 4.10 presents the means and standard deviations for the use of indirect communication strategies across task types.

Table 4.10

Means and Standard Deviations for the Use of Indirect Communication Strategies across Task Types

Task Type	N (pairs)	M	SD
Jigsaw	18	11.22	5.53
Decision-making	18	8.16	4.55
Opinion-exchange	18	10.11	7.42

When table 4.10 is analyzed it can be seen that the mean scores of the use of indirect communication strategies are very close to each other. Still, to see whether these means differed significantly from each other, a one-way repeated measures ANOVA was conducted. The assumption of sphericity was checked by Mauchly's Test of Sphericity, and it was found that the assumption was not assumed ($X^2(2) = 9.733, p < .05$). Thus, The Geisser-Greenhouse approach was employed. The summary of one-way repeated measures ANOVA is given in table 4.11:

Table 4.11

Summary of One-way Repeated Measures ANOVA for the Effect of Task Type on Indirect Communication Strategy Use

Source	SS	Df	MS	F
Participants	1828.08	16.9	108.17	
Task	86.11	1.37	62.67	1.378
Error	1062.55	23.35	45.49	
Total	2976.75	41,63		

Table 4.11 indicates, no significant difference was found across the three task types on the use of indirect communication strategies. Thus, the task type did not affect the use of indirect communication strategies.

In addition to this, when descriptive statistics was used to find out which CS category occurred most in the three tasks, it was found that direct CSs were used most in the jigsaw task type with a mean of 97, paralinguistic CSs were used most in the decision-making task-type with a mean of 21.50 and direct CSs were used most in the opinion- exchange task type with a mean of 39.3. See Appendix L for the results of the descriptive statistics.

Direct strategies consist mostly of language related CSs such as approximation, circumlocution, literal translation, and so forth. The high occurrence of direct strategies and interactional CSs in the jigsaw task type might be due to the nature of this task type since the participants were asked to work on pictures. This finding validates Chun (2003), who argued that picture description requires the use of nouns and exact expressions which are usually unknown to the learners and calling for the use of language related CSs such as direct strategies which motivate

frequent clarification requests and confirmation checks, specifically, interactional CSs. Therefore, since the jigsaw task type requires more vocabulary knowledge than the other tasks, it is reasonable to assume that it necessitated more use of direct and interactional CSs due to lexical confusions. This is also in line with Pellettieri (1999) and Blake (2000) who based on findings from studies of computer-networked interaction argued that a great majority of negotiations were triggered by lexical confusions.

Paralinguistic CSs were mostly used in the opinion-exchange task type and this might have for several reasons. First of all, in CMC, paralinguistic strategies compensate for the lack of CSs such as intonation, gestures, body posture, or eye contacts that exist in face-to-face communication. Since when expressing opinions these CSs are quite important in conveying or strengthening one's message, the use of paralinguistic CSs in CMC somehow equals of the use of CSs in face-to-face communication and is quite usual since the participants cannot rely on verbal or physical cues in interpreting others' messages. In terms of the use of substitution, for instance, since the participants had to keep up with the conversation to persuade their partners, it was very important for them to respond quickly and this made them type very quickly and use substitutions which minimize the time and effort required to express one's opinions. In terms of the use of emoticons which are used to compensate for the gestures of face-to-face communication, it can be argued that with the help of these visual images the participants of the present study frowned, smiled or winked at each other to express their agreement or disagreement. Also the use of punctuation and capitalizing words for stress, which are usually used to compensate for lack of intonation, gesture or tone it can be argued that it is quite normal for the participants of the present study to use these CSs mostly in opinion-

exchange tasks to express intonation, emphasis, loud voice, and so forth, as these CSs are required for persuasion as in face-to-face communication.

4.2.3 The Attitudes of the Participants towards the Use of Computers for Writing and Communication

The third research question was;

What are the attitudes of junior ELT students' to the use of computers for communication and writing and do their attitudes change after the implementation of the study?

In order to answer this research question, Warschauer's (1996b) questionnaire was given twice to the participants of the study. First, a mean attitude score for the pre-questionnaire was calculated and then a mean attitude score for the post-questionnaire was calculated. These scores were first compared with a neutral score of 3 and then with each other by using one-sample and paired sampled t-tests. Before running the t-tests the data was checked for the normality assumption via Kolmogorov-Smirnov test of normality and the data was found to be normally distributed ($p > 0.05$).

For the pre-questionnaire, the mean attitude score for the participants on 30 questions was 3.65 which is higher than the hypothetically neutral score 3. In order to find out whether the mean attitude score 3.65 was significantly higher than the neutral score 3 one-sample t-test was used. The significance level was set at .05. In order to prevent a possible Type 1 error resulting from the use of multiple tests, a Bonferroni adjustment technique was performed ($0.5 / \text{number of comparisons}$), and alpha was set at .0017. The results indicated that the means 3.66 and 3 were significantly different $t(29) = 9.881$, $p < 0.001$.

After these results, the mean attitude for the post questionnaire was calculated and was found to be 3.68. In order to see whether this mean score was significantly different from the neutral score 3, a one-sample t-test was conducted and alpha level was set as .0017 using the Bonferroni adjustment technique. The result indicated that 3.68 was significantly different from neutral score 3 $p < 0.001$. Thus the post-questionnaire revealed that there was a slight increase in the mean motivational score of the participants but it could not be concluded that there was a significant increase in the participants' attitudes before running a paired-sample t-test. Therefore, a paired sample t-test was conducted in order to compare pre-questionnaire and post-questionnaire mean motivational scores and to see whether there occurred a change in participants' attitudes towards computers for communication and writing. The result indicated that 3.66 and 3.68 were not significantly different from each other $t(29) = -152, p < 0.05$.

The participants gave the most positive responses to question 4, both in the pre and post attitude questionnaires. Questions 24, 20, 12, 2, 17, 15, and 21 were the next highest scores both in the pre and post questionnaire. Table 4.12 presents the questions with the highest means in the pre-questionnaire and post questionnaire.

Table 4.12

Questions with the Highest Means in The Pre and Post Questionnaires

<u>Question Item</u>	<u>Pre-Questionnaire</u>		<u>Post-Questionnaire</u>	
	M	SD	M	SD
4 I enjoy seeing the things I write printed out.	4.58	0.55	4.61	0.54
24 Learning how to use computers is important for my career.	4.57	0.65	4.36	0.68
20 I want to continue using a computer in my English classes.	4.41	0.60	4.41	0.64
12 An advantage of e-mail is you can contact people any time you want.	4.08	0.96	4.36	0.86
2 Revising my papers is a lot easier when I write them on the computer.	3.97	1.15	4.33	0.75
17 Learning to use a computer gives me a feeling of accomplishment.	4.22	0.72	4.19	0.74
15 Using e-mail and the Internet is a good way to learn more about different people and cultures	4.13	0.83	4.22	0.68
21 Using a computer is worth the time and effort.	4.13	0.99	3.91	0.93

In the pre-questionnaire and the post- questionnaire items 3 and 10 were the least scored items among a total of 30 items:

- Item number 3 was “I enjoy writing my papers by computer more than by hand” with an average mean of 2.33.
- Item number 10 was “If I have a question or comment, I would rather contact my teacher in person than by e-mail.” with an average mean of 2.66. (when reverse coded)

These results show that participants do not especially enjoy writing their papers on the computer and they prefer contacting their teachers in person rather than by e-mail. Item 10 was also the lowest item in Warschauer’s (1996b) study with 167 ESL and EFL university students. The participants’ preference for contacting their teachers in person rather than by e-mail is in line with their answers to the post-session questionnaire as 92% of the participants indicated the importance of face-to-face communication when they have a conversation. The participants probably feel

more comfortable and believe they can express themselves better to their teachers in face-to-face conversation.

In terms of the highest scored item in the questionnaires, which was also the second highest item in Warschauer's (1996b) survey, the participants indicated that they enjoyed seeing the things they wrote printed out. The responses to the questionnaire reveal not only the participants' positive attitudes towards using computers for writing and communication, but also the reasons for their positive attitudes. The participants find computers important for their careers and they responded that learning how to use a computer gave them a feeling of accomplishment. It seems that participants see computers as a way of personal improvement and this results in a positive attitude towards using computers. The third highest ranked item was "I want to continue using a computer in my English classes" and this item is in line with the participants responses to the post-session questionnaire which also revealed that the participants enjoyed their experience with the computers and would like to take part in similar activities again. Therefore, the results of the questionnaire support that participants have a positive attitude towards using computers for writing and communication, which is also in line with Warschauer (1996b) findings.

