CALLing All Learners: An Explanatory Integrative Research Study of EFL Learner-Learner Corrective Feedback Patterns Within On-Line Synchronous Environments

by

Annmarie Gorenc Zoran

A dissertation submitted in partial fulfilment of the requirement for the degree of Doctor of Philosophy Department of Secondary Education College of Education and Department of World Language Education College of Arts and Sciences University of South Florida

Co-Major Professor: Antony K. Erben, Ph.D. Co-Major Professor: Carine Feyten, Ph.D. Anthony J. Onwuegbuzie, Ph.D. Ann Cranston-Gingras, Ph.D.

Date of Approval: October 30th, 2006

Keywords: chat, peer feedback, error types, special education needs, clarification request, elicitation, explicit correction, metalinguistic feedback, recast, repetition, education in Slovenia, middle school, high school

© Copyright 2006, Annmarie Gorenc Zoran
DEDICATION

To delo posvečam svojemu partnerju Marjanu, najboljšemu prijatelju in moji sorodni duši ter svojima sinovoma Marku in Alexu. Brez vaše neskončne ljubezn, pomoči, podpore in nesebnosti mi ne bi uspelo. Iz srca hvala tudi Francu in Silvi Zoran, ki sta vedno in iz srca nesebično pomagala svojim otrokom.

Ravno tako posvečam to delo svojima staršema, Marjanci in Petru Gorenc, ki vse svoje življenje žrtvujeta in delata za boljšo prihodnost svojih otrok. Neskončno sem vama hvaležna. Nobena beseda ne more izraziti moje hvaležnosti in iskrene ljubezn, zato preprosto HVALA!

And to all the unheard children!
ACKNOWLEDGMENTS

This dissertation would not have been possible without the assistance and support of many amazing and talented individuals. I definitely would not be here today, if it were not for Drs. Feyten’s, Flaitz’s and Zhu’s confidence in accepting me into the SLA/IT Ph.D. program. Thank you very much for believing in me and providing me with such an extraordinary experience. Thanks to my committee member Dr. Ann Cranston-Gingras for offering her support, guidance, and compassion. Thank you for always being there and encouraging me to continue and ‘push’ myself. Also, I would like to thank Dr. Tony Onwuegbuzie for introducing me to the rigorous nature of mixed method analysis. Thank you for taking the time to talk with me for endless hours on the phone, for the numerous constructive revisions, and for showing me alternative ways of analyzing problems. My utmost gratitude goes out to my co-major professors Dr. Erben and Dr. Feyten. Thank you, Dr. Feyten for always being there for me and for being such an amazing professional. You truly inspire me in more ways than you know!

To Dr. Erben, thank you for helping me make sense of all the data and for guiding me towards the finish line. Your tireless pursuit of knowledge and being a voice for the unheard has inspired me to become a better person and educator.

My sincerest gratitude goes to the SLA/IT Ph.D. students, cohort 2001, and graduates -- for their support, dedication, and ambition. I want to sincerely
thank each and everyone of you. Each of you have motivated me to be a better educator and researcher. To my amazing friends Iona, Aline, and Chen: You have been with me through all the bad and good times, as colleagues and friends. It is difficult to describe in words the appreciation I have in you as friends. I will forever treasure our past, our present, and our future.

I would like to express my gratitude to the participants in my study, to the dedicated teachers and principals who took the time to accommodate my needs. Thank you, Janja for all your help! My appreciation also goes out to the National Education Institute of Slovenia for assisting me with the research protocol and in securing relevant research sites.

Last, but definitely not least to all my family in Slovenia—too many to name, but all are in my thoughts and my heart! I would like to thank my family; to my mother-, father-, and sister-in-law, thank you for your support, love, endless baby-sitting and housekeeping duties. To my brother, his family, and my parents, thank you for showing me the world, exposing me to other languages, and helping me to be the person that I am today. I will forever treasure your kindness, your help, unconditional love, and determination. My love will always be with you. Mami, thank you for this opportunity.

To my husband, friend, and partner. No amount of words can express the amount of gratitude for your endless support, consistently encouraging me to continue and sacrificing so much! To my inspirations Mark and Alex. You have given me the experience of unconditional love for which I will eternally treasure in my heart.
Table of Contents

LIST OF TABLES ........................................................................................................vi
LIST OF FIGURES .....................................................................................................viii
LIST OF ACRONYMS .............................................................................................. ix
ABSTRACT .............................................................................................................. x

CHAPTER 1 INTRODUCTION ............................................................................. 1
  Statement of the Problem ............................................................................. 1
  Theoretical Framework .............................................................................. 5
  Purpose of the Study .................................................................................. 8
  Quantitative Research Questions ............................................................ 13
  Hypotheses .............................................................................................. 13
  Qualitative Research Questions .............................................................. 14
  Educational Significance ........................................................................ 15
  Definition of Terms ................................................................................ 16
  Limitations ............................................................................................ 23
  Delimitations ........................................................................................ 24
  Organization of the Remaining Chapters ................................................. 25

CHAPTER 2 REVIEW OF LITERATURE ............................................................. 26
  Overview .................................................................................................. 26
  Theoretical Overview .............................................................................. 26
Negotiation of Meaning ................................................................. 29
Feedback ......................................................................................... 47
  Feedback Studies Within Teacher-Learner Interactions .............. 53
  Feedback Studies with Children Interactions .............................. 64
  Summary of Feedback Studies ................................................ 70
Computer-Mediated-Communication ............................................. 71
  Overview ................................................................................... 71
  Criteria and Attributes for CALL Integration ............................. 74
  SLA and CMC Research ............................................................. 79
  Is Synchronous Discourse Writing or Speaking? ....................... 80
  Discourse, Affective Factors, and Language Production ............ 81
  Summary of Language Development in Online Discussion
    Environments ........................................................................... 88
    Corrective Feedback and CMC ............................................... 89
    CALL, CMC and Corrective Feedback Summary ........................ 100
Foreign Languages and Special Needs ........................................ 101
  Historical Overview of the Context .......................................... 108
  Education in Slovenia ............................................................... 110
    Foreign languages and Technologies in Slovenia ................... 114
  Chapter Summary .................................................................... 121
CHAPTER 3 METHODOLOGY ......................................................... 123
  Overview .................................................................................. 123
  Participants for Quantitative Study .......................................... 125
LIST OF TABLES

Table 1 : Negotiation of Form Leading Towards Repair ........................................ 58
Table 2 : Overview of Participants by Grade ......................................................... 126
Table 3 : Overview of Dyad Members by Grade and Gender .............................. 150
Table 4 : Research Questions with Data Analysis Procedure ............................ 167
Table 5 : Total Errors by Type Across Grade Levels ........................................... 201
Table 6 : Frequency and Percentage of Corrective Feedback Types by Grade Level ........................................................................................................... 213
Table 7 : Percentage of Corrective Feedback and Learner Turns with Error by Grade Level ........................................................................................................ 215
Table 8 : Frequencies of Corrective Feedback and Learner Error for All Grades ...................................................................................................................... 217
Table 9 : Mean and Standard Deviation for Incidence Variables as a Function of Grade Level ........................................................................................................ 221
Table 10 : Corrective Feedback and Non-Feedback Incidences by Grade Level .............................................................................................................................. 223
Table 11 : Observed Frequencies and Percentages of Corrective Feedback Incidences by Type and Grade ................................................................. 226
Table 12 : Mean and Standard Deviation for Corrective Feedback Incidences as a Function of Grade Level ........................................................................ 229
Table 13 : Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 7 ....................................... 231

Table 14 : Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 8 .............................. 232

Table 15 : Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 10 ............................... 233

Table 16 : Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 11 ............................... 234

Table 17 : Interview Themes ............................................................................ 247
LIST OF FIGURES

Figure 1. Varonis and Gass’ (1985) model of nonunderstanding........................ 38

Figure 2. Varonis and Gass’ (1985) model of nonunderstanding including comprehension checks and interlocutors stepping out of conversations. ................................. 40

Figure 3. Lyster and Ranta’s (1997) error treatment sequence. ......................... 56

Figure 4. Gap in the literature. ................................................................. 90

Figure 5. Selection of participants. ......................................................... 128

Figure 6. Research design. ................................................................. 143

Figure 7. Procedures of the study......................................................... 146

Figure 8. Screen-shot chat screen.......................................................... 148

Figure 9. Present error treatment sequence............................................. 154

Figure 10. Coding process. ................................................................. 156

Figure 11. Research implementation process. ........................................ 165

Figure 12. Content of IRF routines......................................................... 181

Figure 13. Personal computer usage across grade levels............................ 189

Figure 14. Corrective feedback frequencies per error type across grade levels. ......................................................................................... 218
LIST OF ACRONYMS

CA. Conversation Analysis
L1. First language
L2. Second Language
CACD. Computer Assisted Classroom Discussions
CALL. Computer Assisted Language Learning
CMC. Computer-Mediated Communication
EFL. English as a Foreign Language
ESL. English as a Second Language
FL. Foreign Language
LAN. Local Area Network
NS. Native Speaker
NNS. Non-native Speaker
IRF. Initiation/response/follow-up
SEN. Special Education Needs
SLA. Second Language Acquisition
TELL. Technology Enhanced Language Learning
TL. Target Language
CALLING ALL LEARNERS: AN EXPLANATORY INTEGRATIVE RESEARCH STUDY OF EFL LEARNER-LEARNER CORRECTIVE FEEDBACK PATTERNS WITHIN ON-LINE SYNCHRONOUS ENVIRONMENTS

Annmarie Gorenc Zoran

ABSTRACT

This mixed methods research study centers on learner-learner interactions; thus, contributing to the on-going investigation within negotiation and interaction, computer-mediated-communication and its role in second language learning. The specific aim was to investigate corrective feedback types, incidences, and the relationship between error and feedback type among peers within online synchronous environments in EFL classes in Slovenia, Europe. Interactional characteristics of corrective feedback with learners having a documented special need (SN) also were explored using qualitative analyses.

The study encompassed 208 students that were randomly placed into 104 dyads within intact classes of Grades 7, 8, 10, and 11. There were 32 dyads in Grade 7, 16 dyads in Grade 8, 24 dyads in Grade 10, and 32 dyads in Grade 11. Three participants had a documented special need. Quantitative analysis did not reveal statistical significant difference in the incidence of corrective feedback and grade level, the relationship among the type of corrective feedback and grade level, or the relationship between learner error and type of corrective feedback.
across grade levels. Corrective feedback types were similar to those studied in traditional classroom research (i.e., explicit corrections, recasts, negotiation of form). However, descriptive statistics and qualitative analyses revealed conversational techniques that are specific to text-based online discourses providing insight into interactional characteristics among interactants within a discourse environment that differs both from speech and written texts. Consequently, an additional corrective feedback type emerged from the data, coded as feedback request. The most frequent corrective feedback type provided was explicit corrections. Frequency data revealed that corrective feedback tended to decrease as the grade level increased. Data with SN learners indicated distinctive discourse techniques.

Overall, low incidences of corrective feedback and error types might have been affected by the learner’s developmental levels, social readiness, and/or psychological readiness (Oliver, 1998), as well as the learner’s individual conversational styles and socio-cultural factors. Consequently, further research is warranted in examining these factors. In addition, longitudinal studies are warranted in examining whether online negotiated work lead towards L2 acquisition. Finally, the role of phantom corrective moves when coding qualitative online text data also need to be examined further.
CHAPTER 1: INTRODUCTION

*Statement of the Problem*

The question is not whether technology should be used, but *how* best to integrate technology on the basis of theory and our current understandings of second language processes (Oxford, Rivera-Castillo, Feyten, & Nutta, 1997) for the benefit of *all* learners. Stemming from new advances in technology, the widespread use of the world-wide web, along with its new possibilities of including authentic information and incorporating new media of communication, has influenced the pedagogy and research of foreign language classrooms. Thus, furthering foreign language methodology into incorporating technologies for communicative based teachings.

Within language learning classrooms, new online communication media, among other factors, influence: (a) the nature of the discourse; (b) the affective influences, interactive competences, linguistic output, and cognitive processes on language learning; and (c) the pedagogy of foreign language education (Beauvois, 1994; Beauvois & Eledge, 1996; Blake, 2000; Castañeda, 2005; Chapelle, 2001; Chun, 1994; Cubillos, 1998; Erben, 1999; Iwasaki, 2000; Negretti, 1999; Pelletieri, 2000; Warschauer, 1996, 1997; Warschauer & Healy, 1998). More importantly, communication methods such as online synchronous text based tools or *chat rooms* are on the rise within work place communications (Garcia & Jacobs, 1999; O’Neill & Martin, 2003), being used as an informal

For learners with special education needs (SEN), who are also being mainstreamed into regular classrooms, the role and use of technology can be even more crucial, depending on the severity of their disability. Technology usage within classroom settings may be used as an assistive device (e.g., augmentative communication) or used as an educational tool. In either case, technology integration may assist learners with special needs to become more active learners within mainstream classrooms. Noting the importance of technology usage within the United States for learners with special needs, Hasselbring and Glass (2000) highlight: "For example, use of computer technology for word processing, communication, research, and multimedia projects can help the three million students with specific learning and emotional disorders keep up with their nondisabled peers" (p. 102). Even though the
number of students reflect the population of learners with special education needs in the United States, the applicability of technology for learners with special needs also is related to other settings, more specifically, in Slovenia—the context of this study.

Even though online-communication tools: (a) are readily available on the world-wide web, (b) influence the language learner in the classroom, and (c) are imperative in meeting the needs of learners success in today’s ever-growing technological world; the sole usage of technology without purpose is just a means in itself. To investigate the processes of second language learning using technology, one should base it on existent theory and research. Many areas of research have influenced the methodology of foreign language teaching as well as the research agenda within second language acquisition. Theoretical and research advances in first language acquisition, anthropology, sociology, linguistics, cognitive sciences, psychology, philosophy, and second language acquisition, have provided models, theories, and principles that represent our current understanding and knowledge of the underlying processes and factors influencing second language learning and teaching (Ellis, 1994; Johnson, 2004). As such, the field has progressed from the general notion that learners learn languages through imitation, stimulus/response, cognitive abilities and processes, interaction and feedback with other individuals, and/or as an active participant within their social environments.

More specifically, researchers and linguists from both the fields of first and second language acquisition have investigated the type of language input that
language learners receive and its influence on the quality and processes of language learning. Researchers have indicated that feedback given on ill-formed utterances (i.e., negative feedback) within teacher-learner and learner-learner interactions leads learners to notice their gaps in knowledge and, in turn, to revise and construct their interlanguage (i.e., the stage through which a learner passes within language acquisition) into more target-like utterances (Gass & Varonis, 1994; Iwasaki & Oliver, 2003; Long, 1981, 1983, 1988, 1991, 1996; Lyster, 1998a; Lyster & Ranta, 1997; Morris, 2002; Oliver, 1995, 1998, 2000; Panova & Lyster, 2003). Negative feedback then can be used to hypothesize, notice, and/or confirm target language utterance, as such providing the learner the opportunity not only to notice their errors, but also the opportunity to reconstruct in a more correct manner, thereby facilitating their language learning.

Researchers within negative feedback have shown that learners are provided with feedback by native speakers (NS) in their roles as teachers (Gass & Varonis, 1994; Lyster, 1998a; Lyster & Ranta, 1997; Panova & Lyster, 2003), as NS interlocutors (Iwasaki & Oliver, 2003; Oliver, 1995), or as non-native speakers (NNS) (Gass & Varonis, 1994; Morris, 2002; Oliver, 1995) as either NNS young adults (i.e., university students) or as NNS children (Oliver, 1998, 2000). Also, feedback has been shown to be incorporated within subsequent conversational turns (Gass & Varonis, 1985; Oliver, 1995) and that negotiation of meaning or corrective feedback facilitates learners to push their output into a modified, more target-like utterance.
As such, researchers within the interactionist field have argued that learners who receive negative feedback to their ill-targeted utterances have their language development facilitated and, as such, benefit from these interactions. If research finds that within classroom interactions, negative feedback does indeed promote second language development, then it is worthy to investigate the interactional characteristics that learners have with teachers and other learners. Furthermore, the widespread use of online communication tools have been integrated with mainstream learners with or without special educational needs, as well as in foreign language classes, where its efficacy and usage have been researched with second language acquisition. However, no research was found that examines corrective feedback as proficiency changes or research that includes mainstreamed learners with or without special educational needs within an online synchronous environment.

Theoretical Framework

The theoretical foundation for this investigation is based on the interlanguage theory and interactionist theory (Long, 1996; McLaughlin, 1987; Pienemann & Johnston, 1987) situated within studies of negative feedback (Lapkin, Hart, & Swain, 1991; Long & Robinson, 1998; Lyster & Ranta, 1997; Mackey & Oliver, 2002; Schachter, 1991; Schmidt, 1993; Tomasello & Herron, 1988; White, 1991). Various cognitive theories within second language acquisition have examined the internal/mental processes of second language learning (L2); more specifically, on the L2 input learners receive and the cognitive processes that are entailed for coherent L2 linguistic output. One of the better-
known cognitive theories is the concept of interlanguage, coined by Selinker in 1972. In general, interlanguage represents certain stages that learners must pass through to achieve target-language competence (Larsen-Freeman & Long, 1991). Interlanguage is neither the first language (L1) or the target language (TL), but it is its own language. Within the interlanguage process, learners hypothesize about the rules of the L2. This is called hypothesis-testing, in other words, a learner forms her/his own hypothesis of the linguistic rules of the TL, and then based on linguistic input received, the learner may accept or reject the linguistic hypothesis (McLaughlin, 1987). Linguistic structures are accepted by the learner when the hypothesis has been confirmed or rejected if negative evidence (i.e., implicit or explicit correction) had been received (Ellis, 1994; McLaughlin, 1987).

Following the progression of interlanguage theory, there is evidence that learners progress through specific stages of acquisition. Early research based on research from Krashen (1977, 1981, 1985) and Dulay and Burt (1973, 1974, 1975) reveal that second language learners have a natural order of acquisition, regardless of the learner’s L1. Morpheme acquisition studies (e.g., Dulay & Burt, 1975; Krashen, 1977, 1981) show that learners first progress from the linguistic structure of progressive (i.e., continuous) –ing, plural forms, the copula to be, through the irregular past and progressive auxiliary towards the stage of article usage, regular past, third person singular –s and possessive ‘s endings (Krashen & Terrell, 1983). Furthermore, Pienemann (1984, 1989) and Pica (1983) have found that classroom instruction does not seem to modify the
developmental sequences of acquisition orders. Based on this natural order of acquisition of linguistic structures hypothesis, the argument is that comprehensible input is necessary for the target language to be developed.

However, researchers found that adjusted input of the target language is insufficient in itself (Swain, 1985, 1995). Stemming from knowledge on interlanguage development, the interactionist theory has ‘invoke[d] both innate and environmental factors to explain language learning’ (Larson-Freeman & Long, 1991, p. 266). Even though Pienemann (1987, 1989) found that classroom instruction does not alter stages of progression, he also found that the pace and ultimate progression to the target language is influenced by formal instruction. Formal instruction is beneficial when the learner’s interlanguage is prepared for a new linguistic structure that are morphosyntactically and cognitively more complex than previous structures learned. More specifically, when learners are prepared to accept more complex structures (i.e., the learnability hypothesis) then teaching (i.e., teachability hypothesis) is said to be a noticable variable (Pienemann, 1984). Thereby, teachability is dependent on the learnability stage of the language learner. Furthermore, Pienemann and Johnston (1987) found that learners’ acquisition of grammatical structures is explained by memory processing rather than grammatical complexity. As learners progress through the developmental stages, they become more proficient; whereby more complex structures are integrated within their interlanguage. It is hypothesized in this study that as learners acquire new linguistic structures at the same time as
proficiency (i.e., grade level) increases that additional feedback will be provided on more complex linguistic structures.