4.2.4 Results of the Post-Session Questionnaire

In the first part of the post-session questionnaire which was returned by 26 of the participants out of 36, there were 8 five-point scale questions and they were analyzed via descriptive statistics.

The first question in the post-session questionnaire investigated how the participants felt in the conversations they were engaged in. The mean score for this

item is 4.42 which means that the participants thought they were comfortable in the conversations. In addition, the results indicate that 50% of the participants responded that they were “very comfortable” in the conversations. While 42.3% percent of the participants responded that they were “comfortable”, only 7.7% of the participants responded that they were “okay” in the conversations. Among the 26 participants who responded nobody answered that they were “uncomfortable” or “very uncomfortable” in the conversations.

The second question sought answers about whether the participants found the conversations natural or not. The mean score for this question is 4.19 which indicate that the participants found the conversations natural. While 46.2% of the participants responded that the conversations were “very natural” , 30.8 % of the participants responded that the conversations were “natural”.

The third question was about how much the participants liked the conversations in a chat environment. The mean score for this questionnaire is 4.07, which shows that the participants liked the conversations in a chat environment. 50% of the participants responded that they “liked” the conversations in a chat environment and 30.8% of the participants responded that they liked the conversations in a chat environment “very much”. Only 3.8% of the participants responded that they “didn’t like” the conversations in a chat environment much.

The fourth question investigated how smooth the conversations were and 80.8% of the participants responded that they found the conversations “smooth”. The mean score for this questionnaire was 3.8.

The fifth question investigated the problem areas in the chat sessions. 53.8% of the participants responded that they had problems in the chat sessions because of the delayed arrival of the messages due to typing time. This is in line with Werry

(1996) who argued that one of the biggest problems in synchronous CMC chat is the delayed arrival of the messages due to typing rate. He argued that since typing is slower than speaking, delayed arrival of the messages may be problematic for communication that attempts to work in a conversational mode. This finding also explains why synchronous CMC chat cannot be a substitute for face-to-face communication, at least the text-based one, but can create an alternative communication environment that is highly motivating.

The second most problematic area was that of the speakers' and their interlocutors' lack of knowledge about the topic, with a percentage of 26%. 19.2% of the participants indicated that their interlocutors' lack of sufficient vocabulary was a problem during the chat sessions. Lastly, 12% of the participants indicated that they had difficulty in understanding what their partners meant by their messages. This finding also supports the argument that synchronous CMC provides opportunities to foreign language learners for negotiated interaction and CSs use.

In the sixth question the participants were asked to rate themselves about how they did in the conversations. The mean score for this question was 3.85 which show that the participants thought they were quite well and 76.9% of the participants rated themselves as "well" in the conversation.

In the seventh question the participants were asked what task they liked the most or least. The participants rated the tasks on 5 scales where 5 meant "liked very much" and 1 meant "didn't like it at all". The results indicated that decision-making tasks (task numbers 2 and 4) were rated as the most liked task types with mean scores of 4.03 and 4 respectively. The least liked task was the first jigsaw task (task number 1) with a mean score of 3.38. All of the tasks were rated above 3 which meant "so so" on the scale. Therefore none of the tasks was rated as "didn't like

much” or “didn’t like it at all”. This finding is interesting as the least CS use occurred in decision-making tasks and the most CS use occurred in jigsaw task types. It might be argued that since in the decision-making tasks the students faced less difficulty in terms of vocabulary and understanding, they did not have to negotiate meaning, so less CS use occurred. Not having to negotiate meaning made them enjoy the tasks more. However, since the jigsaw tasks necessitated more vocabulary knowledge and understanding of the partners’ messages, they might have frustrated the participants when negotiating meaning, although they produced the most negotiation output. While trying to understand their partners’ messages and trying to convey their messages, learners had to use CSs. This finding also supports Pellettieri (2000) who argued that tasks that involve vocabulary beyond the repertoire of the learners can increase the quantity of negotiation produced. However, it contradicts Smith (2003b) who argued that learners negotiate for meaning in the CMC environment when problems in communication occur and decision making tasks result in more negotiation than jigsaw tasks. Smith (2003b) also found that decision-making tasks reveal more compensatory strategy use than jigsaw tasks. Therefore, it can be concluded for the present study that although students liked the decision-making tasks of the present study most, the jigsaw task type seemed to be the most effective in synchronous CMC chat in terms of meaning negotiation and as argued by Pica, Kanagy, and Falodun (1993) and Blake (2000). However, because of the contradictory results in terms of the task type, another important conclusion could be that rather than the task type, the vocabulary beyond the learners’ competence is important for negotiation of input and CS use, as both of them occur when problems arise in the course of communication.

The last five-point scale question asked the participants how important they thought face-to-face communication was when they had a conversation. The mean score for this question was 4.34 which shows that the participants found that being face-to-face is very important when they have a conversation. While 50% of the participants responded that being face-to-face is “important” during a conversation, 42.3 % responded that it is “very important. Thus, the participants prefer being face-to-face when they have a conversation.

The last 3 questions of the post-session questionnaire were open-ended and were about the problems they encountered in the conversations in terms of understanding and communicating, and whether they found chat in a computer-mediated communication environment and a face-to-face communication similar.

The first question was whether chat and face-to-face communication were similar. 22 of the 26 students responded that they were not similar. All of these students indicated that they found mimics, gestures, tone of the voice and body language very important when speaking with somebody. For example, one of the participants responded:

“They are different in terms of seeing the person’s gestures and body language. In chat communication ideas and feelings are expressed less because of the handicap of not seeing the persons gestures and mimics. Gestures and mimics represent emotions better. Face-to-face conversation is always more effective.”

Another participant argues that:

“I do not think that chat can replace the naturalness of face-to-face communication because body language plays an important role in human communication as it delivers an important proportion of the message you would like to deliver.”

While 85% of the students found face-to-face communication and synchronous computer-mediated communication different from each other, 15% of the students indicated that they were similar in terms of their purposes of conveying messages. One of the participants argued that:

“They are similar to some extent in the sense that, in both of them you have to convey your ideas clearly”

Another participant responded as follows:

“I think that it is very similar to face to-face communication because you can react on the spot. Even with facial expressions (emoticons) you can show whether you are safe with the issue or not. You can ask clarification questions to your partner when you are confused so it is interactive like our face-to-face conversations. And also the meaning is important. There is real message you want to convey.”

The second open-ended question sought answers about whether the participants had any problems in terms of understanding and communication with each other during the chat sessions. Except for 4 participants, all the other participants indicated that they had problems because of a lack of vocabulary, spelling mistakes delayed arrival of the messages and problems related to turn-taking. One of the participants responded as follows:

“First of all, we couldn’t wait for each other to answer the questions and the communication was broken most of the time. Sometimes, we couldn’t understand each other since our English was not sufficient to tell the matter and most of the time we could not wait each other since writing took most of our time.”

Another participant narrated his/ her problem as follows:

“I or my partner could not remember the English equivalent of a word and we tried to describe those words as much as possible... another problem was that, when I

tried to write something, I could not follow what my partner was writing. I was mostly concentrating on designing my ideas and it was difficult to do two things at the same time.”

In the third open-ended question, the participants were asked to express further comments about the chat conversations that they had participated. Except for two participants who argued that the chat sessions would have been better if they had known who they were chatting with, all of the other participants made positive comments about their experiences. Participants generally argued that chat conversations helped them to improve their English, and that the use of tasks in chat conversations was beneficial in terms of language output. One of the participants commented that

“It helped me to think English quickly. My difficulty in English got decreased. I started to speak more English in my daily life than in Turkish. I think it was beneficial for me to improve my English.”

The findings of the post-session questionnaire reveal that although the participants preferred face-to-face communication to CMC, they still found synchronous CMC beneficial to their English. Most of the participants commented that they would like to chat again and they argued that chatting was an enjoyable and useful experience for them. Thus, it could be concluded that using synchronous CMC in foreign language learning classrooms not only helps language learning and practice, but also provides a motivating medium for language learners.

4.3. Conclusion

This chapter has presented the results of the research conducted in line with the questions posed in the previous chapter.

In terms of the use of communication strategies in synchronous computer-mediated communication, it was found that the communication strategies of

approximation, substitution, use of all purpose words, circumlocution, use of emoticons and use of fillers were the most frequently used communication strategies.

When these strategies were analyzed according to the CS categories of the classification of the present study, it was found that direct-communication strategies were the most frequently employed strategies.

In terms of the effect of task type on communication strategy use, it was found that jigsaw type of tasks generated the most communication strategy use and decision-making tasks generated the least communication strategy use in the synchronous computer-mediated communication environment. In terms of the categories of the communication strategies, it was found that for direct and interactional communication strategies jigsaw task type generated the most communication strategies. Paralinguistic communication strategies occurred mostly in opinion-exchange type of tasks. In terms of the use of indirect communication strategies task type did not have an effect.

Furthermore, it was found that participants had positive attitudes towards the use of using computers for communication and writing. Although there seemed to be a slight positive change in the participants' attitudes between pre and post questionnaires, this was not a significant change. Thus the participants' attitudes did not change over time.

The post-session questionnaire also revealed that the participants of the study felt comfortable during the chat sessions and they found that the CMC conversations were natural. Only 3% of the participants did not like the conversations in a chat environment. However, although most of the students felt that the conversations were smooth in a CMC chat environment, 92% of the participants preferred being face-to-face in a conversation. Most of the students responded that the most problematic area

in CMC chat was the delayed arrival of the messages, and 22 out of 26 participants commented that CMC chat and face-to-face communication are not similar. They emphasized the importance of mimics, gestures, tone of the voice, and body language. Still, except for two participants, all respondents to the post-session questionnaire made positive comments about their experience in CMC chat, and they indicated that they found CMC medium motivating.

To sum up, this study reveals the importance of synchronous CMC in foreign language learning as it gives language learners opportunities to negotiate meaning, to use CSs, and to practice communicating with each other. In this study, the participants' made use of most of the communication strategies that were presented in the classification of the present study. 38CSs out of 41 were used by the participants in synchronous CMC. This finding reveals that synchronous CMC enables learners use CSs as in face-to-face communication, especially as most of the coded CSs are among the taxonomy which was prepared for face-to-face communication (Dörnyei and Scott; 1997).

This study also proves the importance of the jigsaw task type for the use of CSs, but as mentioned before, the use of CSs could also be related to the lexical density of the tasks which were beyond the learners' competence rather than the task types. Furthermore, in terms of the participants' positive attitudes to using computers, this study supports previous findings (Blake 2000; Chun, 2003; Kern, 1995; Warschauer 1996b). It can be concluded that synchronous CMC can serve as an alternative medium to face-to-face communication medium in terms of the use of CSs which help foreign language learners to improve their communicative competence, foreign language learning in general and conversational skills in target language.

CHAPTER 5

CONCLUSION AND IMPLICATIONS

5.1. Introduction

The main purpose of this study was to describe the use of communication strategies in a synchronous computer-mediated communication environment and to examine whether task type had an influence on the frequency and variety of communication strategy use. Furthermore, the participants' attitudes to the use of computers for communication and writing were also examined. In order to answer the research questions of the present study several instruments and analyses were used.

First of all, the participants were chosen on a voluntary basis among third year ELT students of the Foreign Language Education Department (FLED) of Boğaziçi University, and they were randomly assigned into two separate computer labs in which the computers used for chat had been downloaded with Yahoo! Messenger beforehand. Before the chat sessions, the participants were given an attitude questionnaire which aimed to investigate their attitudes about using computers for communication and writing and also which gathered demographic information about the participants and their computer familiarity. After the questionnaire, a training session was given to the students and they were asked to chat through an information-gap task and save and send their chatscripts to the researcher as a trial.

The participants gathered together for 35 minutes once a week for 6 weeks, and they were anonymous to their chat partners during that time. Jigsaw, decision-making and opinion-exchange task types were used in the study and each task type was used twice and the order in which they were used was randomly assigned by the

researcher. At the end of the 6th chat session, the participants were given the attitude questionnaire again to see whether their attitudes to computers had changed after participating in the present study, and later they were asked to answer a post-session questionnaire through e-mail to collect more information about their experience and feelings about computer-mediated communication.

The chatscripts of the participants were coded according to Dörnyei and Scott's (1997) taxonomy and Smith's (2003b) findings, and a native speaker of English who is also an instructor of English helped the researcher to code 35% of the data to check inter-rater reliability. In order to find the type of communication strategies in synchronous computer-mediated communication environment, descriptive statistics was used. One- way repeated measures ANOVA was used to see whether task type had an effect on the use of CSs and also on the categories of CSs. Furthermore, paired-sample t-tests were used to compare the findings of pre- and post-session attitude questionnaires and to see whether there was a change in the participants' attitudes to using computers for communication and writing.

Based on the results and discussions that were presented in detail in the previous chapter, the pedagogical implications of the findings, the limitations of the study, and recommendations for future research will be presented in this chapter.

5.2. Pedagogical Implications

The findings of the study have several implications for the effects of different task types on the use of communication strategies in synchronous CMC in foreign language learning classrooms. In the present study, the participants made use of a variety of CSs that were previously observed in face-to-face communication, and they used some CSs which are peculiar to CMC environment. This finding supports

that the use of CSs is also fostered by synchronous CMC environment, thus owing to its highly motivating setting, it could be an alternative medium for developing the CS use of foreign language learners, especially in foreign language settings where it is often difficult to provide students with classroom activities that give them opportunities to use English communicatively.

The necessity of developing the strategic competence of foreign language learners was suggested earlier by Chen (1990), who argued that developing their communicative competence is not sufficient to prepare learners for certain situations and claimed that instead of communicative competence, the strategic competence of learners should be developed. This argument is valid for foreign language learners, especially for students who learn English in formal classroom settings and have little opportunity to get in touch with native speakers or for authentic language use. Through its revelation that CSs are also used in synchronous CMC environment, the findings of the present study suggest that synchronous CMC environment provides an alternative, motivating medium of interaction and communication for language learners where they negotiate meaning and use CSs which help them to improve their strategic competence. Synchronous CMC medium could also be a highly beneficial medium to bring native speakers and the foreign language learners together. Through the internet the teachers could find native speakers of English to chat with their students. Although in the present study all communication was carried out between non-native speakers, the possibility of making students chat with native speakers of English is an important feature of synchronous CMC for foreign language learning settings.

As mentioned above, it was found that the participants of the study made use of a variety of CSs which suggests that regardless of their proficiency level, language

learners need to use CSs when they face communication difficulties. Therefore, it is highly important to teach learners about CSs in order to provide them with the skill to convey what they mean in a foreign language. This view is supported by several researchers (e.g., Bialystok, 1990; Chen, 1990; Dörnyei and Thurrell, 1991; Faerch and Kasper, 1983; Paribakht, 1985; Tarone and Yule, 1989)

In terms of communication strategy training, Dörnyei and Thurell (1991) made some suggestions and argued that language learners' awareness could be raised towards some strategies for instance circumlocution or approximation, to overcome communication difficulties. This could be accomplished by providing learners with communicative tasks and thus with opportunities to practice the use of CSs in the classroom. In line with this suggestion, in the present study different types of tasks were used and the findings revealed the superiority of jigsaw tasks over decision-making and opinion-exchange tasks, as in the previous studies in the literature. Communicative tasks are important for CS development and training as they give learners the opportunity to use language authentically and to develop their communicative competence. As for the teachers, they need to know what meaning the learners want to convey and where the learners face communication problems so that they can help students to improve their strategic competence.

Furthermore, the findings of the present study support previous research about the motivating atmosphere of CMC in language learning settings. The participants of the study found synchronous CMC highly motivating, a fact which is also quite important for language learning. Therefore, this study reveals that synchronous CMC environment provides an alternative medium for language practice in terms of the use of CSs. CSs are highly important for the ability to communicate in a foreign language as they help to convey one's intended meaning

clearly, especially in times of trouble and during conversation. CSs are valuable for language learning in general because they allow learners to test their hypothesis about TL vocabulary and language structures, which in turn result in meaning negotiation that, is thought to help language learning.