Interactionist theorists also contend that structures can be acquired if they are noticed (Alanen, 1992; Lightbown & Spada, 1990; Long, 1991, 1996; Tomasello & Herron, 1989). More specifically, learners notice their gap in current target language knowledge by negative evidence in context, whereby it is hypothesized in this study that corrective feedback types might differ based on learners awareness of their peers erroneous utterances. The focus of learners negotiating among each other while obtaining negative feedback may assist with the achievement and pace of target language development within interlanguage.

As mentioned earlier, the interactionist field, acknowledges both internal and external factors and furthermore indicates that negotiation promotes interlanguage development and that learners are most likely to negotiate if opportunities are provided (Long, 1996). More specifically, there is some evidence that there is a connection among conversation, negotiation, and interlanguage development (Long, 1996). As such, negative feedback and negotiations among interlocutors can be factors wherein learners notice their TL gaps (i.e., ill-formed structures) and compare these TL-utterances with their own interlanguage processes (Tomasello & Herron, 1988).

**Purpose of the Study**

This dissertation stems from research findings in the fields of foreign language education, computer-mediated-communication, and special education, as is more specifically extrapolated in the next chapter. As online
communications become a regular part of the language classroom, the field of second language acquisition and teaching is compelled to investigate how foreign language learners use online communication technologies and its usability as a teaching tool. Researchers have discussed the ability to see learning in progress within online synchronous environments (Beauvois, 1992; Kelm, 1992; Kern, 1995). In addition, some indication exists that within synchronous discussions learners report less anxiety, greater peer-to-peer participation, increased language production and awareness of their L2 errors, and utilization of a variety of discourse forms and structures (Beauvois, 1992; Chun, 1994; Gonzalez-Bueno, 1998; Gonzalez-Edflet, 1990; Johnston & Milne, 1995; Morris, 2005; Pellettieri, 2000; Sotillo, 2000). More specifically, synchronous discussions appear to be a facilitative tool for learners who are at-risk to fail (Beauvois, 1992).

Most of the studies within computer-mediated communication (CMC), as is reviewed in Chapter 2, have examined the interactions and benefits of computer-mediated communication within language learning. However, relatively few studies directly examine corrective feedback within online synchronous environments and none to the researcher’s knowledge has examined learner-learner corrective feedback across grade levels within an online environment.

Situated within the work of negotiation and interaction in SLA, research has focused on both comprehensible input and output in terms of the occurrence and forms that lead to acquisition (Oliver, 1995). As such, understandings and
research findings within the area of interaction and negotiation of meaning within SLA highlight the following:

− Comprehensible input is necessary as an innate process triggering an internal process (Krashen, 1985; Schwartz, 1993).

− Comprehensible input makes target language forms more salient and, therefore, learners are more aware of them (Gass & Varonis, 1994; Long, 1996; Pica, 1994).

− Two features of interaction can lead to modified output: form-focused negotiation and negative (corrective) feedback (Long, 1996; Oliver, 1995; Swain & Lapkin, 1995, 1998; Tomasello & Herron, 1988; Varonis & Gass, 1985).

Recent studies also have examined peer corrective feedback with adults in traditional face-to-face foreign language classrooms (e.g., Morris, 2002) and in English-as-a-Second-Language (ESL) classrooms (e.g., Mackey, Oliver & Leeman, 2003). However, there has been very little research (Oliver, 2000) on feedback with children in traditional ESL classrooms (Mackey et al., 2003; Oliver, 1995, 2000) and foreign language classrooms. Most adolescent participants have been studied within immersion settings (e.g., Chaudron, 1977, 1986, 1988; Hamayan & Tucker, 1980; Lyster, 1998a, 1998b; Lyster & Ranta, 1997; Morris, 2005). However, Oliver (2000) stresses the importance of further research examining implicit negative feedback as it corresponds to the age of the learner.

The need for further research within negotiation of meaning; more specifically, with corrective feedback, stem from the interactionist framework, where such negotiations are facilitative and essential to second language
development (Long, 1996). Moreover, research within corrective feedback and the inclusion of special needs children are scant. Initial research is needed, where special need students are included as participants with second language acquisition studies, especially with the onset of mainstreaming special need students. Furthermore, because technology is increasingly being integrated within foreign language learning, further research is merited on the usage of corrective feedback within a technological environment. Also, there is scant research with special needs students with respect to corrective feedback. Therefore, there is a need to explore the nature, frequency, and relationship of corrective feedback of EFL adolescents in online synchronous environments who may and may not have special learning needs. Finally, there is no research found by the researcher that investigates whether corrective feedback differs based on proficiency—more specifically, the grade level of the foreign language (FL) learner.

Therefore, the specific aim of the present research was to: (a) investigate incidences of corrective feedback among EFL adolescent learners within an online synchronous environment, (b) examine the type of feedback, (c) investigate the relationship between error and feedback type, and (d) explore the interactional conversation characteristics of interlocutors in dyads when one or more of the learners have a documented special need. The present study was based on the underpinnings of the Interaction Hypothesis (Long, 1996) within interactionist theory. In addition, this investigation is build on Lyster and Ranta’s (1997) work on corrective feedback characteristics and types with immersion
teachers and whether there are similar characteristics if the participant type differs (i.e., if learner-learner dyads also provide similar types and amount of feedback as do teachers). The synchronous mode or real time, as opposed to asynchronous or delayed-time, was chosen based on Oliver’s (1998) research showing that based on the nature of whole class interactions, students had fewer occasions to respond to feedback when it was provided to them. Oliver (1998) further noted that because of the teacher’s control over language production in the class, students also had fewer opportunities to “risk-take.” Children’s ability to risk-take, is a possible explanation for the larger incidence of corrective feedback provided in learner-learner dyads (Morris, 2005). As such, the synchronous environment was chosen to provide opportunities for students to take risks without a teacher’s presence, and provide students with opportunities to respond to their peers’ feedback.

It is important to note that within error correction and negative feedback research studies, the following terms that are similar in concept are used differently depending on the field of study. When studying error correction from a linguistic perspective, the term negative evidence is used; within discourse analysis, the term repair is most common; psychologists use negative feedback; the term focus on form is predominantly found within classroom second language acquisition research; and corrective feedback is the phrase used by second language teachers. As such, corrective feedback, instead of the aforementioned terms, was used throughout the present study.
Quantitative Research Questions

The following research questions were addressed in the quantitative phase of the study:

Research Question 1. What is the difference in the incidence of corrective feedback in online-synchronous environments provided by adolescent EFL learners to other dyad members as a function of grade level?

Research Question 2. What is the relationship between type of corrective feedback in online-synchronous environments provided by EFL learners to other dyad members and grade level?

Research Question 3. What is the relationship between the type of learner errors and type of corrective feedback in online-synchronous environments provided by EFL learners to other dyad members and grade level?

Hypotheses

The following null hypotheses and nondirectional research hypotheses were tested:

Null Hypothesis 1. There is no difference in the incidence of corrective feedback in synchronous online environments provided by adolescent EFL learners to other dyad members as a function of grade level.

Research Hypothesis 1. There is a difference in the incidence of corrective feedback in synchronous online environments provided by adolescent EFL learners to other dyad members as a function of grade level.
Null Hypothesis 2. There is no relationship between the type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade level.

Research Hypothesis 2. There is a relationship between the type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade level.

Null Hypothesis 3. There is no relationship between learner error and type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade level.

Research Hypothesis 3. There is a relationship between learner error and type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade levels.

Qualitative Research Questions

The following research question was addressed in the qualitative phase of the study:

Research Question 4. What interactional conversation characteristics by dyad members are present in online-synchronous environments when one or more of the interlocutors are learners with special needs?

Qualitative analysis was used for Research Question 4. The general question framed to guide the qualitative analysis was on the interactional characteristics of conversation when one or more of the interlocutors are learners with special needs. Interactional characteristics of conversation are defined as the type of corrective feedback, error types, responses to previous turns or
previous requests, questions, prompts, invitations, and so forth. Qualitative analysis was used in order to make few assumptions about the nature of the participants and population (Fraenkel & Wallen, 2003).

As the research questions show, findings on learner uptake are not presented or analyzed. The importance of learner uptake is an important variable and will be reported in follow-up studies. However, data to follow up on learner uptake were collected simultaneously.

*Educational Significance*

It was hoped that the present research would provide additional information on the nature of corrective feedback within learner-learner interactions in their second language (L2) development within online synchronous environments. Additionally, it was hoped that the findings from this study would provide a better understanding on the linguistic environments of various aged learners, the nature and impact of corrective feedback of mainstream learners with special learning needs, and ways to enhance student learning and differentiate instruction through opportunities for feedback through online tasks. Lastly, it was hoped that this investigation would contribute to the research in second language acquisition in terms of examining corrective feedback with EFL participants within an educational and geographical setting that has not yet been included in the literature on corrective feedback.

In addition, there was also a methodological significance within second language acquisition. As shown in the literature review, most of the studies under review were quantitative or descriptive in nature. However, there is a lack of
mixed methods studies in the area of corrective feedback and computer-mediated-communication. Markee (1994) argues that both quantitative and qualitative studies provide more balance and in-depth information to the study. As such, a sequential mixed design was used as the guiding framework for data collection and analysis of qualitative data (Tashakkori & Teddlie, 2003). This design was chosen because it reflects the sequential nature of the quantitative and qualitative research questions and offers the opportunities for a broader understanding of the participants, which is an important factor in pragmatism (Tashakkori & Teddlie, 2003).

**Definition of Terms**

**Adjacency pairs.** An adjacency pair is a unit of analysis within prototypical examples for conversation analysis. Adjacency pairs are sequences of questions and answers as described by Sacks and Schegloff (1973). Adjacency pairs within this study were used to study the function of the language.

**Asynchronous.** Asynchronous communication is a type of communication that occurs with a time delay (Chapelle, 2001; Warschauer, 1999). Interaction among participants is not in real time and allows interlocutors to respond with a delay. Examples include emails, bulletin boards, and discussion boards.

**Clarification request.** This is one of the corrective feedback types or a negotiation move that provides evidence that the utterance was nontarget-like and that a reformulation is required (Lyster & Ranta, 1997). Examples include: “I don’t understand”, “What?”, “What did you mean?” For the purpose of this study,
clarification requests in response to errors defined within the codebook (Appendix J) rather than content form were examined.

*Computer-assisted language learning*. Computer Assisted Language Learning (CALL) is an area of inquiry within Second Language Acquisition. It examines computer facilitation of language learning based on theories and principles from SLA and other fields (Chapelle, 1998). Computer-assisted language learning includes technology such as software, CD’s, DVD’s, Internet, chat rooms, word processing programs, and web site building.

*Computer-mediated communication*. A field of inquiry in computer-assisted language learning (CALL) and Technology Enhanced Language Learning (TELL) is computer-mediated communication (CMC), which examines computer usage with human interaction (Blake, 2000; Warschauer, 1997). Computer-mediated communication includes asynchronous (e.g., bulletin boards, discussion boards, email) and synchronous (e.g., chat, video conferencing, audio conferencing) interactions.

*Conversation analysis*. Conversation Analysis (CA) is a method used to examine conversational structure and the practices used among interlocutors for achieving comprehensible communication (Heritage & Atkinson, 1984; Markee, 2000). Within-CA sequences of adjacency pairs and initiation/response/follow-up structures were determined.

*Corrective feedback*. Corrective feedback is a term used to indicate error correction studies by second language teachers. More specifically, for the purposes of this study, the term corrective feedback is defined as feedback
moves that are provided by learner-learner interactions or corrective feedback to the dyad member’s errors. In this study specific corrective feedback categories include: explicit correction, recasts, elicitation, metalinguistic feedback, clarification requests, repetition, multiple, and emergent.

Elicitation. Elicitation is a form of corrective feedback that brings out the correct form from the interlocutor who created a nontarget-like utterance (Lyster & Ranta, 1997). Elicitation can take the form of leaving a blank for the interlocutor to complete, using questions, or asking to reformulate the nontarget-like utterance. Examples include: “This is an…..”, “How do you say … in English?” “Can you please repeat what you just said?”

Error. For the purpose of this study, an error is defined as a non-target (ill-formed) utterance that is unacceptable in the target language. This study considered the following errors: grammatical, lexical, orthographical, typographical and spelling, and unsolicited use of the first language (L1).

Error treatment sequence. The error treatment sequence in this study is the initial learner’s (P1) ill-formed utterance, with corrective feedback provided by the interlocutor (P2) and the initial learner’s (P1) response to the feedback. The error treatment sequence was used as the unit of analysis.

Grammatical error. A grammatical error is a type of error that violates the grammar of the target language.

Interactional feedback. Interactional feedback are negotiated interactions among interlocuters. Interactional feedback is referred by researchers (e.g., Mackey, 2000) as recasts and negotiation moves.
**IRF sequence.** The initiation/response/follow-up (IRF) sequence (Mehan, 1985; Ohta, 1993, 1994, 2001; Sinclair & Coulthard, 1975) was used as an additional unit of analysis within conversation analysis. The *initiation* turn can be a question or a statement and includes an error, the *response* is an immediate turn to the initiation and considered as feedback to the error in the initiation turn, and the *follow-up* is praise from the teacher and/or repair of the error in the initiation turn based on the feedback in the response turn.

*L1.* In the field of Second Language Acquisition, L1 is the first language of a second language (non-native) speaker.

*L2.* In the field of Second Language Acquisition, L2 is the second language of the non-native speaker.

**Lexical Error.** Lexical error is a type of error that uses the incorrect word (vocabulary unit) in the utterance (Castañeda, 2005; Morris, 2005). These lexical errors include inappropriate or inaccurate uses of structural derivations (i.e., nouns, verbs, adverbs, adjectives).

**Metalinguistic feedback.** A metalinguistic feedback is an implicit response from the interlocutor that the utterance was nontarget-like in some form (Lyster & Ranta, 1997). Metalinguistic feedback can be seen in the form of meta-analysis of the error. Examples of metalinguistic feedback can be: “Is that singular?” and “Can you find your error?”

**Negative evidence.** Negative evidence is a term used in the field of linguistics to indicate studies on error correction (Bohannon, MacWhinney, &
Other terms include negative feedback, repair, corrective feedback, and focus on form.

**Negative feedback.** Negative feedback is a term used by psychologists to indicate studies on error correction and feedback (Schachter, 1991). Other terms include negative evidence, repair, corrective feedback, and focus on form.

**Negotiation moves.** Negotiation moves is a term used for feedback types such as confirmation checks, clarification requests, and repetition (Mackey, 1999; Mackey, Gass, & McDonough, 2000).

**Negotiation of form.** Negotiation of form in classroom instruction is focused on grammatical points rather than on the meaning of content (Long, 1983, 1985, 1991).

**Orthographic errors.** Orthographic errors represent omissions of letters unique to the English language. These include q, w, x, y. In addition, errors may include additions of letters unique to the Slovenian alphabet, such as č, š, and ž. Orthographic errors were combined within the typographical and spelling error category because it was difficult to place these errors into their own separate categories.

**Recast.** Recast is a reformulation of all or part an ill-formed utterance, excluding the error (Long, Inagaki, & Ortega, 1998; Lyster & Ranta, 1997; Mackey & Philp, 1998). Recasts also have been referred to as paraphrase (Spada & Fröhlich, 1995), repetition with change, and repetition with change and emphasis (Chaudron, 1977).
Repair. In the field of negotiation of meaning, repair refers to non-understanding that occurs and ends with a resolution of some sort or correction (Kasper, 1985) following some type of feedback.

Repetition. Repetition is a type of corrective feedback where the peer repeats the nontarget-like utterance created by the learner (Lyster & Ranta, 1997). The repetition of the ill-formed utterance is in isolation usually with or without intonation. In a CMC environment, this can be denoted with a question mark, exclamation point, an emoticon, and so forth. Examples include, “a children?” and “this horses?”

Special educational needs. Special educational needs (SEN) or learners with special needs are those students who need extra or different types of assistance due to emotional or behavioral disturbances, physical impairments, chemical imbalances, and/or difficulty understanding and developing higher-thinking skills (Ministry of Education and Sports, 2000). It is more difficult for such students to learn or access appropriate education. The following documented special needs were considered for inclusion in this study: Trainable Mentally Handicapped, Speech Impaired, Language Impaired, Deaf or Hard of Hearing, Visually Impaired, Emotionally Impaired, Specific Learning Disabled, Profoundly Mentally Handicapped, Dual Sensory Impaired, Autistic, Severely Emotionally Handicapped, Traumatic Brain Injury, Developmentally Delayed, and Educable Mentally Handicapped (Individuals with Disabilities Education Act [IDEA], 1997; Ministry of Education and Sports, 2000).
**Synchronous environment.** A synchronous environment is a real-time communication mode, wherein interlocutors can meet anywhere and at the same time. In traditional senses, a telephone conversation can be considered ‘real time’; in a technology environment, chat and conferencing are considered ‘real time.’ The present study utilized the chat portion of the synchronous environment.

**Target language.** The target language is the language that the person is learning, and does not include the person’s first language. The first language of the participants in this study was Slovene, and the target language was English.

**Turn.** For the purpose of this study, a turn in the synchronous environment is considered when a message is composed and sent into the chat room either by clicking the ‘send’ button or by pressing ‘enter’ on the keyboard.

**Typographical and spelling error.** A typographical error is a type of error that results in misspelled words because of keyboarding inexperience, rushing, not paying attention. A spelling error is one made when forming words with letters and the letters are not put in the correct order. Due to the ambiguous nature of typing and spelling errors, both of these forms were included under one category.

**Unsolicited use of L1.** Unsolicited use of L1 is the learner’s intentional or unintentionally usage of their native language (L1). Use of L1 was considered as a factor in this study to investigate responses by the dyad member to the learner’s use of L1 (e.g., causing both dyad members to shift to L1, both members redirecting to L2, or ignore the L1 and continue with the topic).
Limitations

Both external and internal validity limited the findings of this study. Onwuegbuzie’s (2003) framework for possible external and internal validity threats to a study was used as a guide in this study. Possible threats to external validity included the following: (a) ecological validity was a threat because the participants were limited to learners of English as a foreign language from a specific geographic area in Europe; (b) population validity was a threat because the sample sizes from the combined schools were relatively small; (c) temporal validity threatened external validity because of the limited time of data collection; and (d) reactive arrangements, the effect of participants’ reactions by being aware that they were participating in the study, could have influenced the validity of the findings.

Several threats to internal validity of the findings were considered: (a) the amount of data might have generated responses that did not yield data saturation; (b) intact classes with learners that have a differential or too similar of a range of proficiency was another threat to validity; (c) researcher bias also was a threat that because certain categories might have been constructed or collapsed based on personal beliefs of the researcher (i.e., illusory correlation); (d) time constraints was a threat because there was only one collection time used for analysis; however, more participants were chosen from various schools to somewhat alleviate this limitation; and (e) instrumentation was a threat pertaining to the reliability and validity of the coded data. To alleviate somewhat external and internal validity threats of the quantitative data, inter-rater and intra-
rater checks were performed, as well as peer debriefings and the completion of a questionnaire prior to data collection (Lincoln & Guba, 1985; Miles & Huberman, 1994).