As a result, synchronous CMC, in which communicative tasks, (particularly the jigsaw type of tasks) are used, could provide an alternative communication medium for the learners in EFL settings where there is little chance for interaction and negotiation of meaning. Synchronous CMC could be incorporated into foreign language teaching curriculums so that some of the foreign language teaching courses could include learners work on communicative tasks as in-class or out-class assignments leading to communicative language use and negotiation of meaning in which learners participate enthusiastically.

5.3. Limitations and Suggestions for Further Research

Although the present study revealed important findings for foreign language teaching and learning, it has several limitations and, thus the findings should be taken with caution.

First of all, in the present study, all the participants were advanced level EFL learners in a Turkish university where English is the medium of instruction. As the target population of the study was EFL learners in general, this study should be replicated in other language contexts with different proficiency level learners in order to generalize the findings to a larger target population of EFL students.

Second, due to the space limitations of the laboratory the students were sitting close to each other and could see each other's tasks. Therefore, counterbalancing of the tasks could not be achieved as it should have been; instead the tasks were

randomly presented. This might have affected the results of the study in terms of the use of CSs due to the carry over effects. In order to prevent task performances from interfering with each other, counterbalancing the order of task presentation should be achieved in further studies.

Third, some CSs like message replacement and omission could not be identified in the present study in synchronous CMC environment. Asking the participants for retrospective comments is a useful technique used to identify but due to the duration of data coding and the absence of the participants during this process the data this could not be done. Retrospective comments might have revealed more instances of CSs, thus in order to code CSs better further studies should not overlook this process.

Fourth, in the present study all interaction was between non-native speakers and non-native speakers. However, one of the most important advantages of synchronous CMC is the opportunity to bring native and non-native speakers of English together on-line in real time. The use of CSs might have been different with native speakers and further studies might explore the use of CSs in task based synchronous CMC environment with native versus non-native speakers of English.

Finally, in the present study it was found that jigsaw task type allowed learners to use more CSs than in the other tasks, but the jigsaw task type in the present study required the participants to spot the differences between pictures. In the literature it was argued that pictures play a significant role in promoting negotiation as describing pictures requires the use of vocabulary items that are unknown to the learners, thus resulting in more CSs use. The pictures in the jigsaw task type might have affected the results of the study and further studies could use different jigsaw tasks to examine the use of CSs in task based synchronous CMC environment. It

could also be investigated whether the task type or the lexical density of the tasks have an effect on the use of CSs by presenting the same task type with different lexical density.

APPENDIX A

Tarone's Classification of Communication Strategies

1981 p. 286.

A) PARAPHRASE

1. Approximation
2. Word Coinage
3. Circumlocution

B) BORROWING

1. Literal translation
2. Language switch

C) APPEAL for ASSISTANCE

D) MIME

E) AVOIDANCE

1. Topic Avoidance
2. Message abandonment

APPENDIX B**Faerch and Kasper's Classification of Communication Strategies**

1983 pp.52-53

A) FORMAL REDUCTION STRATEGIES

1. phonological
2. morphological
3. syntactic
4. lexical

B) FUNCTIONAL REDUCTION STRATEGIES

1. actional reduction
2. modal reduction
3. reduction of the propositional content
 - a. topic avoidance
 - b. message abandonment
 - c. meaning replacement

C) ACHIEVEMENT STRATEGIES

1. Compensatory Strategies
 - a. code-switching
 - b. interlingual transfer
 - c. inter-/intralingual transfer
 - d. cooperative strategies
 - e. non-linguistic strategies
 - f. TL based strategies
- i. generalization
- ii. paraphrase
- iii. word coinage
- iv. restructuring

2. Retrieval Strategies

APPENDIX C

Paribakht's Classification of Communication Strategies

1985 pp.135-138

A) LINGUISTIC APPROACH

1. Semantic Contiguity
 - a. Superordinate
 - b. Comparison
 - i. positive comparison (analogy, synonym)
 - ii. negative comparison (contrast and opposition, antonym)
2. Circumlocution
 - a. Physical description (size, shape, color, material)
 - b. Constituent features (features, elaborated features)
 - c. Locational property
 - d. Historical property
 - e. Other features
 - f. Functional description
3. Metalinguistic Clues

B) CONTEXTUAL APPROACH

1. Linguistic context
2. Use of TL idioms and proverbs
3. Transliteration of L1 idioms and proverbs
4. Idiomatic transfer

C) CONCEPTUAL APPROACH

1. Demonstration
2. Exemplification
3. Metonymy

D) MIME

1. Replacing verbal output
2. Accompanying verbal output

APPENDIX D**Dörnyei and Scott's Classification of Communication Strategies**

1997 p. 197

A) DIRECT STRATEGIES

2. Resource deficit-related strategies
 - a. Message abandonment
 - b. Message reduction
 - c. Message replacement
 - d. Circumlocution
 - e. Approximation
 - f. Use of all-purpose words
 - g. Word-coinage
 - h. Restructuring
 - i. Literal translation
 - j. Foreignizing
 - k. Code switching
 - l. Use of similar sounding words
 - m. Mumbling
 - n. Omission
 - o. Retrieval
 - p. Mime
3. Own-performance problem-related strategies
 - a. Self-rephrasing
 - b. Self-repair
4. Other-performance problem-related strategies
 - Other-repair

B) INTERACTIONAL STRATEGIES

1. Resource deficit-related strategies
 - Appeals for help
2. Own-performance problem-related strategies
 - a. Comprehension check
 - b. Own-accuracy check
5. Other-performance problem-related strategies
 - a. Asking for repetition
 - b. Asking for clarification
 - c. Guessing
 - d. Expressing nonunderstanding
 - e. Interpretive summary
 - f. Responses

C) INDIRECT STRATEGIES

1. Processing time pressure-related strategies
 - a. Use of fillers
 - b. Repetitions
2. Own-performance problem-related strategies
 - Verbal strategy markers
3. Other-performance problem-related strategies
 - Feigning understanding

APPENDIX E

Inventory of Strategic Language Devices with Descriptions/ Definitions, Examples based on Dörnyei & Scott, 1997

A) DIRECT STRATEGIES

a) Resource deficit related strategies:

1. Message Abandonment: Leaving a message unfinished because of some language difficulty.

Example (1): *It is a person er... who is responsible for a house, for the block of house... I don't know... (laughter)*

2. Message Reduction (topic avoidance): Reducing the message by avoiding certain language structures or topics considered problematic language wise or by leaving out some intended elements for a lack of linguistic resources.

Example (2): [Retrospective comment by the speaker:] *I was looking for "satisfied with a good job, pleasantly tired," and so on, but instead I accepted less.*

3. Message Replacement: Substituting the original message with a new one because of not feeling capable of executing it.

Example (3): [Retrospective comment after saying that the pipe was broken *in the middle* instead of "the screw thread was broken":] *I didn't know "screw thread" and well, I had to say something.*

4. Circumlocution (paraphrase): Exemplifying, illustrating or describing the properties of the target object or action.

Example (4): *it becomes water* instead of "melt"

5. Approximation: Using a single alternative lexical item, such as a superordinate or a related term, which shares semantic features with the target word or structure.

Example (5): *plate* instead of “ball”

6. Use of all-purpose words: Extending a general, “empty” lexical item to contexts where specific words are lacking.

Example (6): The overuse of *thing*, *stuff*, *make*, *do*, as well as words like *thingie*, *what-do-you-call-it*; e.g.: *I can't can't work until you repair my...thing*

7. Word-coinage: Creating a non-existing L2 word by applying a supposed L2 rule to an existing L2 word.

Example (7): [Retrospective comment after using *dejunction* and *unjunction* for “street clearing”:] *I think I approached it in a very scientific way: from “junk” I formed a noun and I tried to add the negative prefix “de-“; to “unjunk” is to ‘clear the junk’ and “unjunktion” is ‘street clearing’*

8. Restructuring: Abandoning the execution of a verbal plan because of language difficulties, leaving the utterance unfinished, and communicating the intended message according to an alternative plan.

Example (8): *On Mickey's face we can see the... so he's he's he's wondering*

9. Literal Translation (transfer): Translating literally a lexical item, an idiom, a compound word or structure from L1/L3 to L2.

Example (9): *I'd made a big fault* [translated from French]

10. Foreignizing: Using a L1/L3 word by adjusting it to L2 phonology (i.e., with a L2 pronunciation) and/or morphology.

Example (10): *reperate* for “repair” [adjusting the German word ‘repaieren’]

11. Code-switching (language transfer): Including L1/L3 words with L1/L3 pronunciation in L2 speech; this may involve stretches of discourse ranging from single words to whole chunks and even complete turns.

Example (11): Using the Latin *ferrum* for “iron”

12. Use of similar- sounding words: Compensating for a lexical item whose form the speaker is unsure of with a word (either existing or non*existing) which sounds more or less like the target item.

Example (12): [Retrospective comment explaining why the speaker used *cap* instead of “pan”:] *Because it was similar to the word which I wanted to say: “pan”*

13. Mumbling: Swallowing or muttering inaudibly a word (or part of a word) whose correct form the speaker is uncertain about.

Example (13): *And uh well Mickey Mouse looks surprise or sort of XXX* [the ‘sort of’ marker indicates that the unintelligible part is not just a mere recording failure but a strategy.]

14. Omission: Leaving a gap when not knowing a word and carrying on as if it had been said.

Example (14): *then...er...the sun is is... hm sun is... and the Mickey Mouse....*
[Retrospective comment: *I didn’t know what “shine” was.*]

15. Retrieval: In an attempt to retrieve a lexical item saying a series of incomplete or wrong forms or structures before reaching the optimal form.

Example (15): *It's brake er...it's broken broked broke*

16. Mime (non-linguistic/paralinguistic strategies): Describing whole concepts nonverbally, or accompanying a verbal strategy with a visual illustration.

Example (16): [Retrospective comment:] *I was miming here, to put it out in front of the house, because I couldn't remember the word.*

b) Own-performance problem-related strategies:

1. Self-rephrasing: Repeating a term, but not quite as it is, but by adding something or using paraphrase.

Example (17): *I don't know the material... what it's made of...*

2. Self-repair: Making self-initiated corrections in one's speech.

Example (18): *then the sun shines and the weather get be...gets better*

c) Other-performance problem-related strategies:

1. Other-repair: Correcting something in the interlocutor's speech.

Example (19): Speaker... *because our trip went wrong...* [...] Interlocutor: *Oh, you mean the tap.* S: *Tap, tap...*

B) INTERACTIONAL STRATEGIES

a) Resource deficit related strategies:

1. Appeals for help: The appeal for help strategy was divided into two parts as a) Direct appeal for help and b) Indirect appeal for help.

1. a.) Direct appeal for help: Turning to the interlocutor for assistance by asking an explicit question concerning a gap in one's L2 knowledge.

Example (20): *it's a kind of old clock so when it strucks er... I don't know one, two, or three 'clock then a bird is coming out. What's the name?*

1. b.) Indirect appeal for help: Trying to elicit help from the interlocutor indirectly by expressing lack of a needed L2 item either verbally or nonverbally.

Example (21): *I don't know the name...* [rising intonation, pause, eye contact]

b) Own-performance problem-related strategies:

1. Comprehension check: Asking questions to check that the interlocutor can follow you.

Example (22): *And what is the diameter of the pipe? The diameter. Do you know what the diameter is?*

2. Own-accuracy check: Checking that what you said was correct by asking a concrete question or repeating a word with a question intonation.

Example (23): *I can see a huge snow... snowman? Snowman in the garden.*

c) Other-performance problem-related strategies:

1. Asking for repetition: Requesting repetition when not hearing or understanding something properly.

Example (24): *Pardon? What?*

2. Asking for clarification: Requesting explanation of an unfamiliar meaning structure.

Example (25): *What do you mean? You saw what?* Also ‘question repeats’, that is, echoing a word or a structure with a question intonation.

3. Asking for confirmation: Requesting confirmation that one heard or understood something correctly.

Example (26): Repeating the trigger in a ‘question repeat’ or asking a full question, such as *You said...?, You mean...?, Do you mean...?*

4. Guessing: Guessing is similar to a confirmation request but the latter implies a great degree of certainty regarding the key word, whereas guessing involves real indecision.

Example (27): *Oh. It is then not the washing machine. Is it a sink?*

5. Expressing non-understanding: Expressing that one did not understand something properly either verbally or nonverbally.

Example (28): Interlocutor: *What is the diameter of the pipe?* Speaker: *The diameter? I: The diameter. S: I don't know this thing. I: How wide is the pipe?* Also, puzzled facial expressions, frowns and various types of mime and gestures.

6. Interpretive Summary: Extended paraphrase of the interlocutor's messages to check that the speaker has understood correctly.

Example (29): *So the pipe is broken, basically, and you don't know what to do with it, right?*

7. Responses: Response strategy was divided into six parts as a) Response repeat, b) Response repair, c) Response rephrase, d) Response expand, e) Response confirm and f) Response reject.

7. a.) Response repeat: Repeating the original trigger or the suggested corrected form (after an other-repair)

Example (30): Speaker... *because our trip went wrong...* [...] Interlocutor: *Oh, you mean the tap.* S: *Tap, tap...*

7. b.) Response repair: Providing other-initiated self-repair.

Example (31): Speaker: *The water was not able to get up and I...* Interlocutor: *Get up? Where?* S: *Get down.*

7. c.) Response rephrase: Rephrasing the trigger.

Example (32): Interlocutor: *And do you happen to know if you have the rubber washer?* Speaker: *Pardon?* I: *The rubber washer... it's the thing which is in the pipe.*

7. d.) Response expand: Putting the problem word/issue into a larger context.

Example (33): Interlocutor: *Do you know maybe er what the diameter of the pipe is?* Speaker: *Pardon?* I: *Diameter, this is er maybe you learnt mathematics and you sign er with th this part of things.*

7. e.) Response confirm: Confirming what the interlocutor has said or suggested.

Example (34): Interlocutor: *Uh, you mean under the sink, the pipe? For the...*

Speaker: *Yes. Yes.*

7. f.) Response reject: Rejecting what the interlocutor has said or suggested without offering an alternative solution.

Example (35): Interlocutor: *Is it plastic?* Speaker: *No.*

C) INDIRECT STRATEGIES

a) Processing time pressure-related strategies:

1. Use of fillers: Using gambits to fill pauses, to stall, and to gain time in order to keep the communication channel open and maintain discourse at times of difficulty.

Example (36): Examples range from very short structures such as *well; you know, actually; okay*, to longer phrases such as *this is rather difficult to explain; well, actually, it's a good question.*

2. Repetitions: Repetitions were divided into two parts as a) Self-repetition and b) Other-repetition.

2.a. Self-repetition: Repeating a word or a string of words immediately after they were said.

Example (37): [Retrospective comment:] *I wanted to say it was made of concrete but I didn't know 'concrete' and this is why" "which as made, which was made" was said twice.*

2.b. Other-repetition: Repeating something the interlocutor said to gain time.

Example (38): Interlocutor: *And could you tell me the diameter of the pipe? The diameter.* Speaker: *The diameter? It's about er.. may be er... five centimeters.*

b) Own-performance problem-related strategies:

1. Verbal strategy markers: Using verbal marking phrases before or after a strategy to signal that the word or structure does not carry the intended meaning perfectly in the L2 code.

Example (39): E.g.: (strategy marker in bold): *On the next picture... I don't really know what's it called in English...*

c) Other-performance problem-related strategies:

1. Feigning understanding: Making an attempt to carry on the conversation in spite of not understanding something by pretending to understand.

Example (40): Interlocutor: *Do you have the rubber washer?* Speaker: *The rubber washer?... No, I don't.* [Retrospective comment: *I didn't know the meaning of the word, and finally I managed to say I had no such thing.*]

APPENDIX F

Attitude Questionnaire

Dear Student,

The purpose of the following questionnaire is to assess your attitude to the use of computers for writing and communication. If you please answer the questions very carefully and frankly, you will have contributed a lot to my research project. Thank you in advance.

A.)