Finally, research validity in qualitative research was considered in terms of (a) descriptive validity, (b) interpretive validity, and (c) theoretical validity. To obtain descriptive validity, researcher triangulation was used. The researcher of the current study used both questionnaires as well as follow-up interviews with 5% of the participants, which included extreme points within the data set and special need learners. Also, field notes during data collection and data analysis were used throughout the process. Interpretive validity was achieved by accurately supplementing student accounts with a selection of direct quotes obtained through interviews. Finally, theoretical validity was obtained by including two other peers to review the data, interpretation, and conclusions of the study.

**Delimitations**

The delimitation of this mixed method study imposed by the researcher included the choice of which grade levels to study. For the purposes of this study Grade 7 was chosen initially because students already had approximately two years of EFL experience, thereby having some foreign language experience, at a beginner or upper-beginner level of English. Following grades were mainly chosen by students, and teachers’ availability and quantity of students. Therefore, Grade 7, 8, 10, and 11 were the final choices.
Organization of the Remaining Chapters

The remainder of this dissertation includes the review of literature in Chapter 2 on interaction, feedback, computer-mediated communication, foreign language learning in Slovenia, and foreign language learning with mainstream and special needs students. The dissertation then continues with Chapter 3 where the research design, procedure, instruments, data collection, and data analysis are described. The results are presented in Chapter 4. Finally, Chapter 5 provides a summary of the findings, discussion, recommendations, and implications.
CHAPTER 2: REVIEW OF LITERATURE

Overview

Because this study examined the types and distribution of corrective feedback between learner-learner interactions, the literature review reflects the interdisciplinary nature of this study and combines it with a theoretical framework that guided this investigation. Thus, the first section describes research and main findings of studies on feedback and computer-mediated communication within second language acquisition. The second section discusses foreign language learning in Slovenia, as well, as the description of special learning needs and inclusion within mainstream classrooms. A summary concludes this chapter.

Theoretical Overview

Research into the role of feedback and negotiation of meaning in SLA goes back more than 20 years, beginning with Krashen’s (1982, 1985) arguments that “natural” approaches can lead to mastery of the target language. His works have resulted in many debates furthering the current knowledge of language acquisition. He contends that the subconscious processes, the natural approach, along with comprehensible input, are factors that lead to acquisition. Krashen proposed the following five hypotheses on the phenomena of second language: (a) the acquisition/learning hypothesis, (b) the monitor hypothesis, (c) the natural order hypothesis, (d) the affective filter hypothesis, and (e) the input hypothesis (Krashen, 1985). In the acquisition/learning hypothesis, Krashen
distinguishes between language as being acquired (i.e., similar to first language acquisition) versus learned (i.e., classroom instruction). Krashen argues that the conscious processes of language practice cannot cross over to the unconscious or the acquired language system. Speakers utilize the ‘learned’ or conscious process to focus on form (i.e., grammatical structures), thereby monitoring their output. Learners who focus on meaning rather than on form develop their acquired (versus learned) linguistic system (Krashen, 1976, 1982, 1985), which is posited within the monitor hypothesis. The natural order hypothesis states that there is a natural order of acquiring linguistic structures that are not altered even with formal instructions. Furthermore, Krashen claimed that affective factors (e.g., anxiety, motivation, stress) were posited to influence second language acquisition. The affective filter hypothesis causes a filter to be raised (i.e., a mental block) when the affective factors are negative (e.g., higher anxiety), whereby linguistic input may not be comprehensible to the learner. Or the filter may be lowered, which may be positive towards comprehensible input.

Comprehensible input is the central claim within the input hypothesis, wherein input that is received needs to be understood in order to be acquired. Krashen (1983) illustrates progress with the $i + 1$ structure, where learners receive input that is one stage beyond their current level of second language development (i.e. interlanguage), which in returns pushes linguistic improvement.

Krashen’s five hypotheses stem from Chomsky’s (1965) innatist view that language acquisition is a subconscious process and that language acquisition is based on an internal language device. Krashen’s hypotheses have been
universally accepted within the teaching field; however, researchers have criticized his failure to explain a hypothetical device, known as the language acquisition device (LAD) that allows people to acquire language innately (Chomsky, 1965) for second language learners. Some researchers have contended also that these hypotheses are non-testable (Gregg, 1984; Pienemann & Johnston, 1987) and express concern about Krashen’s use of only anecdotal or introspective methods to obtain data (McLaughlin, 1978, 1987). In addition, Krashen has been criticized for his sole emphasis on comprehensible input (Long, 1991; Swain, 1985), whereby comprehensible input, within Krashen’s framework, is the language that is understandable to the learner by producing language that is less complex or simplified.

However, Swain (1985) stated that not only is comprehensible input an important factor, but comprehensible output, or the language produced by the L2 learner, should not be overlooked as a factor in second language learning. In comprehensible output, learners notice a gap in their L2 production and re-modify to produce target language input. Learners achieve comprehensible output by modifying and approximating their production eventually to produce successful target-like output (Swain, 1985). It has been further argued that when learners modify their output, the interlanguage utterances for greater message comprehensibility are restructured and affect the L2 learner’s knowledge base (Swain & Lapkin, 1995). Gass and Selinker (1994) further highlighted the distinction between comprehensible input and comprehended input. Comprehensible input is controlled by the person providing input and
comprehended input is controlled by the learner, wherein the learner is or is not undertaking all the work to understand the intended message. In their model of second language acquisition, Gass and Selinker include comprehended input to encompass the various levels of comprehension that exist, including both comprehension of structure and meaning.

Based on the then current understanding of second language acquisition, the communicative approach to teaching had steadily received more widespread acceptance in the foreign language teaching field as a viable way to facilitate foreign language learning. This was best actualized through Canadian French immersion programs. In these immersion programs, children learned to speak French fluently; however, it was found (Harley & Swain, 1984; Swain, 1985) that the immersion learners’ accuracy in syntax and morphology was poor. An argument given was that the learners did not have sufficient opportunities to speak nor to negotiate meaning. Various researchers have attempted to explain these phenomena. The following section reviews current understandings as well as reviewing literature on negotiation of meaning, and continuing with the role of feedback in second language acquisition.

Negotiation of Meaning

From the current research on comprehensible input, output, and interlanguage development, Pica, Holliday, Lewis, and Morgenthaler (1989) argued that negotiation in terms of negotiation of input also is a mediating factor in language acquisition. Stevick (1976, 1980) also contended that to facilitate acquisition, there needs to be active involvement. Long (1996) furthered this and
updated his original Interactionist Hypothesis. Negotiation of meaning, according to the updated Interactionist Hypothesis, is the negotiation of meaning between the learner and usually a more proficient speaker of the language (Long, 1996). This type of negotiation is an important element in language acquisition in that learners, because of the overflow of information, focus on meaning rather than on form (Long, 1996). Lyster and Ranta (1997) also proposed, based on van Lier’s (1988) distinction of conversation and didactic functions, that negotiation in L2 classrooms has two functions. The first function, classroom function, involves the negotiation of meaning, which has been an important component of immersion classrooms. The second function, didactic function, involves the negotiation of form, which includes not only comprehensibility of a message, but also the encouragement of self-repair and feedback. Negotiation can be influenced by several examples such as the type of task, characteristics of participants, structure of participants (Ellis, 1994), and context. Several research studies have examined negotiation from these perspectives, as will be shown below.

Savignon (1972) examined the context of communicative classrooms (e.g., informal instruction) and the role of focusing on form or the grammatical structures (e.g., formal instruction) within college French language classes. In this study, students who received form-focused instruction were compared to students who received form focused plus an additional hour of communicative tasks. The results revealed that the students receiving the additional hour of communicative tasks outperformed the group with no additional communicative
tasks, but there were no differences in the linguistic measure between the two groups.

The results also were similar in Montgomery and Eisenstein’s (1985) research on form-focused instruction in combination with a more natural communicative interaction. The results of their study showed that the communicative instruction group showed higher gains on linguistic measures (accent, comprehension, grammar, and vocabulary) than did the grammar-based English as a Second Language (ESL) group. A far less researched area is within communicative contexts where the emphasis is on grammar. However, Beretta and Davies (1985) did examine this area in ESL schools in India. The results showed that learners in communicative courses performed better on communicative tests and outperformed grammar-based programs on contextualized grammar and dictation tests. Participants in grammar-based programs performed better than did those in communicative courses on discrete point grammar tests. Additionally, Spada (1987) investigated time spent on grammar instruction in communicative adult ESL programs and found that learners who received more explicit grammar instruction (i.e., focus on form) received similar results or even performed better on grammatical measures than did those learners who received less explicit grammar instruction. Students in both groups received similar results on the communicative measures.

The above noted research examined the role of focus on form in communicative settings and its effect on second language acquisition. Tomasello and Herron (1988, 1989) further examined when attention to form is most
functional, with college students in a French foreign language course focusing more on language form than on communication. The participants in the study were divided into two groups: in the first group, learners were corrected after making an error, whereas in the other group students were alerted beforehand of certain rules, exceptions, possible places for error, and so forth. They found that the former group performed better as measured by immediate and delayed post-tests, thereby favoring turns that included repetition with change and repetition with change and emphasis, also known as recasts. However, caution should be noted when generalizing such findings to communicative classrooms because the instructional context of this study was more focused on language than on communication. Researchers also have expressed caution regarding the validity of Tomasello and Herron’s (1989) findings, namely due to internal validity (Beck & Eubank, 1991) and external validity (Long, Inagaki, & Ortega, 1998) concerns.

The role of form-focused instruction in primarily communicative contexts was explored by Lightbown and Spada (1990). The data for their study were from 1,000 students in 40 intensive ESL classes and approximately 200 students in ESL programs. Their database included four intact classes in Grades 5 and 6, which amounted to 100 second language learners. Based on their initial observations, there were different linguistic results depending on the type of instruction received. The authors then further explored this issue by asking, “Are there other differences in learner language outcomes that may be related to differences in instruction?” (p. 435). First, the researchers used the modified version of the Communicative Orientation of Language Teaching (COLT; Spada
& Fröhlich, 1995) scheme--Part A to collect data for both the macro-level and micro-level analysis. At the macro level, real life coding was taking place to describe activity type, student- versus teacher-centered material, macro skills, and whether the focus was on meaning or form and, if on form, if vocabulary, pronunciation, grammar, or discourse was targeted. The micro-level analysis used audiotapes and transcripts of the audiotapes to classify teachers’ behaviors as being either instructional or reactive. Instructional behavior was defined as teachers presenting a certain point and allowing students to practice it, whereas reactive behavior was conceptualized as being a reaction to a student’s error. The results of Lightbown and Spada’s (1990) study showed that all four classes were communicative; however, the instructional time on focus on form differed as well as did the instructional behaviors of the teachers. Direct grammar lessons were almost never taught; however, grammar lessons were given more as a reaction to learners’ errors. Based on these initial findings the authors hypothesized that “the learner language in each class might show signs of the influence of specific items on which an individual teacher had chosen to focus” (p. 437). To verify the hypothesis a picture card game was created where a learner described a picture until the interviewer could guess which one was being described. The task was audio taped and transcriptions were made for the data to be interpreted. Using an analysis of variance (ANOVA), differences among the classes were found in grammatical accuracy of the plural verb and progressive–ing (e.g., books and sitting). With regard to adjective placement in noun phrases, two of the four classes studied (Class 2 and Class 4) were statistically
significantly different using Tukey’s multiple comparison procedure. The possessive determiners were ascertained by the accuracy of “his/her” usage and the number of students who used both “his and her” correctly. Class 2 had the least accurate results in both situations. The authors suggested that these results were due to their development levels, which might have been somewhat different from those of the other classes.

Lightbown and Spada (1990) caution that the data for this study were taken after the fact and that the data could not be generalized. However, they suggested that based on the fact that the participants had similar backgrounds and exposure to ESL, the differences found might be related to the type of instruction provided, as shown by the fact that Class 1 outperformed all other groups on all the grammatical items in terms of knowledge and accuracy and had a teacher who focused on form most frequently. This was in contrast to Class 4 where the teacher did not focus on grammar at all during the observations and which had the lowest grammatical accuracy. The authors did confirm, “certain teachers seemed to have a particular set of structural features on which they placed more emphasis and for which they had greater expectations for correct use” (p. 443). In addition, the results in this study provide further evidence that form-focused instruction within communicative contexts are more beneficial in terms of higher levels of linguistic knowledge and performance than just purely communicative classrooms.

Further studies have examined negotiation of meaning and conversational interactions among various interlocutors. For example, Varonis and Gass (1985)
examined conversational interactions between native (NS) and non-native speakers (NNS), where the major purpose was to see “how conversations between non-native speakers differ from those between native speakers on the one hand and between native speakers and non-native speakers on the other hand” (p. 71).

Varonis and Gass (1985) contextualized their study by briefly describing research already conducted between NS and NNS and then by describing conversational discourse between NNS based on data gathered for their study. The authors assumed that linguistic activity between NNS are different than that between other types of discourse especially with respect to negotiation of meaning. They based this assumption on a NS-NS discourse study conducted by Schegloff, Jefferson, and Sacks (1977), who found that other-correction (as opposed to self-correction) can be embarrassing and does not provide interlocutors with status of equality while participating in the discourse. Varonis and Gass argued that when interlocutors have a shared competence (as with NNS-NNS discourse), it would give the interlocutors more opportunity for negotiation of meaning. Varonis and Gass suggested that simplified input (i.e., simplified vocabulary and grammar) is not as beneficial as the input based on negotiation of meaning. This suggestion was documented in Scarcella and Higa’s (1981) study that compared NS-NNS children with NS-NNS adolescents, where simplified input was greater with children participants; however, it was found that adolescents worked harder at keeping conversations flowing.
Based on Scarcella and Higa’s (1981) findings, Varonis and Gass (1985) examined the role of negotiation of meaning among various participants: NS/NS, NS/NNS, and NNS/NNS. The database included 22 dyads, of which 14 dyads were between NNS, 4 dyads were between NS and NNS, and the remaining 4 dyads were between NS. None of the participants had previously met, and the 14 NNS-NNS dyads were matched for gender. The participants were from the University of Michigan, where the English as a Second Language (ESL) NNS-NNS dyad members attended the English language program. The NS-NNS consisted of conversation partners, and the NS-NS were university students. Each dyad was audio-recorded to speak freely in English. No other instructions were given. The first five minutes of each conversation was used for analysis. Based on previous research on discourse progression in conversations with interlocutors who have similar backgrounds, Varonis and Gass proposed that when interlocutors are not on “equal footing” (p. 73), nonunderstandings occur. Nonunderstandings within their study were defined as “those exchanges in which there is some overt indication that understanding between participants has not been complete” (p. 73). In order to build a model of negotiation of meaning, they suggested that nonunderstanding routines have one of two functions: (a) negotiation of nonunderstanding and/or (b) continuation of conversation. Misunderstandings that have gone unrecognized by one of the interlocutors were excluded from the database, whereas nonunderstandings were included. A proposed model was illustrated by the authors for nonunderstanding. The first part of the model consisted of a trigger (an indication that a nonunderstanding
occurred from the hearer of the utterance). The second part of the model, the
resolution, consisted of: (a) an indicator, which is a suggestion to the speaker
that a nonunderstanding has occurred on the part of the hearer, wherein the
normal flow of conversation is interrupted—also known as negative input
whereby an indication that the utterance is in some way inappropriate
(Schachter, 1984); (b) a response, which is the recognition on the part of the
speaker that a nonunderstanding has occurred; and (c) reaction to response,
which is an optional turn that may occur to the nonunderstanding before
continuing with the previous conversation path. This model is displayed in Figure
1.
Figure 1. Varonis and Gass’ (1985) model of nonunderstanding.

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>I -&gt; R -&gt; RR</td>
</tr>
</tbody>
</table>

Key:

T = Trigger. A trigger is an indication that a nonunderstanding occurred from the hearer of the utterance.

I = Indicator. An indicator is a suggestion to the speaker that a nonunderstanding has occurred on the part of the hearer. The normal flow of conversation has been disturbed. It is also termed as negative input by Schachter (1984).

R = Response. A response is the recognition on the part of the speaker that a nonunderstanding has occurred.

RR = Reaction to Response. A reaction to response is an optional turn that may occur to the nonunderstanding before continuing with the previous conversation path.
Varonis and Gass (1985) expanded the model in Figure 1 to include
comprehension checks (CC) with interlocutor’s optional stepping out of
conversations as denoted by the arrows in Figure 2. Comprehension checks may
occur before or after any turn in the model, following a trigger. Comprehension
check utterance or utterances may be expressed by the speaker or the hearer.
Figure 2. Varonis and Gass’ (1985) model of nonunderstanding including comprehension checks and interlocutors stepping out of conversations.

\[
T \rightarrow (CC) \rightarrow I \rightarrow (CC) \rightarrow R \rightarrow (CC) \rightarrow RR-(CC)
\]

**T = Trigger.** A trigger is an indication that a nonunderstanding occurred from the hearer of the utterance.

**CC = Comprehension Checks.** Comprehension checks occur before or after any turn in the model, beginning after a trigger.

**I = Indicator.** An indicator is a suggestion to the speaker that a nonunderstanding has occurred on the part of the hearer. The normal flow of conversation has been disturbed. It is also termed as negative input by Schachter (1984).

**R = Response.** A response is the recognition on the part of the speaker that a nonunderstanding has occurred.

**RR = Reaction to Response.** A reaction to response is an optional turn that may occur to the nonunderstanding before continuing with the previous conversation path.
Using this model to analyze the data, the authors confirmed their assumption that the highest incidence of negotiation routines were found in those instances where the interlocutors did not share the same language or proficiency level. The lowest incidence of nonunderstanding routines occurred in exactly those dyads that shared a language and proficiency level. The results were analyzed with t-tests (comparing the means between and within) the two groups. Based on their findings, the authors suggest that the NNS-NNS interaction is an important factor for NNS when acquiring a language, because it provides a common ground to practice skills and provides the availability of comprehensible input through negotiation that facilitates SLA. Gass and Varonis (1991) conducted a follow-up study on the issue of nonunderstanding and towards a model of negotiation. They concluded that when there is incomplete understanding then repair (or correction; Kasper, 1985) occurs and is shown in the form of negotiation of meaning (Ellis, 1994), which can be seen through, for example, confirmation checks, clarification requests, self, and/or other repair. In other words, negotiation of meaning is the interaction and effort between interlocutors to achieve mutual understanding using various strategies (Ellis, 1994; Long, 1996).

However, how does modified interaction differ with teacher-directed lessons and students working within groups? Doughty and Pica (1986) conducted a follow-up investigation from an initial study (i.e., Pica & Doughty, 1985), in which the researchers hypothesized that there would be more conversational modification by students in groups versus teacher-fronted
lessons. Modified interaction in both studies was defined as “interaction which is altered in some way (either linguistically or conversationally) to facilitate comprehension of the intended message meaning” (p. 306). The hypothesis was not confirmed in the initial study. The authors suggested that there were two main reasons for lack of conversational modifications: the type of task and the role of group members. In the initial study, an optional one-way information gap task was used, where participation among all learners was not required. Also, the role of group members might have had an effect on the results. Possibly, because certain members may have been more proficient and more dominant, thus not allowing or providing opportunity for other group members to participate. In addition, the role of proficiency might have had an additional effect. In particular, high-proficient interlocutors understood all utterances such that no modification was needed; whereas low proficient interlocutors did not respond due to nonunderstanding, or in some cases, unwillingness. Therefore, a follow-up study was conducted by Doughty and Pica (1986) to examine both the type of task (required vs. optional information exchange) and participation pattern (teacher vs. group vs. dyads). As such, the aim of this study was fourfold:

1. Compare teacher-directed and group interactional pattern with both optional and required information tasks;

2. Compare modified interaction across teacher-directed versus group modified interaction where the task is held constant;

3. Examine the role of repetition; and

4. Assess the total amount of interaction within the tasks.
The purposes of the study were based on the hypothesis that: (a) information exchange activities would generate more modified interaction than from those activities where exchanges are an optional task, and (b) more interaction would take place in dyad pairings rather than in group situations, which should result in more opportunities for modification than in teacher-directed lessons. The latter purpose was based on the authors' assumption that teachers would be less likely to seek clarification or confirmation, and more proficient students would not check comprehension, whereas less proficient students might feel "reluctant or embarrassed" (Doughty & Pica, 1986, p. 309) with clarification or confirmations in teacher-fronted lessons. Consequently, the researcher hypothesized that within group settings, the amount of modification would be higher than with teacher-fronted lessons with fewer chances for embarrassment and the highest amount of interaction within dyads, wherein only two participants interact at one time.