1.) Age: 2.) Sex: 3.) Native Language:.....

4.) Please rate your typing ability.

Excellent..... Very good..... Good..... Fair..... Poor.....

5.) Please rate your knowledge of computers.

Excellent..... Very good..... Good..... Fair..... Poor.....

6.) Do you have a computer at home/dormitory? Yes.....No.....For how long.....

7.) Have you ever used a computer to do the following things?:

Word processing: a lot a little..... never.

E-mail: a lot..... a little..... never.

Chat (ICQ, Messenger, etc): a lot a little.....never.

World Wide Web: a lot..... a little..... never.

B.)

For each of the remaining questions, please write a number (1–5):

1=STRONGLY DISAGREE, 2=disagree, 3=neutral, 4=agree,

5=STRONGLY AGREE

1.) I can write better essays when I do them on the computer. 1 2 3 4 5

2.) Revising my papers is a lot easier when I write them on computer. 1 2 3 4 5

3.) I enjoy writing my papers by computer more than by hand. 1 2 3 4 5

4.) I enjoy seeing the things I write printed out. 1 2 3 4 5

5.) Writing papers by hand saves time compared to by computer. 1 2 3 4 5

6.) I enjoy using the computer to communicate with people around the world.
1 2 3 4 5

7.) I enjoy using the computer to communicate with my classmates. 1 2 3 4 5

8.) I am more afraid to contact people by e-mail than in person. 1 2 3 4 5

9.) I enjoy using the computer to communicate with my teacher. 1 2 3 4 5

- 10.) If I have a question or comment, I would rather contact my teacher in person than by e-mail. 1 2 3 4 5
- 11.) E-mail helps people to learn from each other. 1 2 3 4 5
- 12.) An advantage of e-mail is you can contact people any time you want. 1 2 3 4 5
- 13.) Writing to others by e-mail helps me develop my thoughts and ideas. 1 2 3 4 5
- 14.) Using e-mail and the Internet makes me feel part of a community 1 2 3 4 5
- 15.) Using e-mail and the Internet is a good way to learn more about people and cultures. 1 2 3 4 5
- 16.) Communicating by e-mail is a good way to improve my English. 1 2 3 4 5
- 17.) Learning to use a computer gives me a feeling of accomplishment. 1 2 3 4 5
- 18.) Writing by computer makes me more creative. 1 2 3 4 5
- 19.) Using a computer gives me more chances to read and use authentic English. 1 2 3 4 5
- 20.) I want to continue using a computer in my classes. 1 2 3 4 5
- 21.) Using a computer is not worth the time and effort. 1 2 3 4 5
- 22.) Using a computer gives me more control over my learning. 1 2 3 4 5
- 23.) I enjoy the challenge of using computers. 1 2 3 4 5
- 24.) Learning how to use computers is important for my career. 1 2 3 4 5
- 25.) I can improve my English more independently when I use a computer. 1 2 3 4 5
- 26.) Computers keep people isolated from each other. 1 2 3 4 5
- 27.) I can improve my English faster when I use a computer. 1 2 3 4 5
- 28.) Using a computer gives me more chances to practice English. 1 2 3 4 5
- 29.) Computers are usually very frustrating to work with. 1 2 3 4 5
- 30.) Computers make people weak and powerless. 1 2 3 4 5

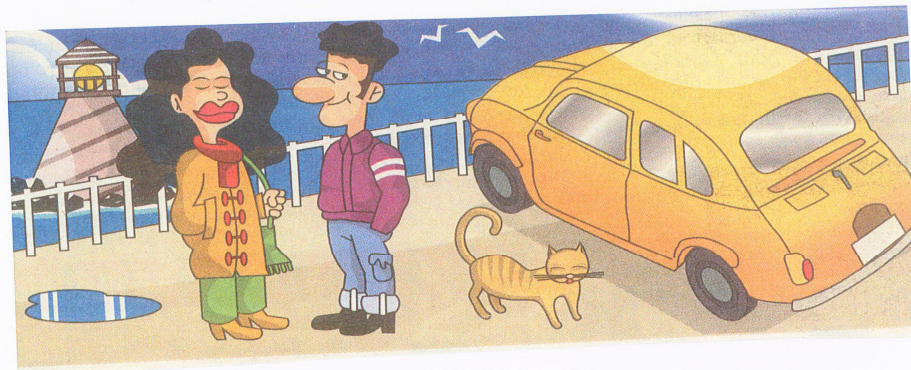
APPENDIX G.01**TASKS****Jigsaw Task 1**

Title: Find the differences between the TWO pictures

Directions:

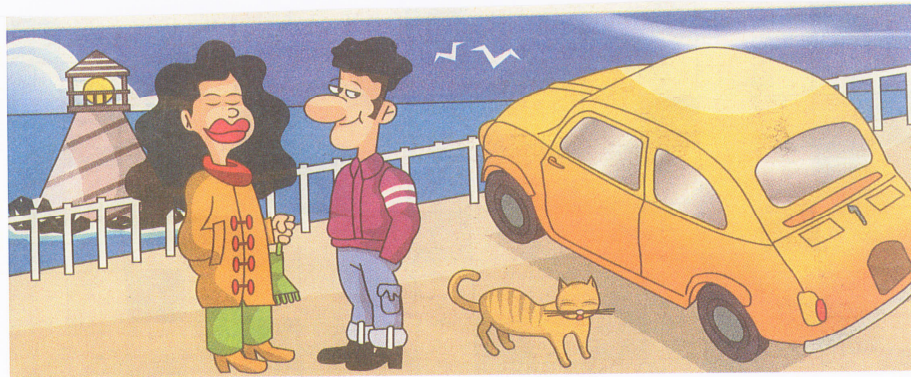
A

Look at the picture below carefully. A different version of the same picture has been given to your partner, too. Although the pictures you and your partner have been given look the same, there are 6 differences between them. By chatting for 35 minutes try to identify as many differences as you can. To do so, you should describe every detail to your partner. In the end, the pair who manages to find more differences than the other pairs is the winner.



B

Look at the picture below carefully. A different version of the same picture has been given to your partner, too. Although the pictures you and your partner have been given look the same, there are 6 differences between them. By chatting for 35 minutes try to identify as many differences as you can. To do so, you should describe every detail to your partner. In the end, the pair who manages to find more differences than the other pairs is the winner.

**APPENDIX G.02**

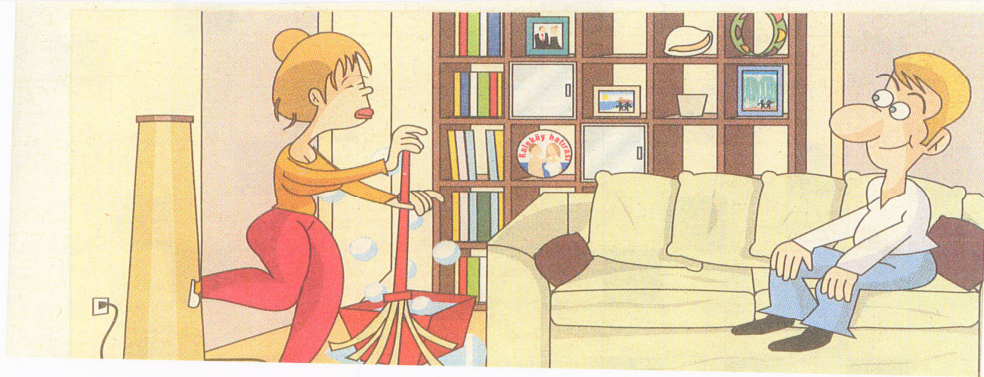
Jigsaw Task 2

Title: Find the differences between the TWO pictures

Directions:

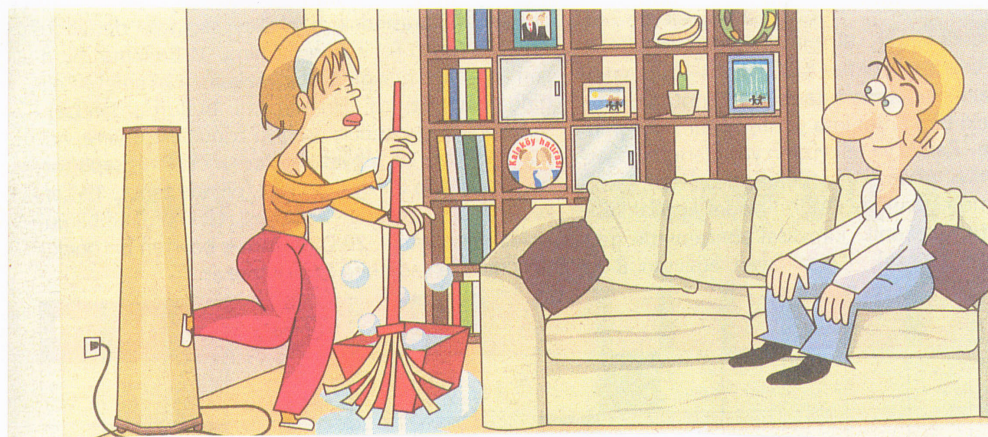
A

Look at the picture below carefully. A different version of the same picture has been given to your partner, too. Although the pictures you and your partner have been given look the same, there are 6 differences between them. By chatting for 35 minutes try to identify as many differences as you can. To do so, you should describe every detail to your partner. In the end, the pair who manages to find more differences than the other pairs is the winner.