The participants chosen were six intermediate adult ESL classes (three for the current study and three from the previous study used as archival data). The teachers chose at random to place students both in dyad and group situations. The data for their follow-up study were collected in the same manner as in the previous study. The tasks were pilot-tested and showed that they were not too difficult for the students.

The two-way information gap activity used in all three settings was a felt board garden activity, where each participant received only pieces of information; however, when the information is put together, it revealed the complete activity.
To control for practice effect, the teacher first provided a demonstration lesson with frequent comprehension checks. For the teacher-directed lesson the teacher began the lesson, stopped after 15 minutes for questions and answers, and then continued. In all three interactional patterns (teacher-directed, group, and dyad) the activity was in progress at least 20 minutes before a 10-minute sample was taken. Modified interaction was the unit of analysis and included clarification requests, confirmation checks, and comprehension checks. Repetition was considered as taking place when communication broke down or when both interactants actively continued or created further topics.

The results for effects on task and participation pattern on the modification of interaction showed that required information exchange produced statistically significantly more interaction as analyzed via a two-way analysis of variance (ANOVA). As such, researchers who examine any type of participation pattern should take into account tasks as a variable when examining participation pattern and negotiation.

Results also found a statistically significant interaction between task and participation pattern; however, participation pattern alone did show a main effect. A one-way ANOVA did reveal a statistically significant main effect for participation pattern as an independent variable, wherein modification of interaction was higher in the group versus the teacher-fronted lessons. It is interesting to note that here was no difference between group and dyad participation patterns. A possible explanation outlined by Doughty and Pica
(1986) might be the interactional experience, as has been argued also by Pica and Long (1986), between NS-NNS conversations.

Statistically significant results were found on the task type, where required information exchange resulted in more modified interaction, and statistically significant results were found between task and participation pattern (Doughty & Pica, 1986). The researchers further investigated the role of repetition, which was tested by eliminating all instances of repetition in the database in order to determine effect on tasks and participation pattern. Similar results emerged as with those instances where repetition was included. This is not to say that repetition is not an important component of modified interaction. Indeed, Pica, Doughty, and Young (1985) found quite the opposite. These researchers have attempted to define repetition, and have found that repetition might be the most critical component of interactional modification.

Doughty and Pica (1986) also examined the total amount of interaction. This was tested using the sum of all T-units and fragments based on Hunt’s (1970) description. The results showed that the amount of speech increased when the task was required, as opposed to being an optional task, that the teacher-fronted interaction on required tasks generated more interaction, and that the group generated the least amount of interaction on optional tasks. Based on these results, Doughty and Pica (1986) concluded that when students are engaged in required information tasks, the students will speak more and that modified interactional will increase when students work in groups. These results are supported by other findings (e.g., Newton, 1995), where two-way tasks
resulted in higher frequencies of negotiation of meaning. Alongside the findings of the initial and follow-up study, Doughty and Pica (1986) argued that both group work and pair work provides students with opportunities for target language production and modified interaction, but that the sole use of group work is not suggested. L2 learners produce many ungrammatical utterances that tend to be corrected by the teacher who is the sole input of correct utterances in the classroom. Thus, the teacher’s role, task type, and interactional patterns all are factors that affect modified interaction and amount of input.

In summarizing the above review of literature, it can be said that the type of input, conversational interactions with both opportunities for input and output, and negotiation facilitate second language development to a various degree. It is not just the above interactions that increase possibilities for successful target language attainment, but also the negotiation between interlocutors provide successful contribution to a conversation. The type of task also influences the frequency of interaction. Doughty and Pica (1986) showed that required information, through two-way tasks, produced more interaction. Even though Gass and Varonis (1985) did not find any difference in the two-way tasks as measured by indicators of negotiation, arguments made by Long (1989) suggest that there is enough evidence to show the usefulness of negotiated work, as well as more productivity with two-way tasks. Negotiation of meaning can be a factor where learners are able to notice their gaps. Long et al. (1998) point out that “negotiation of meaning elicits negative feedback, including recasts. Such feedback draws learners’ attention to mismatches between input and output” (p.
The following section focuses on the role of feedback and studies that have been conducted to determine its precise influence.

**Feedback**

Within the area of feedback, there have been various definitions and terms used depending on the field of study. Schachter (1991) outlines the differences among feedback terms in the literature. Negative feedback tends to be used within the domain of psychology or concept learning, negative data or negative evidence within the field of linguistics or language acquisition, and corrective feedback is a term used in the pedagogical field of second language teaching and learning. Lyster and Ranta (1997) also note that corrective feedback is a term used by second language teachers, whereas focus on form is used within classroom SLA research. For the purposes of the present study, the term corrective feedback was used for the following three reasons: (a) corrective feedback is situated within the pedagogical realm, whereas the other terms belong within other related fields; (b) to examine types of corrective feedback and whether they are similar to those provided by second language teachers; and (c) to determine if corrective feedback techniques differ based on participation type (i.e., within learner-learner dyads and the role of grade level of the learner dyads). Other terms were used, whenever necessary to reflect certain domains and fields of feedback.

The notion of corrective feedback, as it is known in the field of second language teaching/learning, has its roots in the field of first language acquisition, which also has been integrated within the field of second language acquisition.
Earlier research focused on the significance, existence, utilization, and perception of corrective feedback in instructional and nonpedagogical settings (e.g., Lyster, 1998a, 1998b; Mackey & Oliver, 2002; Oliver, 1995), and recent studies have explored corrective feedback within different pedagogical contexts (e.g., Iwasaki & Oliver, 2003; Morris, 2005; Panova & Lyster 2003).

When discussing feedback, research findings on learner errors also should be provided. Hendrickson (1978) described the historical perspective of learner errors, and the then current research on learner errors in the classroom. Guiding his review of classroom research on error correction, he outlined the following questions:

1. Should learner errors be corrected?
2. When should learner errors be corrected?
3. Which learner errors should be corrected?
4. How should learner errors be corrected?
5. By whom should learner errors be corrected?

Based on his review of the research, he summarized that learner errors (both oral and written) should be corrected; however, there is no consensus from the literature on when to correct those errors, especially errors that seriously impair communication, stigmatize learners, or are frequently produced (Hendrickson, 1978). Furthermore, direct corrective techniques have been shown to be least beneficial (Hendrickson, 1978) and that peer correction might be more helpful to students as an effective instructional strategy than might teacher correction of learner errors. Indeed, earlier research suggested that learners tend
to correct each other’s errors once the “corrector” already has overcome certain lexical and grammatical problems (Hendrickson, 1978). In regards to the questions outlined by Hendrickson (1978), Lyster and Ranta (1997) argue that research findings on such fundamental questions are still inconclusive.

Research studies on whether learner errors should be corrected have been examined within experimental studies of classroom-instructed SLA. The *when, which, and how* have been examined within observational studies, and the *who* has been studied in the area of negotiation of meaning. However, gaps still exist in the research on learner errors with more rigorous analyses that need to be carried out.

From the linguistic perspective, learners have two types of linguistic information available to them; these are known as positive evidence and negative evidence (Long, 1996; Long & Robinson, 1998). Positive evidence is defined as: (a) providing the correct form of input to the language learner; or (b) learners’ exposure to utterances that tends to be well formed (Long & Robinson). Conversely, negative evidence helps the learner to notice the gaps in their own learning by giving the learner information of target language and non-target language samples (Long & Robinson). Positive evidence might be authentic or simplified/elaborated, depending on the learner’s proficiency level. Negative evidence can be pre-emptive (e.g., based on the learner’s error, rules are given) and represent reactive negative feedback (which can be explicit with overt error correction) or implicit (Long et al., 1998; Long & Robinson, 1998). Negative evidence, as opposed to positive evidence, has been challenged by first
language acquisition researchers (e.g., Beck & Eubank, 1991; Pinker, 1989). Working within an innatist paradigm, first language acquisition researchers believe that the quality and quantity of negative evidence is too inconsistent for language learning to occur (Grimshaw & Pinker, 1989; Pinker, 1989) and that language is acquired through Universal Grammar (UG; Chomsky, 1975), whereas negative evidence has little impact on UG and does not alter the interlanguage system of the learner.

The most cited research studies on Canadian French immersion students (Lapkin, Hart, & Swain, 1991) have shown that linguistic errors are very much evident in immersion learners’ speech, even though learners achieve fluency in their L2. Schmidt (1993) also argued that noticing errors is an additional factor in acquisition, and White (1989, 1991) contended that with positive evidence alone, certain structures would not be acquired.

In first language (L1) acquisition (e.g., Pinker, 1989) and L2 (Larson-Freeman & Long, 1991; Schachter, 1991; Swain, 1985) studies, negative feedback has been a point of contention. Different theorists have viewed the role of negative feedback as inconsequential, such as the innatists (Grimshaw & Pinker, 1989; Pinker, 1989), or relevant (Tomasello & Herron, 1988; White, 1991). Long et al. (1998) separate negative feedback into explicit feedback and implicit negative feedback, and define the difference between the two forms of negative feedback as the following: “explicit feedback….with the speaker’s attention overtly directed at problematic code features. With implicit negative
feedback, on the other hand, the message, not the code, remains the interlocutor’s primary attentional focus” (p. 358).

Long et al. (1998) argue that the role of negative feedback is not only concerned with ultimate attainment, but also with the rate of attainment (Ellis, 1994; Long, 1983, 1988), which also supports Pienemann, Johnston, and Brindley’s (1988) contention that instruction does not have an effect on certain developmental sequences, but may have an effect on the variational features of the target language. Instruction does not cause learners to skip developmental stages. However, instruction does increase the chance on the rate and ultimate attainment (i.e., quality) of the target language development—consistent with Long’s (1996) updated version of the Interaction Hypothesis, which states, “Negative feedback obtained in negotiation work or elsewhere may be facilitative of SL development, at least for vocabulary, morphology, and language-specific syntax, and is essential for learning certain specifiable L1-L2 contrasts” (Long, 1996, p. 414).

Focus on form within a meaningful context has been argued as being an important factor in language learning (Gass & Varonis, 1994; Long, 1996; Spada & Lightbown, 1993). Besides selective attention to form with negotiation, negative (corrective) feedback also leads to modified output (Long, 1996; Lyster & Ranta, 1997). Negative feedback gives an opportunity for learners to compare target-like utterances with their own interlanguage utterances (Tomasello & Herron, 1988), whereby the type of feedback can be either explicit or implicit. An example of explicit corrective feedback can be:
A: He go home

B: No, you should say he ‘goes’ home.

Here, the response to the ill-target utterance included an explicit correction. In contrast, implicit negative feedback to the above ill-target utterance can be seen as:

A: He go home

B: John goes home everyday.

This form of corrective feedback would be considered a recast, because the ill-formed original utterance is incorporated into the corrective feedback with the target form supplemented.

Researchers in the area of recasts and negotiation moves (i.e., confirmation checks, clarification requests, and repetition) have examined the effects of L2 learners’ participating in interaction (Ellis & He, 1999; Gass & Varonis, 1994; Mackey, 1999); benefits of interactional feedback (DeKeyser, 1998; Long et al., 1998; Lyster & Ranta, 1997; Mackey & Philp, 1998; Swain, 1985, 1995; Swain & Lapkin, 1998); the individual types of feedback in interactional conversations (Lyster, 1998a, 1998b; Lyster & Ranta, 1997); and in which way participation supports linguistic development (Long, 1996; Pica, 1994). Benefits of interactional feedback have shown more target-like output by the L2 learners (Lyster & Ranta, 1997; Oliver, 1995)—leading towards modification of output (DeKeyser, 1998; Swain, 1985, 1995) and promoting L2 development (Pica, 1992). There have been mixed findings regarding the specific utility of certain feedback types, namely, recasts. Long et al. (1998) and Mackey
and Philp (1998) have found advantages with those learners who have been exposed to recasts. However, Lyster and Ranta (1997) have found that recasts represented the least effective feedback type to lead to learner repair.

*Feedback Studies Within Teacher-Learner Interactions*

Initial speculation on the potential of teacher feedback and the instructional process had been first mentioned by Alwright (1975). He argued that error treatment was “imprecise, inconsistent, and ambiguous” (p. 574). Fanselow (1977) examined corrective techniques of teaching in adult ESL classrooms and found that corrective techniques were confusing for learners. Roberts (1995), who examined Japanese learners’ ability to identify teacher feedback, found that almost one-half of the recasts were not identified by the learners. Further, Doughty (1994) examined corrective feedback with adult learners of French and found that the learners responded to one-third of the recast moves. Based on this finding, Doughty concluded that learners tended to notice teachers’ feedback, even though one-third could be considered a low number to generalize noticing feedback. Chaudron (1977) examined the relationships among type of error, feedback, and learner-repair and developed a comprehensive model of corrective discourse from his database on immersion students. He found that the most common type of feedback was teachers’ reformulation of learners’ utterances with the inclusion of emphasis, reduction, expansion, and repetition. Slimani (1992) studied young ESL learners’ notice of forms and self-repair and found that students did not notice error correction in those instances when the teacher reformulated learner utterances implicitly; consequently no further
involvement from the students occurred. Not noticing error correction could be attributed to the developmental and proficiency level of individual ESL students.

Of particular relevance, and a basis of the present study, is Lyster and Ranta's (1997) study on corrective feedback and learner uptake in four immersion primary classrooms. Here, the authors argued the need for further research among different variables in a variety of teaching contexts. The purpose of their study was to develop an analytic model of error treatment sequences and apply such a model to the primary classrooms. The purpose of developing a model and applying it was to determine the frequency, distribution, and responses of corrective feedback.

The complete database consisted of six French immersion primary school classrooms in the Montréal area. However, data used for this study were of four classes in one grade level: three Grade 4 classes and a split Grade 4 and 5. The data included 27 lessons from French language arts and subject matter courses and totaled 18.3 hours or 1,100 minutes. All teachers were experienced, with more than five years of experience, and were selected based on their willingness to participate in the study. The lessons were audio taped and the Communicative Orientation to Language Teaching (COLT) coding scheme (Spada & Fröhlich, 1995) was adapted for the immersion classroom. The COLT was used to capture teacher-student interactions. The authors combined the COLT coding scheme with Doughty's analysis of fine-tuning feedback to develop a model of error treatment sequence. The error treatment sequence model (Figure 3) was developed based on data from the study and was used as the main unit of
analysis. The sequence consists of learner error that can lead to teacher feedback or topic continuation. There are two options after teacher feedback, either topic continuation with a teacher or student or learner uptake. Learner uptake being the student’s immediate response to the teacher’s feedback, which indicates students’ attention towards their erroneous utterance (Lyster & Ranta, 1997). If there is uptake, then the utterance is repaired or they can still need repair. If the utterance still needs repair, then additional corrective feedback can be provided. If no feedback is given, then there is topic continuation. If there is repair, then either topic continuation or some reinforcement is given by the teacher, after which there is topic continuation.
Figure 3. Lyster and Ranta’s (1997) Error Treatment Sequence.

Figure 3. Lyster and Ranta’s (1997) Error Treatment Sequence, used as the unit of analysis for coding of error and corrective feedback types, as well, as learner uptake.

Coding for error consisted of student turns that contained an error or not, excluding hesitations, false starters, and those without prominence. Errors were classified as phonological, lexical, grammatical, gender-based, L1, and, where more than one error occurred at the same time, as multiple. Only language learner errors were included, whereas errors in content were not.

Feedback coding consisted of six different types of categories: explicit correction, recasts, clarification requests, metalinguistic feedback, elicitation, and repetition. Explicit correction refers to feedback that was explicitly corrected and indicating that it was incorrect. Recasts involved feedback that was not explicit in nature but included different degrees of implicitness. Recasts also have been referred to as paraphrases in the COLT scheme (Spada & Fröhlich, 1995), repetition with change, and repetition with change and emphasis (Chaudron, 1977). Translations also were included as recasts, namely because they served the same function and were infrequent in nature. Clarification requests were defined according to Spada and Fröhlich’s definition that provide students an indication that their utterances were ill-formed and that follow-up as either repetition or reformulation is required. Clarification requests also can be due to inaccurate content; however, only clarification requests due to student errors were included. Clarification request may include the repetition of the error or include phrases (see Table 1 for examples of each feedback type).
Table 1

*Negotiation of Form Leading Towards Repair*

<table>
<thead>
<tr>
<th>Corrective Feedback Type</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarification Request</td>
<td>May include the repetition of the error or include specific phrases</td>
<td>“What did you mean in X?”</td>
</tr>
<tr>
<td>Metalinguistic feedback</td>
<td>Refers to non-explicit comments on the non-target like utterance of the learner</td>
<td>“Can you find your error?”</td>
</tr>
<tr>
<td>Elicitation</td>
<td>Contains three techniques used by teachers. First, contains a strategic pause either including the error or not. Second, teachers can use questions and, finally, the teacher can ask students to reformulate the utterance</td>
<td>“The dog can runs?” “The dog can…”. “How do we say X in English”</td>
</tr>
<tr>
<td>Repetition</td>
<td>Refers to repetition of the students non-target utterance with or without intonation of the error</td>
<td>“A children?”</td>
</tr>
</tbody>
</table>
Metalinguistic feedback, on the other hand, refers to non-explicit comments on the nontarget-like utterance of the learner, whereas elicitation contains three techniques used by teachers. First, elicitation can contain a strategic pause either including the error or not. Second, teachers can use questions and, finally, the teacher can ask students to reformulate the utterance. The final feedback type, repetition, refers to repetition of the student’s non-target utterance with or without intonation of the error.

Uptake, the final variable in the error treatment sequence, was defined, as “a student’s utterance that immediately follows the teacher’s feedback and that constitutes a reaction in some way to the teacher’s intention to draw attention to some aspect of the student’s initial utterance” (Lyster & Ranta, 1997, p. 49). As is seen in Figure 4, after the teacher provides feedback, there can be topic continuation by the teacher and/or student or it can lead to learner uptake. If learner uptake occurs, it can result in “needs-repair” or in “repair.” Repair can be seen as repetition, incorporation, self- or peer repair, and is defined as “the correct reformulation of an error as uttered in a single turn and not to the sequence of turns resulting in the correct reformulation; nor does it refer to self-initiated repair” (p. 49). For the purposes of Lyster and Ranta’s (1997) study, only those repair types were analyzed that occurred after prompting and did not include those that were self-corrected. The needs-repair category consisted of the following six types of utterances: acknowledgement, same error, different error, off target, hesitation, and partial error.
The final category in corrective discourse is reinforcement. If there is repair, then either topic continuation or reinforcement by the teacher is seen. Reinforcement refers to the teacher in some form, reinforcing the repair with acknowledgment, words of praise, and repetition. After reinforcement, there is topic continuation.