B

Look at the picture below carefully. A different version of the same picture has been given to your partner, too. Although the pictures you and your partner have been given look the same, there are 6 differences between them. By chatting for 35 minutes try to identify as many differences as you can. To do so, you should describe every detail to your partner. In the end, the pair who manages to find more differences than the other pairs is the winner.



Decision-making Task 1**Title: The Desert Island****Directions:**

You are on a sinking ship. There are rubber boats available for your rescue. The boats could hold only a limited amount of supplies and people, though. You can see a small desert island in the distance. If your boat makes it there safely, you will need things to help you survive until you are rescued.

Look at the list of items you have been given. You can take only *THREE* items from each group. Together you must decide (and agree completely) on which things to take and which things to leave behind. You have 35 minutes.

GROUP 1

large flares
matches
flashlights
oil lamps
oil
batteries
clothes
can opener
utensils

GROUP 2

pillows
sleeping bags
tent
blankets
sheets
coats and jackets

GROUP 3

fresh water
7-up
coffee
canned juices
beer
tea
whiskey

GROUP 4

salt
flour
sugar
yeast
dry-milk
extra
water-purification
tablets

GROUP 5

Bows and arrows
Set of knives
Gun
Bullets
Fishing pole
Small chairs
Dishes
First-aid kit
Ropes

GROUP 6

frozen meat
dried fruits
fresh fruits
dried vegetables
fresh vegetables
canned beans
dry soup

APPENDIX G.04**Decision-making Task 2****Title: A Sad Story**

Directions: There are five people in the story below. Together with your partner, decide which of the people was most to blame for what happened, and then in order, from most to least responsible. Thus, you should rank each person in order, from most guilty to least guilty. Your decision will be used by insurance company people and by lawyers in settling this case.

A Sad Story:

Jim's wife had just walked out on him (she loves another man). Jim rushed out of the house, pedaled unsteadily to the local bar, and started drinking. A couple of hours later, he staggered out of the bar and somehow got on his bike. He was wobbling from side to side down High Street when a car knocked him down, crushing his leg. The driver went straight on without slowing down at all. He was rushing his wife to the maternity hospital. When they finally got Jim to the hospital, he had to wait for three hours in the emergency waiting room. The doctor who finally examined him amputated (cut off) the wrong leg. This doctor had been on duty for over 27 hours (he was a student doctor).

APPENDIX G.05**Opinion-Exchange Task 1****Directions:****A**

You and your partner will discuss the topic below for 35 minutes. Read the topic below. You will find the “argument” that you should support below, as well. Think about your argument and try to persuade your partner.

Television: You must defend the view that “television has a terrible influence on people and society in general; it is thus an evil invention.” Your opponent does not believe this. Think of all the problems associated with TV viewing, and give examples that prove that YOU are right. You must not agree with your partner. Take a few minutes to gather any thoughts that support the point of view that TV is a very destructive thing.

Whenever your opponent gives an example of something good about TV, try to think of reasons why it is at the same time a bad influence, and maintain alternative means of accomplishing the same things as TV provides.

Now, try to persuade your partner about your opinion that “television has a terrible influence on people and society in general; it is thus an evil invention.”

B

You and your partner will discuss the topic below for 35 minutes. Read the topic below. You will find the “argument” that you should support below, as well. Think about your argument and try to persuade your partner.

Television: You must defend the view that “television is the greatest invention of all time” Your opponent thinks that television is not useful, even worse, that it is an evil and terribly destructive machine. Think of all the benefits that people can gain from TV, and give examples that prove that YOU are right. You must not agree with your partner. Take a few minutes to gather any thoughts that support the point of view in favor of TV.

Whenever your opponent gives an example of something bad about TV, try to think of reasons for explaining the same thing in a way that puts the blame not on TV, but on people, society, etc.

Now, try to persuade your partner about your opinion that “television is the greatest invention of all time”.

APPENDIX G.06

Opinion-Exchange Task 2**Directions:****A**

You and your partner will discuss the topic below for 35 minutes. Read the topic below. You will find the “argument” that you should support below, as well. Think about your argument and try to persuade your partner.

Age and Wisdom: You must defend the view that “OLDER is not necessarily wiser, that is, that there is no direct relationship between how old someone is and how wise or intelligent he or she is.” You know that this excuse is often used for forcing youths to obey their parents (even though the children know what is better for themselves) and forcing young employees to hold lower positions in companies than older (but not as intelligent) employees. Your partner thinks that an older person has “the voice of experience”. Well, that just isn’t enough nowadays.

Think of all the things that young people can teach their elders! Think of the benefits that the younger generation has compared with previous generations: technology, education, travel...

Give examples that show that YOU are right. You must not agree with your partner. Take a few minutes to gather your thoughts on this subject.

Whenever your opponent gives an example of the strengths (mental, spiritual) that come with age, remind him or her of the tremendous weaknesses that also come.

Now, try to persuade your partner about your opinion that, “OLDER is not necessarily wiser, that is, that there is no direct relationship between how old someone is and how wise or intelligent he or she is.”

B

You and your partner will discuss the topic below for 35 minutes. Read the topic below. You will find the “argument” that you should support below, as well. Think about your argument and try to persuade your partner.

Age and Wisdom: You must defend the view that “With age comes wisdom; that is, the older a person is, the wiser, or more intelligent he or she is” Your opponent thinks that your idea is old-fashioned and untrue. Your partner does not see any relationship between age and wisdom.

Think of all the things that young people can learn from their elders. Isn’t this why children should obey their parents; because “parents know best”? Think of the benefit that older people have in terms of the amount of experience they have already gained in life. Give a few examples that show that you are right. You must not agree with your partner. Take a few minutes to gather your thoughts on this subject.

Whenever your opponent gives an example of the weakness that comes with age, remind him or her that the weakness is only physical, not mental or spiritual.

Now, try to persuade your partner about your opinion that, “With age comes wisdom; that is, the older a person is, the wiser, or more intelligent he or she is”

APPENDIX H
POST-SESSION QUESTIONNAIRE

Dear student,

Thank you very much for participating in my study. As the last step of this research, please answer the questions below frankly. Thank you for your contribution.

1.) How comfortable were you in the conversations?

- 5. very comfortable
- 4. comfortable
- 3. okay
- 2. uncomfortable
- 1. very uncomfortable

2.) How natural were the conversations?

- 5. very natural
- 4. natural
- 3. okay
- 2. unnatural
- 1. very unnatural

3.) How much did you like the conversations in a chat environment?

- 5. liked very much
- 4. liked
- 3. so so
- 2. didn't like much
- 1. didn't like it at all.

4.) How smooth were the conversations?

- 5. very smooth
- 4. smooth
- 3. okay
- 2. weren't smooth
- 1. weren't smooth at all

5.) If you had any problems in the chat periods, what do you think they were?
(you can choose more than one option)

- a. delayed arrival of the messages due to the typing time
- b. your partner's lack of vocabulary
- c. your lack of vocabulary
- d. your partner's lack of knowledge of the topic
- e. your lack of knowledge of the topic
- f. difficulty in understanding what your partner meant by the message
- g. others.....