The results of Lyster and Ranta’s (1997) study showed that out of the six different feedback types by teachers, recasts were the most frequent, followed, respectively, by elicitation, clarification request, metalinguistic feedback, and explicit correction, with the least frequent being repetition. However, when Lyster and Ranta (1997) examined uptake as repair and needs repair, recasts have been shown as the least likely to lead to uptake, with explicit correction as the next least likely feedback type, as measured by frequency tabulations. The most likely type of feedback to lead to uptake is elicitation. The other types of feedback types leading to uptake were clarification requests, metalinguistic feedback, and repetition (Lyster & Ranta, 1997).

The authors further broke down the data by separating peer and self-repair from repetition and incorporation. The purpose for further analysis was to examine the relationship between feedback type leading to repair and the allowance for negotiation of form. The results showed that elicitation is responsible for almost one-half of the repairs, whereas recasts and explicit correction did not lead to repair. Based on the results of the study, the authors concluded that the four feedback types that allow for negotiation of form (i.e.,
elicitation, metalinguistic feedback, clarification requests, and repetition) are the feedback types that lead to student-generated repair.

Lyster and Ranta (1997) further contended that the level of learners’ proficiency is a key indicator of the success of negotiation of form as well as the different types of feedback used. However, if certain feedback types lead to more student-generated repair, we need to step back and ask whether learners even notice the feedback received or perceive it as such (Mackey et al., 2000).

Mackey et al. (2000) researched the area of noticing feedback and learner perception of interactional feedback. Interactional feedback in their study was defined as negotiation moves, which are confirmation checks, clarification requests, and repetition. Results from their study have shown that learners seldom perceived feedback of morphosyntactic errors (i.e., grammatical accuracy of structures) as such, but perceived it as various other types of feedback on error types. Furthermore, a post-hoc analysis on the type of feedback and error type tentatively found that recast was the most frequent type of feedback for morphosyntactic errors. However, with feedback on phonology (speech sounds) and lexical (word/vocabulary) errors, learners perceived them with more accuracy. Feedback types used with phonology and lexical errors were negotiation and combination types. The authors pointed out several reasons that morphosyntax was not perceived correctly. First, this might be due to the communicative nature of the interaction. They highlight Pica’s (1994) claim that negotiated interaction may be more beneficial for lexical errors, but less beneficial for morphosyntactic errors. Second, it might be that morphosyntax is
used with recast, and learners might not perceive it as such. An additional reason might be the cognitive overload of learners; it might not be feasible for learners to perceive all feedback types correctly. Finally, a limitation of this study, as pointed out by the authors, was the limited number of participants, as well as the language barrier limited English proficiency of the participants in providing correct feedback to the researchers on the stimulated recall procedures.

An additional study with adult ESL students that also speculated on the perception of recasts is Panova and Lyster’s (2003) research. These researchers examined the relationship between feedback types and learners’ responses. They used Lyster and Ranta’s (1997) model of error treatment and corrective discourse on teacher/student interaction. The database for their study included 25 beginning/early intermediate-level adult students, where 20 of the students shared French as a common L1. The teacher was a French/English bilingual with 13 years of experience, who was chosen based on her experience and willingness. The instructional approach of the classroom represented communicative language teaching with minimal linguistic forms, which was based on Spada and Fröhlich’s (1995) Communicative Orientation to Language Teaching (COLT) coding scheme. The COLT coding scheme revealed that students engaged in oral exchanges 90% of the time. Instruments for the study included the COLT scheme, observation of 18 hours of classroom time during Weeks 6-9 (in a 9-week course), researcher field notes, and audio recordings from the classroom. The database for the current study contained 10 hours of all student utterances. Coding was adapted from Lyster and Ranta’s (1997) study
based on the error treatment sequence: learner error, teacher feedback, and learner uptake (with repair or needs-repair). Analysis included counting all errors, coding errors as phonological, grammatical, or lexical. From the analysis, the teacher utilized seven types of feedback: those delineated by Lyster and Ranta (1997), plus translation. Lyster and Ranta included the few translations from their database within recast; however, because of the high number of L1 utterances in the current study, these were coded as a separate category. Uptake and repair also were coded as per Lyster and Ranta’s definitions. The database included 1,716 student turns and 1,641 teacher turns. Almost one-half of the student turns that contained errors (857 turns) received corrective feedback. Recasting and translation, respectively, were the two most frequent types of feedback (77% total). Learner uptake was evident in 47% (192 out of 412) of feedback moves where learner repair was coded 16%, and only 8% were repaired after teacher feedback. The highest rate of uptake and repair occurred with clarification requests, elicitation, and repetition, whereas the lowest rate occurred with recasts, translation, and explicit correction.

The findings in Panova and Lyster’s (2003) study are similar to those in nonexperimental studies (e.g., wherein recasts tend to be the most frequently used type of feedback). Panova and Lyster consider the student’s proficiency level as a factor in the types of feedback provided by the teacher. The authors also related their findings to Lin and Hedgcock’s (1996), Mackey and Philp’s (1998), and Netten’s (1991) conclusions that less proficient learners may not notice recasts, whereas more advanced learners regard recasts as negative
evidence. Explicit correction was minimal in Panova and Lyster’s study, whereas in Lyster and Ranta’s (1997) study, this type of feedback led to repair. The reason also might be attributed to proficiency level and the number of participants, which is an area in need of further research (Ellis, 1994). Another explanation might be the unique situation in which learning occurs in an ESL setting where class participants share a common L1, which may not be typical in an ESL classroom, where ESL learners are of different linguistic backgrounds. Participants were neither truly in an ESL setting, nor were they in a strict foreign language setting, but fostered a different setting in itself.

Lyster and Ranta (1997) have argued that in order to understand better the nature of corrective feedback, other variables and instructional contexts should be taken into account. Participant type (i.e., adult and children) and context type (i.e., immersion and ESL setting), as well as learner’s perception and noticing of feedback, were a few of the variables that were examined in the preceding literature review. The following review of research focuses on the age of the participants and the role of children either through their roles with other children, with native speakers, or non-native speakers.

*Feedback Studies with Children Interactions*

Building on research within implicit negative feedback and the role of negotiation and recast, Oliver (1995) examined the patterns of interaction between native-speaker and non-native speaker (NS-NNS) dyads. The basis of her study stems from research in first language acquisition, where it has been shown that children do use negative feedback (Brown & Hanlon, 1970 as cited in
However, the question is if native speakers modify their interactions and provide feedback with their NNS peers, what type of modifications do they utilize? The participants in this study were 96 child dyads from four primary schools between the ages of 8 and 13 years. Eight NS-NNS dyads were formed based on age, gender, and proficiency level. The non-native speakers came from different linguistic backgrounds. Their proficiency levels were assessed by the researcher and teacher using the Australian Second Language Proficiency Rating scale from Department of Immigration and Ethnic Affairs (Oliver, 1995). The native speakers were from the mainstream classrooms and were chosen based on their ability, status, and interactions with other second language learners.

The pairs were audio- and video-recorded twice (with one-week difference) while working on a one-way and two-way activity. The first 100 utterances for each pair and each task were used from the transcript for analysis, where all of the speech was included. The coding categories were based on the interactive nature of conversations and were determined as non-native speaker initial turn, native speaker response, and non-native speaker reaction. A second rater also coded one-quarter of the sample and a high inter-rater reliability rate was calculated. Nine interactional patterns were determined from the data. Each interaction was assigned into one of the categories. Within the NNS initial turn category, the initial turn was classified as incorrect, incomplete, and complete. The NS response category examined the preceding turn and determined if negative feedback was provided, in the form of recast or negotiation, or if their
was topic continuation. The final category, NNS reaction, examined if their feedback was incorporated or if there was topic continuation. The results were presented via frequencies, percentages, standard deviations, and the mean. These findings showed that within children dyads, when working on tasks, children interacted in multiple ways. The amount of negative feedback was very high, wherein 61% of errors were provided with feedback. In addition, 37% of NNS error turns did receive reactive implicit negative feedback. The author argued that this shows the existence that negative feedback is not rare or non-existent as other researchers (e.g., Grimshaw & Pinker, 1989) have contended. The results also showed that the type of feedback given was related to the error of the non-native speaker. In instances of single errors, recasts occurred more often and with multiple errors when the responses were negotiated. The results also showed that non-native speakers incorporated the feedback when they had the opportunity to do so, and provided evidence that feedback is used in interlanguage production.

Findings from Oliver’s (1995) study are important to the purpose of the current study. There is some existence of negative feedback within children’s interactions. More importantly, the processes of interaction may facilitate second language acquisition. Alongside the role of negative feedback in second language acquisition is the role of interlocutor types, namely the age and type of the interlocutor within task-based interaction. Mackey et al. (2003) examined this area with adults and children. Their database included 96 participants wherein one-half were adults and the other half were children between the ages of 8 and 10.
12 years. Within the age groups, the participants were randomly assigned and gender matched to native speaker (NS) and non-native speaker (NNS) dyads. This assignment yielded 12 native speaker–non-native dyads and 12 non-native speaker–non-native speaker dyads. Both children and adult non-native speakers came from a variety of L1 backgrounds and their proficiency level was assessed as being lower-intermediate. The proficiency level was based on the developmental sequence of morphosyntactic forms by Pienemann and Johnston (1987). The adults in the NNS-NNS dyads were from an intensive English language program at a university in the United States and the adult participants in the NS-NNS were in a similar program in Australia. The adult and children native speakers were from Australia, with the child native speakers being from the mainstream schools and the adults being at the same university as the non-native speakers.

Each dyad completed a one-way task, which required a drawing of a scene in the park, and the other participant had to describe it to her/his partner and then recreate it. The two-way task was a picture of a kitchen, where both dyad members collaborated to place the items in the correct place. Analysis of the transcripts included the first 100 utterances for each task for a total of 9,600 utterances. An utterance was defined according to Crookes and Rulon’s (1985) definition, consisting of one intonation contour, bounded by pauses, with a single semantic unit.

Categories coded from the data were defined as initial learner utterances, interlocutor responses to nontarget-like learner utterances, and learner
responses to feedback. Initial learner utterances were defined as target- and nontarget-like utterances. Only the nontarget-like utterances were used in the analyses. Next, all nontarget-like utterances were classified according to whether or not negative feedback (defined as recasts, confirmation checks, and clarification requests) were provided. If the topic continued without any negative feedback, then it was classified under ‘no feedback.’ Along the same category of interlocutor response to nontarget-like utterances, instances of ‘opportunities for modified output’ was examined. If negative feedback was provided and opportunity was given for the learner to modify their output, then the utterances were coded as ‘opportunity for modified output’; however, if the learner did not have an opportunity to modify their output, then it was coded as ‘no opportunity for modified output.’ Under the category of learner response to feedback, the original ungrammatical utterances that were coded as feedback with opportunity for modified output were re-examined to see if they had been corrected.

The results of the overall data set were reported using the means, standard deviations, and ranges of the age and type of interlocutor dyads, along with the interactional structure. The following results are based on NNS-NNS and NS-NNS dyads. A chi-square analysis of the frequency of responses to nontarget-like utterances with negative feedback revealed that the adult dyads provided statistically significantly more negative feedback than did the children dyads. Opportunities for learners to produce modified output were examined and showed that across all the dyad types opportunities were provided as calculated by the frequency tabulation. A chi-square analysis also revealed that in the adult
NNS dyads, more opportunities for modified output were offered than in the feedback provided by NS, and both child dyads produced statistically significantly more modified output than did the adult dyads.

The next set of results was based on adult versus child dyads. There were no statistically significant differences between adults and children in the amount of feedback, nor in the opportunities to use feedback in NS-NNS dyads. Results did show a statistically significant result with response to feedback in NNS-NNS dyads, where children produced statistically significantly more output than did adults. The overall results showed no statistically significant differences between NNS-NNS and NS-NNS dyads other than the native speakers providing more feedback than the non-native speakers. These findings differ from other studies, wherein NNS interacted more with other NNSs (e.g., Varonis & Gass, 1985). Mackey et al. (2003) suggested that the way they operationalized their data collection steps, in that grammaticality of the original utterance was taken into account, might have influenced the results of the study. Adult NNSs provided less feedback than did the NSs, and within the child dyads, there was statistically significantly more modified output within the non-native speaker dyads than within the NS-NNS dyad. The authors suggested that non-native speaking children seem to utilize more of the feedback when it is from another non-native speaker. As such, both types of dyad (NS-NNS and NNS-NNS) are statistically significant, as is the age of participant type (i.e., age was the significant factor among the NNS-NNS dyads, but not among the NS-NNS dyad). A possible
explanation of statistical significance for age is that children are great risk-takers and that they have fewer inhibitions in correcting others.

Summary of Feedback Studies

Thus, in summary, current research in feedback generally shows:

1. There is a positive relationship between interaction and development (Mackey, 1999).
2. Interaction can serve as an attention-getter to learners in the area in which they need to improve (Gass, 1997).
3. In SLA the role of noticing is contentious (Schachter, Rounds, Wright, & Smith, 1998; Truscott, 1998).
4. Findings have shown some evidence that noticing plays an important role in language acquisition (Mackey et al., 2000).
5. The age, status, and proficiency levels of the interlocutors play a role in the amount and type of interactional feedback (Mackey et al., 2003; Oliver, 1995).
6. The type of task used also is an additional factor affecting the amount of interaction that takes place (Doughty & Pica, 1986; Long, 1989).
7. Proficiency levels of learners might have an effect on instructional behaviors and the type of feedback provided by the teachers (Lyster & Ranta, 1997).
8. Different types of feedback can have an effect on the opportunity for modified output and the use of the feedback in SL development (Lyster & Ranta, 1997; Panova & Lyster, 2003).

9. Interactions with negative feedback occur within children dyads (Mackey et al., 2003; Oliver, 1995).

10. Level of proficiency and appropriate uses of feedback can be based on the learner’s readiness as well as her/his attention towards feedback types (Lyster & Ranta, 1997; Mackey et al., 2000).

The results noted here have not all been conclusively accepted and clearly more research is needed in this area. Moreover, as argued by Lyster and Ranta (1997), additional research is needed using different variables in various instructional contexts. Research has been conducted within immersion and ESL settings. However, there is a gap in the literature in corrective feedback within K-12 foreign language settings—more specifically, in the learner-learner interactions in these types of instructional settings.

*Computer-Mediated-Communication*

*Overview*

Theoretically, computer integration depends on the role of the computer (Levy, 1997). This can involve logical and physical considerations (Levy, 1997). If the computer’s role is that of a tutor, then the logical problem centers around what work should be completed at the computer and which ones should be completed in the classroom. There is a clear distinction of computer-related work
and non-computer related items. The tutor’s role is to evaluate, whereas the computer as a tool does not. The tutor’s role also is a temporary substitute for the teacher. It gives the learner an opportunity to undertake not only drill and practice, but also interactive and individualized activities.

The physical (Levy, 1997) consideration in the computer as a tutor role would be computers in one space (in one room/space) and a classroom without a computer. The advantages of this type of work are mostly for the teacher, where he/she has more time to focus on oral work while students are working at their computers, and tasks are easily divided among proficiency levels. In the tutor role, the framework of the tasks is given by the teacher.

If the computer serves as a tool, then the logical and physical considerations are difficult to extrapolate because of the supportive nature of the tool. The computer as a tool offers full integration and collaboration among students, computer(s), and teacher. As such, the computer is not the central focus of the activity but functions as a support to the teacher and learner.

Much of the research on second language acquisition also has begun to influence the area of computer-assisted language learning (CALL) and other technological environments (Chapelle, 2001). Doughty (1987) provided possible theoretical orientations to CALL, and Chun (1994) was one of the first to examine foreign language learning and CALL using discourse analysis within SLA. Other types of initial research conducted included (a) Nagata (1993), who compared learners who received feedback to those who only received minimal feedback; and (b) DeKeyser (1995) within computer-assisted SLA research, who examined
deductive versus implicit inductive learning. Another approach involved using the computer as a data-gatherer, as seen in Bland, Noblitt, Armington, and Gay (1990) and Hulstijin (1993), wherein computers were used to collect data to make inferences about interlanguage and processing strategies within classroom-based learning.

Currently, much of the CALL research has focused on the effects of using technology and how language learners interact with certain technologies to support language development (Chapelle, 2001; Egbert & Hanson-Smith, 1999; Lee, 1997; Warschauer, 1996, 1997). Even though there is some common ground on what learning should look like in technology-enhanced environments, research on the effectiveness of technology has shown mixed results, from statistically significant gains to nonstatistically significant gains (Milken Exchange, 1999). Similar results are relevant within the field of computer-assisted language learning research (Chapelle, 1998). The field has progressed in such a manner that we should not be concerned whether technology should be used or whether it is effective, but how technology should be used. Pusack and Otto (1997) argue that there are few areas of SLA theory and research that do not impact the development and use of multiple forms of media in foreign language teaching. However, they continue that seldom do theorists and methodologists reflect on the changes that multiple media have made to the way instruction is delivered. They further argue that the value of instruction, role of grammar instruction, and error correction, as well as the impact of accurate
speech development are all issues within SLA theory and are applicable within multiple forms of media in foreign language instruction.

In addition to using technology with various approaches and skills, technology also is suitable for various learner populations. Otto and Pusack (1996) concluded that computers and technologies promote student-centered instructional content. The use of technologies builds on critical thinking skills and is appropriate for individual students’ levels and needs.

*Criteria and Attributes for CALL Integration*

Researchers in the field of instructional technology (Reigluth, 1999; Wilson, 2000) and second language acquisition contend that when affordances and benefits are interconnected within the whole philosophy and the whole curriculum, then certain gains will be evident. In the SLA, ESL, and learning theory literature, research repeatedly points to eight conditions that when present in the language learning environment, in some form and in some amount, seem to support optimal classroom learning. Egbert and Hanson-Smith (1999) suggest that in an ideal environment eight principles of optimal learning also should be used in computer-assisted language learning. These principles are: (a) learners having the opportunity for interaction and negotiation of feedback; (b) learners are provided with appropriate time and feedback; (c) learners autonomy is supported; (d) learners possess ideal levels of stress/anxiety; (e) learners interact in the target language; (f) learners are guided through a mindful process; (g) learners work with authentic tasks; and (h) learners have opportunities for varied and target language output. As can be seen from the eight conditions for
language learning, certain factors (e.g., opportunities for feedback, learners’
autonomy, ideal levels of stress) are required to support effective and successful
language learning experiences (Egbert & Hanson-Smith, 1999; Krashen, 1982;
Long & Crookes, 1987; Pica, 1996). Research further shows that if CALL is
appropriately integrated into the curriculum, the language learning experience
can accomplish the following:

1. support experiential learning;
2. give students practice in a variety of modes;
3. provide effective feedback to learners;
4. enable pair and group work;
5. promote exploratory and global learning;
6. enhance student achievement;
7. provide access to authentic materials;
8. facilitate greater interaction;
9. individualize instruction;
10. provide multiple sources of information; and
11. motivate learners;

(Egbert & Hanson-Smith, 1999; Egbert et al., 2002; Warshauer & Healy, 1998).

However, for benefits to be evident, Pusack and Otto (1997)
conceptualized the following attributes of multiple forms of media (multimedia)
and technology integration:

1. The combination of multiple media;
2. control; and
3. interactivity.

Usage of multimedia (e.g., text, motion video, photo images, sound, graphics) controlled via computer, complements Pusack and Otto’s (1997) philosophy of language learning through its potential to enhance students’ learning experiences. Using multiple forms of media also is known as Technology-Enhanced-Language-Learning (TELL), a term used to incorporate not only CALL, but also all other usages of technology within language learning (Bush, 1997). While interacting with multiple forms of media (hereafter mentioned as multimedia), students can become more motivated to engage with more complex issues than with simple drill and skill. Students engage more by interacting with interactive programs and authentic material (Erben, 1999). Multimedia support contextualized learning to prepare students to apply what they have learned in an appropriate context (Reeves, 1992). However, the use of authentic material might lead to great frustration and little benefit if no additional support is provided (Pusack & Otto, 1997). Tasks need to be supported in accordance with students’ levels of proficiency (Chapelle, 2001; Omaggio-Hadley, 2001) and developmental levels, and build on experiences and knowledge that the students already possess. In other words, teachers need to build on students’ schema (Reeves, 1992). Technology-enhanced-language-learning, if appropriately chosen, can be a suitable platform for using authentic material, and build on language learning bridging students’ control over the program with other systems.

A further factor when utilizing technology within foreign/second language classrooms is the evaluation of tasks, curricula, and activities of computer-
assisted language learning (Chapelle, 2001). They should be assessed based on
the language learner’s potential, learner’s fit, meaning focus, authenticity, impact,
and practicality. This is also supported by task-based research with learner-
learner dyads within online synchronous environments, as found by Pellettieri
(2000). Therefore, when integrating technology into the foreign language
classroom, the attributes of technology need to be evaluated as well as the task.
When developing tasks (or curricular activities) the following questions should be
asked (Chapelle, 2001):

- **Learning Potential:** Do task conditions present sufficient opportunity for
  beneficial focus on form?
- **Learner Fit:** Is the difficulty level of the targeted linguistic forms appropriate?
- **Meaning focus:** Is the attention of learners directed primarily toward the
  meaning of language?
- **Authenticity:** Will learners be able to see the connection between the CALL
  task and tasks outside the world?
- **Impact:** Will learners learn more about the target language and about
  strategies for language learning through the use of the task?
- **Practicality:** Are there sufficient resources for the task to proceed?

Technology enhanced language learning gives control to teacher and
learner over the pace of materials. However, Pusack and Otto (1997) caution that
students may not choose the appropriate strategies for effective learning if it is
structured as an independent task. This is especially more true with low-ability
students and students with insufficient background experience, or if complex
tasks are presented without support. In other words, teachers need to specify clearly defined tasks while interacting with materials (Omaggio-Hadley, 2001; Pusack & Otto, 1997).

Another characteristic of technology is in its interactivity. When utilizing technology there are many factors to consider: navigation, user interface design, lesson architecture, task formats, and student inputs. Gay and Mazur (1989) provide the following recommendations in foreign language contexts:

I. Begin with an epistemological analysis of the knowledge;
   a. analyze the competencies,
   b. analyze underlying methodological theories, and
   c. conceptualize the structure, and then

II. Build a framework for interactions and activities that reflect this analysis.

Thus, such a framework leads to the optimal design of foreign language learning building on learners’ proficiency levels of both technology and the target language, as well as underpinning technology with theoretical understandings. As such, for the purposes of the current study, the current discussion on utilizing technology is essential because a task needs to be evaluated for appropriateness and fit (Chapelle, 2001), appropriately structured (Pusack & Otto, 1997), and use technology that is methodologically and theoretically based (Gay & Mazur, 1989), serving as a support to learners and/or teachers (Levy, 1997) that centers on learners’ competencies.
SLA and CMC Research

Research in SLA and CALL has focused on the effectiveness of technology and the learning outcomes and the interactions between the learner and the mode (Chun & Plass, 1996; Egbert et al., 2002; Lee, 1997; Warshauer, 1996, 1997). Liu, Moore, Graham, and Lee (2002) and LeLoup and Ponterio (2003) recently conducted an overview of research that has been undertaken in second language acquisition and technology. LeLoup and Ponterio (2003) examined the research from an interactionist and sociocultural perspective and argued that the research is troublesome because of the varied data collection methods, population differences, lack of research in the K-12 environment where it is most needed, no control of negative effects of the computer, and scant empirical research using either quantitative or qualitative techniques. Liu et al. (2002), in their review of 246 articles from 1990-2000, also argued that there are a lack of research studies that are theoretically grounded, and they also called for more research within a K-12 school setting.

CALL research also includes a specific type of communication entitled Computer-Mediated-Communication (CMC), which provides learners with an opportunity to interact with peers, instructors, native speakers, and non-native speakers using synchronous or asynchronous interactions. Synchronous interactions occur in real time, with interactants participating at the same time (Beauvois, 1992; Chun, 1994; Kelm, 1992). Examples of synchronous interactions include chat, video conferencing, audio conferencing, and telephone conversations. Asynchronous interactions, on the other hand, occur with a time
delay in which interactants do not have to exchange messages at the same time (Beauvois, 1992; Chun, 1994; Kelm, 1992). Examples of asynchronous include email, postal mail, discussion boards, listservs, pda, or cell phone text-messages.

Research in CMC indicates that when learners’ self-reported anxiety is lower (Beauvois, 1992; Kelm, 1992), there is greater student participation (Chun, 1994) and peer-to-peer interaction (Kern, 1995). Research also provides some evidence that there is greater cultural awareness with students using CALL and that there is a greater participation with online discourse than with regular face-to-face classroom interaction (Cubillos, 1998; Warschauer, 1997). Further, Gonglewski (1999) and Salaberry (1996) found that students who use online communication in their L2 are more aware of their errors. Warschauer (1996) also reported that students who participate in online discussions in their L2 have more coherent and cohesive discourse.

Is Synchronous Discourse Writing or Speaking?

Synchronous discourse provides the opportunity for quick feedback, and learners can participate in one-to-one conversations, one-to-many conversations, or many-to-many communication events. Synchronous discourse provides the opportunity for learners to plan and shape their language before sending it for viewing to their interlocutor and, as such, is different from the traditional oral classroom, where discourse happens more quickly, with greater likelihood of interruption and increased levels of anxiety (Beauvois, 1992; Kelm, 1992; Warschauer, 1997). Kern (1995) argues that during the synchronous local area
network (LAN) discussions, the students operated “largely within a framework that resembles that of oral communication, even though the medium is written” (p. 460). Tannen (1988 as cited in Kern, 1995) also states that just because the discourse is written does not mean that it should be considered a written genre. Thus, it has been argued that synchronous discussions are on a continuum between oral and written discourse or “speak-writing” (Erben, 1999, p. 239), with unique characteristics in a distinctive context, with a unique language. Also, skills gained through speak-writing can be facilitative towards further education. In addition, skills gained through the medium of synchronous chat also will be facilitative to language learners in their future studies and provide experience in fine-tuning their skills in electronic communications (Chapelle, 2001).

**Discourse, Affective Factors, and Language Production**

Research within synchronous chat has shown that learners use a wide range of discourse structures (Chun, 1994, Kelm, 1992; Kern, 1995; Sotillo, 2000). The quantity of production in synchronous chats are greater than in oral discussions, and synchronous chats have an impact on the quality of learner utterances (Chun, 1994; Kern, 1995; Sotillo, 2000; Warschauer, 1996). Researchers also report on the various discourse features of non-native speakers while participating in discussion through a synchronous program on local-area-networks (LAN). More specifically, Chun (1994) conducted one of the first studies examining discourse routines within synchronous environments. She investigated the efficacy of class discussions on a computer network in increasing interactive competence, as well as a way for learners to manage
various discourse routines in different contexts. The data were collected with first-year German students. The first semester included 14 students and the second semester involved 9 students—8 students of the original first-semester students and a new student. The software program used for synchronous discussions was InterChange, which has been used in other studies (Beauvois, 1992, 1994, 1997; Beauvois & Eledge, 1996; Bump, 1990; Kelm, 1992; Kern 1995; Sullivan & Pratt, 1996; Warschauer, 1996).

Students were given oral instructions with the written questions available on the discussion program. The questions asked were open-ended in nature concerning weekend activities, travel experiences, parental complaints about students, and so forth. The students held discussions among themselves, but were free to reply to any given class member. After the 14 sessions were completed, the transcripts were printed and analyzed for frequency and length of turns held by each student, syntactic and grammatical complexity, and discourse structures. All turns were classified as questions and answers, statements and imperatives, and discourse management. Under each category, the frequency data showed that (a) students replied and questioned teachers, as well as other students; (b) the learners took initiatives in answering other students; (c) students used requests for clarification when questions were not understood; and (d) learners provided feedback to other students by agreeing, apologizing, requesting clarification, and providing appropriate social expressions. The results showed that the quality of language production varied, with some learners producing simple sentences and others producing more complex sentences.
Also, participation was focused more on peer interaction rather than on teacher’s input.

In an observation of online discourses, Kelm (1992) investigated how synchronous discussions were used as communicative tools rather than tools for reading and writing. He found certain benefits, which included increased participation among group members, reduction of anxiety, and individualized identification of errors. Similar findings also were found with Beauvois’ (1992) observational study of synchronous discussions with university students participating in a foreign language course and Chun’s (1994) research on interactive competence.

Some negative findings outlined by Kelm (1992) include offensive comments shared by learners in their synchronous discussions (also known as flaming), in which comments were blunt, direct, and honest. Without the teacher’s presence, there was more usage of the first language by learners, and also more time constraints with completion of the activity. Each of these limitations is interesting in itself. The honesty and directness of students while engaging in non-native discourse can reflect the interlanguage competencies of pragmatic skills. Students are still in the process of learning and this type of medium can assist the instructors in providing more tailored feedback and also gaining further skills to obtain the necessary skills to communicate. The teacher’s roles in the three studies mentioned were that of non-dominance. The instructors did not heavily contribute to the discussions, but were present online during the discussion task. Kelm (1992) notes that students tended to overlook the
structures of the target language. However, in order to prevent this, the instructor printed out a record of their discourses and highlighted crucial areas for them optionally to correct—after which, Kelm (1992) reports that the learners were more aware of the target language. Interestingly, in all three studies, where the teacher was present, the nature of the activities represented open-ended questions that were geared towards discussion.

Pellettieri (2000) argues that the role and objective of the task is an important factor to consider with respect to the successfulness of online negotiation. More specifically, because of the open-ended nature of the tasks, it is believed that the teacher’s role is more critical during open-ended discussion type questions. However, tasks that are more form-focused and/or required tasks have limited amount of outcomes.

Of most interest was Kelm’s (1992) observation on the ability of viewing the learner’s interlanguage processes as they were occurring during discourse participation. Kelm observes, “that interlanguage [computer assisted classroom discussions] CACDs can aid in increased second language development” (p. 449). As such, the observable interlanguage processes include the increased capacity to read for main ideas, usage of a range of verb forms and grammatical structures that otherwise might have not been used, and increased quantity of language. Kelm also noted that students did not frequently correct each other, which reflects the communicative nature of computer-assisted synchronous discussions. However, the quantity of corrections shared between the learners could have been influenced by the presence of the instructor in the discussions.
and the fact that the instructor printed out the discussions and highlighted the learner errors for them to correct. This influence was not specifically mentioned in Kelm’s observation study, but could have inadvertently influenced the amount of error correction among students. Conversely, learners giving feedback and requesting for clarification, as well as negotiation for meaning were found to be evident in Chun’s (1994) study.

Similarly, Beauvois (1992) explored synchronous discussions between university students in an intermediate Portuguese class taught by Kelm. Based on the results, Beauvois (1992) also explored synchronous discussions with one high school student attending a French foreign language class. As a basis of evaluating CALL, she used Underwood’s (1984 as cited in Beauvois, 1992) criteria for evaluating CALL, which more precisely evaluates the communicative nature of CALL, aiming at:

- acquisition rather than learning;
- grammar being implicit and integrated within the lesson;
- facilitating students to generate original messages;
- not being a judge or evaluator of what the student does;
- not telling students that they are wrong;
- not being overly rewarding with various external symbology (lights, bells, whistles);
- not being cute;
- using only the L2;
- being flexible;
− being exploratory;
− being facilitative and feeling natural;
− being unique and not performing activities that can be undertaken with a textbook; and
− having fun.

Using these criteria, she examined transcripts from the Portuguese university class and found certain advantages in that there was little use of the L1, students were self-encouraged to problem solve and to ask each other questions. Also, in accordance with the above listed criteria, students were generating their own utterances without judgments or accusations. Because the discussion was on a synchronous program, grammar was integrated into the lesson (as per Underwood’s criteria) by the instructor. However, after some time, students were “talking” using the synchronous program, but were using the target language inconsistently.

To focus their attention on the grammatical structures and without placing judgment onto the learners, the instructor highlighted a printed copy with grammatical errors and distributed it to the learners to review and, optionally, to correct. This helped the learners to focus on accuracy, also leaving evidence of the discussion, as it was available to review, and having all students participate almost simultaneously, which would not be able to happen with oral classroom discussions.

Based on the several advantages found from the Portuguese classroom,
Beauvois (1992) used synchronous discussions with a pupil who was having serious difficulties in French. Even though the pupil did not pass the course at the end of the data collection semester, the author noted the following benefits that did occur with the pupil: attitudinal change, more talk with other students than with the teacher, and greater language production. The author suggested that such a medium could be appropriate for students who do not seem to flourish. The process itself might have had an influence, where the pupil was centered only on one activity and/or the reading (listening) and writing (speaking) were being self-paced in accordance with the learner’s ability and proficiency level. Finally, this study was one of the initial reports on the possible facilitative role of synchronous discussions towards negotiation of meaning, and their superfluous benefits for at-risk learners.

The amount of target language produced was examined by Kern (1995) with Level 2 French students at a university. He compared language production with oral class discussions versus online class discussions and found that learners produced a range of various clause types and verb forms. Advantages of synchronous discussions noted by Kern also were similar to those noted by Kelm (1992) and Beauvois (1992), where learners had a greater opportunity to talk and produced greater language production through complex structures and morphosyntactic features, with reduced anxiety and increased motivation. However, linguistic accuracy was not as evident and suggested that the electronic medium did not facilitate formal accuracy. Kern (1995), however, strongly pointed out the disadvantages by stating, “On the other hand, the use of
*InterChange* introduces changes that may be unsettling. Teacher control is compromised. The fast pace of the discussion can tax learners’ reading ability. Grammatical accuracy suffers and consequently learners read ‘defective’ French” (p. 470). However, until further research can show otherwise, these statements may be too early and without basis. The ‘defective’ language might occur because of the increased language production, where the ill-formed utterances are interlanguage processes in play (Kelm, 1992) or, as Pellettieri (2000) argues, the role of the task and the negotiation of meaning that occur also influence the amount, quality, and type of negotiation between learners.

**Summary of Language Development in Online Discussion Environments**

Results have shown an array of findings from no advantages in lexical and grammatical accuracy (Gonzalez-Bueno & Perez, 2000) to no significant differences in oral discussions (Sullivan & Pratt, 1996). Overall benefits show positive learner attitudes and motivation (Beauvois, 1994; Bradley & Lomicka, 2000; Lee, 1997), increased student participation including students who tend to be marginalized (Bump, 1990), increased learner collaboration (Gonzalez-Edfelt, 1990), increased language production (Beauvois, 1992; Gonzalez-Beuno & Perez, 2000, Johnston & Milne, 1995; Kelm, 1992; Kern, 1995) with a variety of discourse functions in synchronous mode (Chun, 1994; Sotillo, 2000), and syntactically more complex language output in asynchronous mode (Sotillo, 2000).
Corrective Feedback and CMC

Most of the studies noted have examined the interactions and benefits of CMC. However, relatively few investigations directly have examined corrective feedback within online synchronous environments. The few researchers who have investigated corrective feedback within synchronous environments have examined it from NS-NNS (Castañeda, 2005; Iwaskai & Oliver, 2003), NNS-NNS (Pellettieri, 2000), and between child-child interactions (Morris, 2005), each of which is significant for the purposes of this study. However, the current dissertation differs from previous research studies in that this study was: (a) situated with English as Foreign Language students, (b) conducted with learner-learner adolescent foreign language learners, and (c) analyzed using mixed methods methodology (see Figure 4).
Figure 4. Gap in the literature.

Key:


Participation Type: L-L=learner-learner  NS-L=native speaker-learner  T-L=teacher-learners  NNS=Non-native Speaker

Synchronous Tool: RTA=Remote Technical Assistance  IRC=Internet Relay Chat  BB=Blackboard  MSN=MSN Messenger
Castañeda (2005) conducted one of the most recent investigations on corrective feedback within both synchronous and asynchronous environments. Her investigation was on corrective feedback types provided by four instructors of Spanish as foreign language instructors to students at a large southeastern university. Interestingly, the results revealed that instructors provided a greater amount of corrective feedback within the asynchronous mode (i.e., bulletin board) than within the synchronous mode (i.e., chat). Approximately 15% of errors received corrective feedback. In fact, instructors tended most frequently to use explicit correction in the bulletin boards and recasts in the chat room, where one instructor did not attempt to provide any corrective feedback to her/his students.

Similarly, Iwasaki and Oliver (2003) examined whether negative feedback even exists within online communication, more specifically within NS/NNS dyads of Japanese as a foreign language. Their research examined the provision and use of negative feedback, that is, recasts and negotiation of meaning within chat environments. The study stems from research on negative feedback in face-to-face verbal interactions and current understandings of Internet applications within language learning. The authors argue that a paucity of research has been undertaken examining second/foreign languages with Internet applications—more specifically, the linguistic benefits of such usage. As such, they examined whether negative feedback exists with native speaker and non-native speaker dyads on the Internet.
The participants were gender-matched NNS with native speakers of Japanese. The NNS were 12 university students studying Japanese at an Australian university. This was an intact class; however, the participants were at two different proficiency levels. The proficiency level was based on length of time studying a foreign language. The NNS participants also had previous experience with Japanese word processors and reported that they were confident in using a Japanese word processor. The native speakers were young adults in Japan, and had no previous chat experiences.

The data were collected on three occasions one week apart. Before data collection began, a handout with instructions in their L1 was distributed asking the participants to use a Japanese script while chatting, not to use English or a dictionary and not to ask classmates or the researcher any questions during collection. They were also not to prepare any drafts while waiting for a response from their dyad members. Additionally, they were also asked to practice with the Internet application called Internet Relay Chat (IRC). IRC was chosen because it allows direct communication with native speakers. Also, it resembles face-to-face communication in that continuous messages are flowing back and forth and the time is not sufficient to allow learners to review their messages. The Secret Chat portion of IRC was chosen to allow only two people to exchange messages without any external intrusions to the conversation. Upon data collection, the participants were asked to ‘talk’ freely in all three sessions. Thus, the database included a total of 2,441 minutes exchanged between 12 dyad members across three separate intervals.
Data were categorized based on turns and were classified under the following procedure: (a) NNS initial turns, (b) NS response to non-target language, and (c) NNS reactions to turns. First, coding was determined if the NNS initial turns consisted of a target or non-target language utterance. If it included a non-target language (NTL) utterance with at least one form, it was coded as NTL. If the NNS provided a target language utterance, or if the NNS corrected themselves within the same turn or in the subsequent turn, then it was not coded as NTL. Next, the non-target language forms were determined for type of error, which ranged from ungrammatical use of verbs, adjectives, copulas, and participles, misuse of tense and/or word order, mismatch of subjects and predicate, and typographical errors.

Typographical errors were based on previous research on error classification, which includes typographical errors, wrong conversions of Chinese characters (Chinese characters are used in the Japanese language—Kanji), and errors in loan words and place names in foreign countries. Following classification of error type, all non-target language forms were examined for native speakers’ responses to the NTL form. Two options were evident from the data set: either the NTL was ignored by the NS, or negative feedback was provided as a recast or negotiation of meaning. A recast was defined as the NS modifying the ill-target utterance without changing the original meaning of the NNS turn. Negotiation of meaning included clarification requests or confirmation checks without the use of recasts. Finally, all turns that were provided with feedback then were classified for NNS reaction to the feedback, which was
classified as either (a) ignoring the negative feedback, (b) no opportunities were
given for response, or (c) response to negative feedback. If a response to
negative feedback was given, it was then examined to determine if the response
included incorporation of the recast or modifying the ill-utterance towards more
target language forms.