6.) Overall rating of how you did in the conversations

- 5.very well
- 4. well
- 3. okay
- 2. poor
- 1. very poor

7.) What task did you like the most/ least? Please rate them as,

- 5. liked very much 4. liked 3. so so 2. didn't like much
- 1. didn't like it at all.

Week 1: Spot the difference (with the light house, the cat and the car..) 5 4 3 2 1

Week 2: Problem Solving: "The Desert Island"; What should we take to the rubber boats? 5 4 3 2 1

Week 3: Debate: Television is the greatest invention???? 5 4 3 2 1

Week 4: Problem Solving: "A Sad Story". Who is the most guilty one? 5 4 3 2 1

Week 5 : Spot the difference;(with the house wife cleaning the house) 5 4 3 2 1

Week 6: Debate: With age comes the wisdom??? 5 4 3 2 1

7.) How important do you think face-to-face communication is when you have a conversation?

- 5. very important
- 4. important
- 3. so so
- 2. not important
- 1. not important at all

8.) Are chat and face-to-face communication like each other? In what ways?.....

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9.) Did you have any problems in the conversations in terms of understanding and speaking? If you did, what kinds of problems did you encounter?.....

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10. Do you have *any* comments about the chat conversations that you have participated in?

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THANK YOU

APPENDIX I

Dear student,

I would like to thank you for accepting to collaborate in this study. During the study you will chat in English with an anonymous friend from lab 502 and work on several tasks. The chat periods will last for 35 minutes each week and you will chat 6 times. A YAHOO account has already been taken for you and the partner you are going to chat with has already been added to your chat list. Therefore, the only thing you need to do is to sign-in with the ID and the password which is provided for you at the bottom of this paper.

1. During the chat sessions you will chat in English to work on 6 tasks.
2. When you sign-in you will see that there is a person to chat in your chat list.
Let's say you are **cmc_19_ina**
You will see that there **is cmc_19_a** in your list.
3. During the sessions you are not allowed to talk to any of the friends in the computer lab, use any dictionary or the Internet.
4. After each session, you must send your chat sessions' message archive to the mail address chat_study@yahoo.com

5. In order to send your message archive

1. Click on the name of the person that you chat with
2. You will see **MESSAGE ARCHIVE** in the opened menu.
3. When you click on that you will see that your chat session has been recorded.
4. Save it to desktop by clicking on the "floppy disk" icon.
5. Sign in to Yahoo with your given ID (cmc_19_ina) and send it to chat_study@yahoo.com as an attachment with the subject name **WEEK 1**.
Next week you should write WEEK 2 in the subject menu when sending your chat sessions.

Thank you again for participating in this study.

You will find your account number and password below which should be ONLY used for this study. Please do not share your ID and Password with anybody and do not lose this document.

Yahoo ID = **cmc_19_ina**
Password = **1a2s3d4f**

APPENDIX J

Task Type: Information-gap/Training

Title: Forbidden Words

Directions:

A

You have to define the bold words at the top of the boxes below to your partner without using any of the “forbidden words” in the definition. Keep defining the word until your partner finds the bold word. When s/he finds it, now the turn is your friends’ and listen to his/her definition and try to find the bold word. In the end, the one who finds more bold words than the other is the winner. You have 30 minutes.

LIGHTER	LADY-BUG	VINEGAR	STOVE	SCISSORS
Cigarettes	Red-black	Salad	Heat/Radiator	Cut
Matches	Circle Spots	Liquid	Oven	Paper
Ash-tray	Good-Luck	Sour	Fire	Cloth
Burn	Insect	Olive-Oil	Cold/Hot	Knife
Zippo	Fly	Lemon	Wood/Coal	2 sharp blades

Task Type: Information-gap/Training

Title: Forbidden Words

Directions:

B

You have to define the bold words at the top of the boxes below to your partner without using any of the “forbidden words” in the definition. Keep defining the word until your partner finds the bold word. When s/he finds it, now the turn is your friends’ and listen to his/her definition and try to find the bold word. In the end, the one who finds more bold words than the other is the winner. You have 30 minutes.

CORK-SCREW	HEADACHE	ZEBRA	PIGGY-BANK	VIOLIN
Wine	Aspirin/Pills	Horse	Coins/Money	Instrument
Open	Stress	Stripes	Save	Orchestra
Bottle	Pain	Animal/Zoo	Spend	Play
Tin-Opener	Eyes	Black-white	Child/Children	Strings
Lid	Study/Read	Africa	Key	Cello
Celebrate	Illness	Forest	Drop/Put	Classical Music

APPENDIX K

The Frequency of CSs in Synchronous Computer-Mediated Communication					
Communication Strategies	N(pairs)	Mean	Std. Dev	Minimum	Maximum
Approximation	18	39.72	12.65	23.00	65.00
Substitution	18	37.50	40.17	4.00	181.00
Use of all- purpose words	18	34.61	12.36	16.00	65.00
Circumlocution	18	29.05	9.03	14.00	50.00
Using emoticons	18	26.44	22.43	4.00	77.00
Use of fillers	18	25.16	11.19	4.00	55.00
Literal translation	18	17.38	14.13	4.00	61.00
Asking for confirmation	18	11.77	6.69	.00	28.00
Code switching	18	10.55	7.22	.00	27.00
Punctuation	18	10.00	8.76	1.00	28.00
Asking for clarification	18	9.94	3.76	3.00	17.00
Response-confirm	18	6.66	4.25	.00	19.00
Self-repair	18	6.66	4.44	1.00	14.00
Capitalizing words for stress	18	5.77	6.89	.00	29.00
Word-coinage	18	5.72	4.70	.00	19.00
Self-rephrasing	18	4.66	3.30	.00	15.00
Expressing non-understanding	18	3.83	5.12	.00	21.00
Verbal strategy markers	18	3.38	2.17	1.00	7.00
Message abandonment	18	3.05	3.31	.00	13.00
Direct appeal for help	18	2.05	1.83	.00	5.00
Other-repair	18	1.88	1.32	.00	4.00
Response: reject	18	1.55	1.50	.00	5.00
Message reduction	18	1.38	1.09	.00	3.00

Response: rephrase	18	1.16	.98	.00	3.00
Comprehension-check	18	1.00	1.08	.00	4.00
Foreignizing	18	.94	1.34	.00	4.00
Use of similar-sounding words	18	.88	1.74	.00	6.00
Indirect appeal for help	18	.83	1.04	.00	4.00
Interpretive summary	18	.66	1.08	.00	3.00
Other-repetition	18	.50	.78	.00	2.00
Response: expand	18	.44	.78	.00	2.00
Self-repetition	18	.22	.54	.00	2.00
Feigning understanding	18	.22	.42	.00	1.00
Asking for repetition	18	.11	.32	.00	1.00
Restructuring	18	.11	.47	.00	2.00
Response- repair	18	.05	.23	.00	1.00
Own-accuracy check	18	.05	.23	.00	1.00

APPENDIX L

The Use of CS Categories across Task Types

The use of CS categories in Jigsaw Task Type:

	N (pairs)	Mean	Std. Dev.	Minimum	Maximum
Direct CSs	18	97.00	22.71	69.00	148.00
Paralinguistic CSs	18	25.55	22.31	6.00	94.00
Interactional CSs	18	18.44	10.20	3.00	43.00
Indirect CSs	18	11.22	5.53	2.00	24.00

The use of CS categories in Decision-making Task Type:

	N (pairs)	Mean	Std. Dev.	Minimum	Maximum
Paralinguistic CSs	18	21.50	17.56	3.00	61.00
Direct CSs	18	20.33	7.30	9.00	32.00
Interactional CSs	18	11.83	7.35	4.00	32.00
Indirect CSs	18	8.16	4.55	2.00	20.00

The use of CS categories in Opinion-exchange Task Type:

	N (pairs)	Mean	Std. Dev.	Minimum	Maximum
Direct CSs	18	39.3	15.46	18.00	66.00
Paralinguistic CSs	18	32.66	24.45	4.00	100.00
Indirect CSs	18	10.11	7.42	2.00	29.00
Interactional CSs	18	9.88	5.47	.00	20.00

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