The results of the study showed that the percentage of negative feedback
and the NNS use of negative feedback provided were lower in frequency than for
other studies of face-to-face interactions. Also, the findings showed that negative
feedback was mostly a response to typographical, grammatical, lexical, and other
errors, respectively. Most feedback was ignored with typographical errors. The
percentage of negative feedback frequency and provision of negative feedback
according to error type ranged from 10 to 19.35. Frequencies on use of negative
feedback and error type were between 4 and 8, or 11.63% to 66.67%. The
results did show use of recasts and negotiation of meaning in subsequent turns.
This might have been due to the relatively low frequency levels and the number
of dyads. The authors also argued that the low negative feedback rate might be
due to students’ perceptions of the errors (i.e., typographical errors are not that
serious, whereas grammatical feedback more likely to be used and incorporated)
and type of media used (email and chat vs. face-to-face).

Another possible explanation might be the role of the task, where it was
structured as open-ended discussions. As previous research within oral
interactions has shown, the type of task and the number of outcomes have an
effect on the amount of negotiation and the type of production (Brock, Crookes, Day, & Long, 1986; Long, 1996; Pica et al., 1989).

The role of tasks within online chat environments has been quite maticiously examined by Pellettieri (2000). She examined, in contrast to Iwasaki and Oliver (2003), learner-learner explicit and implicit corrective feedback in synchronous environments and the development of grammatical competence with university students of Spanish-as-a-foreign language. She suggested that the role of task can affect the amount of negotiation, qualitative and quantitative output, and learner modification when tasks are not conversationally oriented, but goal oriented. The role of tasks has been examined within transitional face-to-face classroom research, where the type of task affects the type of production (Brock et al., 1986; Long, 1996; Pica et al., 1989). Accordingly, Pellettieri examined negotiation in terms of the role of tasks and its effect on grammatical development within online environments among 20 undergraduate students learning Spanish-as-a-foreign language. More specifically, she examined if negotiation of meaning occurs in task-based chatting, if negotiations facilitate mutual comprehensions, if the modified output produced by learners are both meaning and form focused, and if negotiated interaction provide opportunities for corrective feedback and incorporation of such feedback.

Five communicative tasks were created ranging from open conversations to more closed tasks, where two tasks had an additional subtask. Before data collection commenced, practice sessions were provided for learners to become more acquainted with the task. Also, before actual sessions began, tasks were
explained and instructions were given to use only the target language during task involvement.

The participants were paired into seven mixed dyads and three same-sex dyads, and were visually separated during the data collection sessions. The program used was ytalk (a UNIX based program; Yenne, 1990) and the NCSA Telnet (National Center for Supercomputing Applications, 2000) was used to capture the transcripts. The data analysis was descriptive (based on frequencies and percentages), and the data analysis was based on Gass and Varonis’s (1985) model of negotiation: triggers, signals, responses, and reaction to the responses. Based on the data, triggers were classified as lexical and semantic (i.e., vocabulary and its correct meaning), morphosyntactic (i.e., grammatical accuracy), and content triggers (i.e., entire content is not appropriate). Nontarget-like utterances within negotiation triggers were calculated and the ‘responses’ were categorized according to whether (a) a modification occurred; (b) type of modification was lexical, morphosyntactic, or semantic; and (c) the modification was target-like. Incorporations were analyzed as to whether corrective feedback was identified. Corrective feedback was classified as being either explicit or implicit. All types of corrective feedback were counted and determined for linguistic type and whether the utterances were target-like.

The results of the studies revealed that in all five tasks learners negotiated for meaning in the task-based interactions and that learners both provided and reciprocated corrective feedback. The five different tasks produced different types of negotiation. The two tasks that included a more focused activity
produced more morphosyntactic negotiations than did the other three tasks. Interestingly, out of all the five tasks, the second task, which had one possible outcome, generated the largest amounts of negotiation. The author suggested that this reflects research findings wherein one possible outcome generates the largest amount of negotiation (Pica, Kanagy & Falodun, 1993) and that the level of task difficulty, which was somewhat higher than the learners’ proficiency levels, affected the amount of negotiation. Other research findings have shown that decision-making tasks and jigsaw puzzles (Blake, 2000; Morris, 2005) created more negotiation; however, it should be noted that Smith (2003) did not find a statistically significant effect due to communication and task type.

The issue of negotiation and its facilitation towards successful communication among one another showed that learners worked laboriously towards mutual understanding. This was determined by the analysis of transcripts as well as task completion. All of the tasks were successfully completed, except for the second task. The accuracy rate for those dyads that completed the task was more than 60%. The one dyad that did not complete the task had only an accuracy rate of 50%, and the author suggested that their “lack of negotiation was surely detrimental to their performance” (Pellettieri, 2000; p. 77). Again, the level of task difficulty was another factor regarding task completion and accuracy rate.

Determining whether negotiations to modified output were produced that were both form focused and meaning focused revealed that in response to negotiations and corrective feedback, learners produced linguistic modifications
(i.e., lexical, syntactic, and semantic). Interestingly, 8 out of the 15 instances of errors were modified by the learners towards the target form, and there was only one instance where the modification was away from the target language. Similarly, when examining provisions of corrective feedback and incorporation of target language forms, the quality of feedback was quite high, wherein only 6 of the 31 instances produced non-target forms and only 2 then were incorporated into subsequent turns. The author noted that none of the implicit non-target feedback was incorporated into learners’ subsequent turns, suggesting that this might provide some evidence of the benefits of recasts within corrective feedback in NNS discourse, as argued by Long (1996). Also, incorporation of target-like forms has been discussed by Gass and Varonis (1985), who state that learners know which utterances are correct and incorrect. Pellettieri (2000) suggests that learners who can distinguish such utterances have a high level of metalinguistic awareness. Also, learners within chat environments have an added benefit in that the talk is visual, provides learners with more time to process both explicit and implicit feedback, and discriminates both target and non-target forms (Pellettieri, 2000). Pellettieri contended that her results contradict Kern’s (1995) contention that the quality of production in electronic environments is questionable, inasmuch as the language produced is interlanguage, which is no more flawed than the traditional face-to-face oral interactions (Kelm, 1992).

Additional studies on corrective feedback incorporation among learner-learner dyads contextualized within interaction, corrective feedback, CMC, and primary learners is provided by Morris’ (2005) research on fifth-grade Spanish
immersion students. The study was conducted with three sections of a fifth-grade computer laboratory class containing a total of 46 participants. The participants were randomly paired and completed a jigsaw puzzle with their partners using the Blackboard 5.0 chat tool (Blackboard Inc., n.d.). The task also instructed students to draft an essay after completing the jigsaw puzzle.

Data analysis consisted of coding for learner errors, learner corrective feedback, and response to errors and learners' repair. The errors were coded as syntactic errors, lexical errors, and unsolicited uses of L1. Frequencies were used to analyze the data. The author reported 135 errors, with 76 following corrective feedback. The majority of the corrective feedback moves were, respectively, lexical errors (58%) or syntactic errors (40%), with only 2% of unsolicited uses of L1. Of the corrective feedback moves, the majority was in a form of negotiation, with only 5% in recasts and none were evident within explicit correction. The highest rate of repair was for lexical errors (86%). Morris (2005) suggests that the rate of implicit feedback and the rate of repair is higher due to the fact that children are greater risk takers, as has already been highlighted in the present literature review (e.g., Mackey et al., 2003). The high rate of implicit feedback and repair also supports other studies documenting that negotiation is one of the most common forms of feedback (Lyster & Ranta, 1997; Mackey et al., 2003; Oliver, 1995, 2000, 2002). Morris however cautions that the results in his study might be due to other external factors such as learners' learning styles and strategies. However, he argues that more work and more rigorous experimental designs should be developed to study further this area of interest.
CALL, CMC and Corrective Feedback Summary

Successful technology integration into a classroom requires it to be situated within a sound theoretical framework, integrating methodological theories and examining the precise role of the technology. All these are precursors that have been shown to provide an optimal environment. However, tasks and activities also need to be evaluated based on their fit, potential, and level. Research findings have shown that when considering criteria for evaluation, synchronous discussion is a facilitative tool for learners who are at-risk to fail either because of their proficiency levels or because of developmental readiness. If appropriately designed CALL activities can assist the learner to visualize the talk process and have a more flexible and open environment that does not judge, evaluate, or tell them that they are wrong, but allows them to ask questions, discuss, and seek assistance from other peers or instructors. Morris (2005) has utilized the synchronous tool with immersion children and found encouraging results, where corrective feedback was provided and subsequently learners repaired their errors. Other benefits also have been noted, with learners reporting less anxiety and greater peer-to-peer participation, noticing their L2 errors, and using a variety of discourse forms and structures.

However, there is a paucity of research on technology integration in the K-12 foreign language program with at-risk second language learners. More research is needed to determine better pedagogical tasks and implications of using various tools and participation patterns with second language classrooms. Based on the researcher’s current review of literature, all learners included to
participate within research studies met the minimum proficiency level; however, determining if learners have any documented special needs were not requirements for exclusion or inclusion. It is, therefore, important when designing research studies to predetermine any special education needs of participants, which also may have an effect on the interaction pattern between dyad members.

**Foreign Languages and Special Needs**

It is a common belief in the field of education that for students with disabilities who are experiencing difficulty learning to read and write in their first language, literacy instruction should be in their L1 (Baca & Cervantes, 2004). This common notion is namely because the disability interferes with native language (Baca & Cervantes, 2004). Research shows that students, even with mild to severe disability levels, benefit from native language instruction in their L1 while immersed in an L2 environment (Bruck & Herbert, 1982; Cloud, 2002; de Valenzuela & Niccolai, 2004; Greenlee, 1981; Gutierrez-Clellen, 1999; Rondal, 2000).

Even with these initial findings, qualitative and quantitative research in early foreign language learning is not vast, especially with respect to the area of foreign language learning for special needs students, in which few articles have been published. Rosenbusch (1998) states “currently, very little information specific to the field is available to foreign language teachers of young students to help them in this inaesthe” (p. 59). In addition, specific teaching methods for foreign language students with special needs also are lacking, and those that exist are limited (DiFino & Lombardino, 2004; Sparks & Ganschow, 1991).
However, awareness is increasing, reports that are more descriptive are being collected, and initial questions are being raised. Kretschmer and Kretschmer (1998) contended that foreign language teachers need to know how the disability influences the language learning process. These authors classified disabilities with regard to foreign language learning into four broad categories (this classification considers only one primary disability and not more). These categories are (a) hearing and visual impairment, (b) severe motor control disabilities, (c) disturbances in neurological and biochemical development, and (d) severe socio-emotional problems. Students who are classified as hearing and visually impaired usually have sufficient cognitive abilities for learning languages, but lack communicative and language abilities because of the lack of exposure to the aural/visual environment and sensory disabilities. Severe motor control disabled children also have sufficient cognitive abilities but are physically and communicatively impaired in expressing the language. Children with disturbances in neurological and biochemical development usually are cognitively/neurologically impaired to various degrees and cannot acquire various aspects of the language such as the syntactic, pragmatic, and lexical forms of words. The last category, children with severe socio-emotional problems have, obstacles to their language learning mainly with the semantic forms of language. Kretschmer and Kretschmer’s (1998) classification includes important factors in that not all special needs learners have similar abilities, and that their disabilities may range from sufficient to less-sufficient cognitive abilities. As such, special need students may overcome obstacles by adapting educational material
to their strengths and not their limitations. For example, the ability to learn another language is possible when individualized solutions are developed and obstacles are overcome with support from the immediate social environment; however, these obstacles are even more difficult to overcome when they are due to severe language disorders, developmental delays, and severe barriers to learning (Kretschmer & Kretschmer, 1998). However, descriptive studies have indicated that special needs children of various degrees and types are capable of learning other languages. For example, Candelaria-Greene (1996) reported on children in Kenya diagnosed with mental retardation (MR) and their ability to acquire fluency in three or more languages. She had found that because the social discourse environment required individuals to communicate in various languages, depending on with whom they were communicating, children with MR also became fluent in the languages around them. This might hint at language learning that is not solely dependent on cognitive ability.

Gouin (1998), Holobow (1998), and Genesee (1987) reported on immersion programs that included special needs with learning-disabled children. Gouin stated that accommodations need to be determined based on individualized needs. These needs include adapting activities, alternative assessments, pair/group work, and individual attention. Holobow’s (1998) and Genesee’s (1987) reports also have shown that there are some benefits of language-disabled children in immersive environments: (a) they have been able to learn an additional foreign language slowly and gradually (Bruck, 1982), or (b) they have achieved below average results similar to their monolingual learning
disabled peers, but had the added benefit of a second language (Andrade, Kretschmer, & Kretschmer, 1989).

Wings (1996) also reported on children with special needs within various foreign language settings and provided an excellent example of a school district that values and encourages foreign language education. The author describes a Foreign Language in Elementary School (FLES) program in Putnam City School, Oklahoma City, which offers foreign language programs to 18 elementary schools from Grade K-12. Inclusion in these schools represents students with learning disabilities, physically impaired, and English language learners. Some of the characteristics of a school system adapting to a more diverse population have been opportunities for professional development, providing opportunities for teachers, special education, and foreign language educators to consult with one another. Important aspects in teaching early foreign language learners with special needs are individualization, inclusion, addressing students’ abilities on an individual basis, instruction, and program types (Genesee, 1987; Gouin, 1998; Holobow, 1998; Torres, 1996; Wing, 1996).

Overall, from the review noted above, it can be surmised that an individualized approach has been utilized. In addition, strong parental support also has been weaved into important factors of success. Yet, empirical data are limited in the area of early foreign language learning/teaching of special needs (Wing, 1996).

From current understandings of foreign language research with learning disabilities, early findings show that all educators and learners should believe
that foreign languages can be attained (Mabbott, 1994a); however, the degree of attainment will differ across a continuum. Furthermore, second language learning should begin and develop after the first language has been sufficiently acquired (Andrade et al., 1989); however, when exactly first language had been attained is not yet clearly defined.

There is some evidence that early foreign language learning can be a predictor of success in foreign language learning for learning disabled learners (Bruck, 1982) and that immersion settings have shown to be conducive to language learning for both non-learning disabled and learning disabled learners (Mabbott, 1994b). Within immersion settings, learning-disabled learners have acquired the necessary tools to utilize the foreign language; however, difficulties within their specific areas of disability still remain (Mabbott, 1994b). Furthermore, research also has shown that foreign language instruction should involve appropriate identification and pedagogical instruction that includes all modalities of visual, aural, oral, and inaesthetic learning (Ganschow & Myer, 1988; DiFino & Lombardino, 2004) and using material in classrooms that steadily progresses from familiar topics and contexts to unfamiliar topics and contexts (Andrade et al., 1989).

Sparks and Ganschow (1991, 1993) and Sparks (1995) have devoted much of their research toward high school and university at-risk students and students with learning disabilities. For example, Sparks, Ganschow, Pohlman, Skinner, and Artzer’s (1992) study of high school learning disabled students (mean age of 14 years) showed that by using direct instruction with the
Multisensory Structured Language (MSL) approach in both Spanish and English, students significantly improved in their native language phonology and vocabulary skills. The MSL approach involves using explicit and direct instruction of a foreign language—phonology, morphology, and grammar, linking visual, aural/oral, and kinaesthetic modes together (Moats & Farrell, 2005; Sparks, 1995). An additional method, following a bottom-up approach to foreign language uses a dynamic method that combines various learning styles beginning with sounds and progressing towards written discourse (Sparks, Ganschow, Kenneweg, & Miller, 1991). This approach also is known as the Orton-Gillingham (Sparks et al., 1991) approach and was investigated in high school students. These students showed benefits and increased improvements in phonology development (Sparks et al., 1991). The implication of the above noted research findings for existing foreign language programs. However, more research and information is needed involving various methods into early foreign language learning with young learners.

Research findings within bilingual special education (see Baca & Cervantes, 2004 for an overview) have not been included in the review of literature for the present study, even though disability types may be similar; however, learners’ needs are intrinsically different. Within foreign language settings, learners’ levels of academic success does not hinge on their ability to learn the language because all high-stake exams are in the learner’s L1; however, within bilingual special education, learners have to learn the second language to succeed academically, because all classes are held in the learners’
L2. If learners do not succeed then placement into special education classes are warranted. Therefore, foreign language studies have been reviewed, whereas learners with special needs, who are also English language learners have been excluded from the review. Furthermore, due to the scant amount of research in the field of foreign language and special needs, empirically based research studies need to investigate the areas of inclusive environments and foreign language learning/teaching (Rosenbusch, 1998); the effects of various program types and disability (Holobow, 1998); the relationship between the types of disability and foreign language learning; and additional research within primary schools providing immersion, dual language, or other foreign language programs.

Further questions need to be asked on the role of instructional contexts, using technology as a tool to facilitate learning and as a platform for expressing different learning styles and modalities of learning, as well as additional information on the nature of the interactions between students with special learning needs and those students who do not have special needs.

Most importantly, when examining regular classrooms it would be remiss not to include children with special needs in the study. With the inclusion and focus on individual learners within an integrated mainstream classroom, these factors can provide further information on (a) the dynamics of classroom interactions, (b) the process of learning in progress, and (c) alternative ways to facilitate the language learning experience of learners with various needs. This is much more prevalent with the onset of mainstreaming an increasing number of children into regular classrooms across all grade levels.
As such, the present study attempts to build on current knowledge, as well bridges three areas of interest and current needs: second language acquisition and teaching, computer-mediated communication, and special needs education. Following is a description of the context in which the research study was conducted. The historical influences and linguistic background of the Republic of Slovenia, the country of residence for the participants in the current study, follows.

**Historical Overview of the Context**

A historical overview and its linguistic and societal influences are briefly reviewed below. The summary and time below are based on the works of Prunk (1996), Eurydice (2001/2002), and Granda (n.d.). The present Republic of Slovenia has undergone a relatively turbulent history politically and socially. Separate regions of Slovenia have been under various rules dating back to the Celtic and Roman Empire in the fourth and third centuries B.C. Due to invasions, rebellions, and shifts in political goals, the Slovenes were ruled by various kingdoms. The Slovenes, in the 7th century A.D., were under King Samo’s tribal confederation, now known as the Czech Republic; in the 8th century under Frankish rule; then in the 10th century it was included in the medieval German Holy Roman Empire; and from the 14th century until the beginning of the 20th century Slovenia has been under the rule of the Habsburgs (Eurydice, 2001/2002).

During the 16th century of Turkish invasions and the Napoleonic war, the first Slovene books were published along with the first Slovene grammar book in
1584. Under Emperor Joseph II (1765-1790), compulsory and primary education began and so did national interest in Slovenia among its people. Towards the end of the 19th century, Slovenia became part of the Austro-Hungarian monarchy, and during the First World War, more specifically in October 1918, it was part of the independent state of Slovenes, Croats, and Serbs. However, this was short lived. Due to pressures from Serbs to unify into one state and occupation of territories by the Italians, the independent states were united in December of 1918 into the Kingdom of Serbs, Croats, and Slovenes. In 1929, it was renamed into the Kingdom of Yugoslavia. This too was short lived. During the time of World War II, the Kingdom was disintegrated and divided by Hungary, Italy, and Austria (Granda, n.d.; Prunk, 1996).

At the end of the Second World War, Slovenia joined five other republics and two autonomous regions and formed the Federal Republic of Yugoslavia, which was later renamed as the Socialist Federal Republic of Yugoslavia. In 1980, after the death of Josip Broz Tito, more demands were made by the Slovene people for independence. In 1991, the Slovenes adopted a new constitution and became an independent state. The Republic of Slovenia is now an independent republic with a parliamentary democracy (Eurydice, 2001/2002; Granda, n.d.). The official language of the republic as well as the language of instruction is Slovenian. In ethnic minority areas, namely the Italian and Hungarian minorities, the official languages also are Italian and Hungarian. In May 2004, Slovenia joined the European Union as a full member (Eurydice, 2001/2002; Granda, n.d.).
Education in Slovenia

Many changes were made after the dissolution of Yugoslavia to the political, economic, and social areas. One important change, and of interest in this review, is the educational system. A reform in the education system began in 1992 through research initiatives and discussion with experts in the field. The results of these initiatives were brought together in the Bela knjiga o vzgoji in izobraževanju v Republiki Sloveniji (Krek, 1995), with an English version published one year later entitled, White Paper on Education in the Republic of Slovenia (Krek, 1996). It provides a basis of organization for pre-university and pre-school education. The aim of the White Paper was to restructure the educational system and base it on human rights and law. The main objectives of the educational system is to

- include preschool children into appropriate programs;
- link the existing pre-school classes (also known as Kindergarten) with the eight-year elementary school, and change it into a compulsory nine-year elementary school. The reason outlined is to provide successful completion of school for all pupils;
- encourage pupils to inae in general, technical, and vocational secondary schools;
- provide equal opportunities for both genders;
- provide opportunities for adult education;
- make possible transferring between programs; and
- provide opportunities for children with special needs (Eurydice, 2001/2002).
Eurydice, the information network on education in Europe, provides a detailed outline of Slovenia’s educational system. In the report, Eurydice outlines the current framework governing education in Slovenia. The legislative laws governing education are: the Constitution, which gives a right to free education and provisions for minorities and Slovenes abroad; The White Paper on Education, which is the basis of Slovenia’s international standing in education; The Organization and Financing of Education Act; the Elementary School Act; the Gimnazijski Act, Vocational Educational and Training Act, and the Adult Education Act. The basis throughout the education system is the European Dimensions in Formal Education, which aims for an educational orientation, environmental protection, and healthy way of life. The European dimensions encompass the curriculum, role of the teacher, in-service teacher training, faculty and personnel, information and communication skills in foreign languages, international mobility, scholarship, youth actions, and international exchanges of volunteers (Eurydice, 2001/2002).

According to the Education Systems in Slovenia (Lakota & Gajgar, 2003), curricular reform followed in 1996 to 1999 consisting of 500 experts in the National Curriculum Council. Changes to the existing curricula were in the syllabi, goals and objectives, and timetables for the pre-school, elementary, and secondary schools, as well as in the curriculum for the linguistically and ethnically mixed areas. Currently, Slovenia is working with the European Union in joint activities and participating with the Youth, Leonardo da Vinci, and Socrates
programs to achieve international comparable curricula and towards increasing knowledge in the European Union (Lakota & Gajgar, 2003).

The education system (for a visual representation see Appendix A) consists of pre-school education, basic education, upper secondary education, post secondary vocational education, and higher education. Specialized educational programs within the educational programs include music and dance education, adult education, special needs education, and programs for linguistically and ethnic minority areas (Lakota & Gajgar, 2003). Preschool education, which includes pre-school programs at public or private institution, or at home, is optional and is subsidized if certain financial requirements are met (Eurydice, 2001/2002). Children attending pre-school programs are between the ages of one and six years. The approved curriculum is entitled, the Curriculum for Pre-school Institutions, and refers to six areas of activities: art, language, movement, mathematics, nature, and society (Lakota & Gajgar, 2003).

Basic education in Slovenia is free and has a required curriculum (Lakota & Gajgar, 2003). Basic, compulsory education, has gradually expanded since the 1999/2000 academic year from an eight-year to a nine-year program and has completed the process of transformation to a nine-year program in the 2003/2004 school year (Eurydice, 2005). At the age of six years, all children are required to enter first grade, unless exceptions have been made by the committee for classification of learners, where it is determined that the child is not yet developmentally ready for entrance into the first grade (Eurydice, 2005). The nine-year elementary school consists of three cycles. The first cycle is from
Grades 1 through 3, the second cycle is from Grades 4 through 6, and the third cycle is from Grades 7 through 9. Students complete their basic education by Grade 9. After Cycles 2 and 3, external assessments are given to provide feedback on achievement to the parents, teachers, school, and pupils (Eurydice, 2005). The final compulsory external assessment in Grade 9 must be successfully completed at least in two out of three courses in order to continue their education in high school. A Year 10 of elementary school also is available for students who fail or wish to retake the external assessment in the final cycle (Lakota & Gajgar, 2003).

Secondary education consists of secondary vocational and technical education and general secondary education (i.e., gimnazija). The latter is divided into short-term programs (one-and-a-half to two-and-a-half years), secondary vocational programs (three years), or the technical education programs (four years). The secondary vocational and technical education program prepares students for entering the job market (Lakota & Gajgar, 2003). Upon completion of the secondary vocational and technical programs, students are able to continue their education in a higher education or post-secondary vocational institute, but are required to complete successfully the external examination called ‘matura.’ Students who enroll after elementary school into a short-term vocational program are not able to continue their education at a post-secondary or a higher education institute.

The general secondary education program (gimnazija) is divided into two groups: general and professional programs. Both programs last for four years
and end with an external examination called the ‘matura.’ Upon successful completion of the external examination, students are able to enroll at the postsecondary vocational educational institutes or at higher education institutes (academic universities and professional-oriented studies).

In the year 2000, a new law was passed for the education of children with special needs. It is an important legislation, because it gives students with special needs the opportunity to attend school with their mainstream peers and learn in inclusive environments (Lakota & Gajgar, 2003). In addition, curriculum accommodations and modifications have been developed to assist students in achieving the standards set out for them.

Modifications to the curriculum also have been made for the linguistically and ethnically mixed minorities. The area of Prekmurje in Slovenia has both Slovene and Hungarian as the languages of instruction (Eurydice, 2005). In Slovenian Istria, the language of instruction is either Slovene or Italian. Where Slovene is the language of instruction, Italian must be learned as the second language. If Italian is the language of instruction then Slovene must be added as the second language (Eurydice, 2005). In addition to learning both languages, pupils also learn the history, culture, and heritage of both countries.

*Foreign languages and Technologies in Slovenia*

Special areas in education that have a priority in the nation’s education program are in health education, civic education, computer literacy, and the teaching and learning of foreign languages (Lakota & Gajgar, 2003). The latter two are of particular relevance to the purposes of this study. As a result of
prioritizing computer literacy as a nationwide significance, Slovene schools were modernized with information and communication technologies through the Computer Literacy Project enacted by the School Tolar Act (Lakota & Gajgar, 2003). The objectives of the project were to train students to use technology, thereby providing more quality education, implementing more appropriate organizational structures in schools, equipping schools with appropriate hardware, software, and facilitating research conducted by students and faculty with new technologies in education (Lakota & Gajgar, 2003). Slovene schools are now a part of the European School Network—UN-School net, which provides students with free access to the Internet. The Academic Research and Education Network of Slovenia (ARNES) provide support for students and teachers with Internet technologies.

Another priority set out by the Slovene educational system was the critical learning of foreign languages, as set forth in the White Papers:

The knowledge and skill to communicate, the capacity to understand and express oneself (in the broadest sense of the word) in the Slovene as well as foreign languages is of utmost importance. Developmental trends of education systems in the world show that, in addition to a thorough teaching of the Slovene language inseparably connected with its literature, it is necessary to begin teaching a first foreign language as soon as possible and soon afterwards (often already during the compulsory schooling) also a second and a third one. This is extremely important for
us, since we belong to a group of smaller European countries. (Krek, 1995, English translation 1996, p. 5)

Besides restructuring the educational system, foreign language education has gone through various changes as well. The eight-year elementary school system required 375 hours per school year of foreign language education in Grades 5 through 8 (Eurydice, 2001; Grosman et al., 1999). With the changes in the nine-year elementary education system, the number of required hours has increased to 656 hours per school year for one foreign language (Ministry of Education, Science and Sports, 1998) plus an additional 210 hours for a second foreign language (Eurydice, 2001; Grosman et al., 1998).

The existing foreign language curriculum for the eight-year and nine-year elementary school was revised and modified by the committee for the English language under the auspices of the National Curriculum Council (Eurydice, 2001; Grosman et al., 1999). According to the office of the Ministry of Education, Science and Sports (2004), the eight-year elementary school will be completely phased into a nine-year elementary school by the 2008-2009 school year. Hence, both curricula (for the eight- and nine-year elementary school) developed for the English language are valid. Foreign language education for the eight-year elementary school is required from Grades 5 through 8; however under the new nine-year elementary school, all pupils between Grades 4 and 9 will be required to take one foreign language and may add an additional foreign language from Grades 7 through 9 (Eurydice, 2001; Grosman et al., 1998).
The goal of the English foreign language curriculum, for both eight- and nine-year systems, is for the learners to be able to use English in various contexts. Knowledge about the language permeates the curriculum (Eurydice, 2001; Grosman et al., 1999). In other words, English is studied around themes and topics while using all macro skills and focusing on formal properties of the language whenever appropriate and necessary (Eurydice, 2001). In the eight-year curriculum, grammatical items are to be explained through lexical understandings, especially in the earlier grades, and not to teach explicitly grammatical functions as belonging under a specific category (e.g., I ran, past tense, verb ‘run’) (Grosman et al., 1999). Conversely, in the nine-year curriculum, the teaching of grammar should be implicit and have a facilitating role in the learning of languages, where students will learn the grammatical structure through its form and function (Grosman et al., 1998). The focus of both curricula is on the proficiency and development of the learner, based on their needs, interests, and learning styles, as well as in learning English through exposure, input, interaction, output, and feedback (Grosman et al., 1999). The L1 (i.e., Slovene) can be used at earlier stages when certain structures might be above the learner’s proficiency level; it can also be used to save teaching time and use L1 to clarify when needed and to undertake a quick check of L2 understanding (Eurydice, 2001; Grosman et al., 1999).

In the beginning grades, verbal communications are placed in the forefront with reading and writing being gradually introduced and in accordance with the learner’s proficiency level. Reading and writing gradually increases to an even
level with speaking and listening in the upper grades of elementary school (Eurydice, 2001). This is not to say that all macro skills are not being developed from the beginning. Speaking, listening, reading, and writing skills are all integrated through various differentiated activities. The curriculum is based on a communicative approach of learning foreign language, while still emphasizing the need to learn the properties of the language in order to be able to communicate successfully in writing and orally (Eurydice, 2001). Thus, not only are the verbal and nonverbal communicative goals of the foreign language curriculum outlined, so are the grammatical, sociocultural, and cognitive and affective aspects. The focus within each aspect is on learners, specifically on their levels of proficiency, while providing enough support to gain proficiency. Because of the dual focus on communicative learning while focusing on the form of the language, activities are typically based on (a) interactivity among peers, groups and teachers, (b) task-based activities, (c) usage of songs and chants, (d) integration of various intelligences (e.g., multiple intelligences), (e) Total Physical Response (inaesthetic activities), (f) project work, (g) usage of audio and visual realia, (h) independent research, and (i) integration of technology. Throughout the learning process the teacher’s role is that of a facilitator and not the sole keeper of knowledge (Eurydice, 2001; Grosman et al., 1998; Grosman et al., 1999). The dual function of the curriculum also is seen in assessment procedures. Both traditional and alternative assessments are highlighted. Suggestions from the curriculum for ongoing assessments are:

- teachers observing learners in various contexts;
− students submitting written work either as a formal test or as a written
  product;
− students completing portfolios that show their development in the target
  language;
− students carrying out self-evaluations; and
− teachers and students evaluating homework activities (Grosman et al., 1999).

In addition, English should be used across subjects within the school. The
curriculum also delineates collaboration among English language teachers and
subject matter teachers. The main purpose of the curriculum is to bring the
language across various contexts, for the foreign language to have purpose for
the learner, and for the learner to develop linguistic awareness of their first and
other languages and to develop their own identities.

Similarly, changes are being gradually implemented at the secondary
level, due to the restructuring of basic education (see Appendix B). English-as-a
foreign-language is one of the subject matter classes that is required in general
education (gimnazija). However, depending on the foreign language taken in
elementary school, English can be the first foreign language or the second
foreign language beginning in the general secondary school. If English were the
first language then the learner would have completed a total of eight years of
English upon graduation from the general secondary school. However, if English
is not the learner’s first foreign language in elementary school, then English can
be chosen as the second foreign language. If English were chosen as the second
foreign language, then the learner would have spent a total of four years studying
English. Obligatory final external examinations (i.e., *matura*) in English-as-a-foreign-language are identical for all students, those with four years and those with eight years of English. Under the new nine-year elementary school and the restructuring of general education, the total amount of time-spent learning English-as-a-first-foreign-language is 10 years. If English was chosen as an optional second foreign language in elementary school, then the total number of years spent learning English would be seven. If English was chosen as a second language at the onset of general education, then the total would be four years (Eurydice, 2001; Grosman et al., 1998).

The focus on abilities (linguistic, sociolinguistic, discourse, strategic, sociocultural, and independent learning) within the general secondary school curriculum is identical to that in the elementary school curriculum; however, the content is more rigorous. The goals of learning English-as-a-foreign-language through the general secondary education program are for students to be able to use English to assist with their studies and be able to read foreign professional literature for their studies in higher education, to be able to communicate with individuals either professionally or personally, and to pass the final external examination of English as a required or chosen subject (Eurydice, 2001; Grosman et al., 1998).

In addition, the focus on language teaching is similar to that in the elementary school, where the learner-centered approach with cooperative learning through various activities is encouraged. Learners also are required to
read various literature, as well as be able to be competent in English both productively and receptively in all four macro skills.

Chapter Summary

Research shows that children do participate in negotiation and provide feedback whether in the role of the native speaker (Oliver, 2000) or in the role of non-native speaker (Mackey et al., 2003). Furthermore, research within computer-mediated-communication has shown that learners communicate more online and are able to recognize more easily their errors in online environments than in traditional face-to-face classrooms. Additionally, communicative classrooms that are also focused on the form of the language have been shown to facilitate better second language development than do classrooms that are just communicative in nature (Savignon, 1972). However, detailed comparisons of language learners’ interactions in foreign language classrooms is a vital area to explore more in-depth, especially the type and amount of corrective feedback learners provide among each other in online synchronous environments. In addition, by examining classrooms that are both communicative and focus on form (e.g., explicit grammar instruction), additional insights can be generated on the facilitative role of corrective feedback within such instructional contexts.

Exploring the interactive environments of foreign language learning in Slovenia, additional evidence can be provided regarding the role of interaction from various linguistic groups as well as different instructional contexts. By studying learner-learner interactions, more information can be obtained in terms of: (a) how to conduct pair work within instructional programs that integrate technology, (b) the
facilitative role of a peer in the negotiation process, and (c) inclusion of learners with diverse needs to examine the dynamics of pair work. From a linguistic perspective, research on learner-learner interactions contributes to the current on-going research within negotiation and interaction and its role in the process of second language learning.
CHAPTER 3: METHODOLOGY

Overview

The overarching purpose of the present study was to examine corrective feedback within an online synchronous environment that occurs within adolescent leaner-learner dyads in foreign language classrooms. Equally important, this study was designed to include a few learner-learner dyads that have a documented special need. Corrective feedback was examined by using a commercially available (Ligon, Tannenbaum, & Richardson Rodgers, 1991) two-way task (see Appendix C) within an online synchronous environment. Similar two-way tasks have been discussed in research studies with: (a) corrective feedback in oral classroom discussions (Mackey et al., 2003), (b) feedback and task-based interaction (Mackey et al., 2003), and (c) chat environments (Morris, 2005; Pellettieri, 2000). Because the context of the study and research questions guided the research design underpinned by the pragmatist philosophy (Tashakkori & Teddie, 1998), qualitative data collection (i.e., text data) with quantitative and qualitative analysis techniques was utilized. Therefore, integrative research (i.e., mixed methods) was employed to answer the research questions. The specific aim of the present research was to: (a) investigate incidences of corrective feedback among EFL adolescent learners within an online synchronous environment, (b) examine the type of feedback, (c)
investigate the relationship between error and feedback type, and (d) explore the interactional conversation characteristics of interlocutors in dyads when one or more of the learners have a documented special need. The first three purposes were addressed via quantitative analysis of qualitative data using both inferential and descriptive statistics. The final purpose was addressed via qualitative conversation analysis. The database consisted of data from 208 participants, which were collected from: (a) a two-way information gap activity within a synchronous chat room, (b) a questionnaire, and (c) semi-structured interviews with 10 participants. The transcripts from the two-way information gap activity within the chat environment were used for quantitative and qualitative data analyses. The purpose of the interview and questionnaire was to add breadth and scope to the study. Namely, the questionnaire was utilized to acquire participants’ personal background information, language experiences, and computer experiences. Participants for the interview were collected from extreme cases, as well as, participants with special needs. The aim was to obtain additional insight into the learner’s perceptions, attitudes, usefulness, and perceived effectiveness of communicating in a foreign language using an online synchronous tool. The researcher also kept a journal to enter any observations, thoughts, and comments from participants or teachers to triangulate the collected data. The researcher reviewed the data analysis, interpretation, and final report with participants’ instructors for final feedback and comments. All personal information (i.e., first names, surnames, place of residence, name of school, telephone numbers, and personal addresses) were kept confidential. Names
were changed into identification numbers and were known only to the researcher of the present study.

Analyses of data occurred within a mixed methods framework, following the stages of data reduction, data display, data transformation, and data integration (Onwuegbuzie & Teddlie, 2003). This chapter reviews a description of the participants, research design, and data analyses procedures. This study concludes with the results in Chapter 4 and the summary, discussion, recommendations and implication in Chapter 5.

Participants for Quantitative Study

Participants for this study were students from Grades 7, 8, 10, and 11. At the time of the study, participants were attending English-Foreign-Language (EFL) classes in mainstream public schools in Slovenia, Europe. The ages of the participants ranged from 11 to 19 years. Members of the study comprised learners from approximately two to three sections of Grade 7, 8, 10, and 11 from various schools in Slovenia (see Table 2 for demographics on participants).
Table 2

Overview of Participants by Grade

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Number of Schools</th>
<th>Number of Sections</th>
<th>Students with Special Needs</th>
<th>Age (mean)</th>
<th>Female n (%)</th>
<th>Male n (%)</th>
<th>Total Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 7</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>12.36</td>
<td>30 46.88</td>
<td>34 53.13</td>
<td>64</td>
</tr>
<tr>
<td>Grade 8</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>14.38</td>
<td>25 78.13</td>
<td>7 21.88</td>
<td>32</td>
</tr>
<tr>
<td>Grade 10</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>16.92</td>
<td>35 72.92</td>
<td>13 27.08</td>
<td>48</td>
</tr>
<tr>
<td>Grade 11</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>17.97</td>
<td>44 68.8</td>
<td>20 31.3</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>5(^a)</td>
<td>19</td>
<td>3</td>
<td>15.41</td>
<td>134 64.42</td>
<td>74 35.58</td>
<td>208</td>
</tr>
</tbody>
</table>

\(^a\) Total of 5 different schools. Both seventh- and eighth- grade participants were from the same school, except for an additional section/school in Grade 8. Grade 10 and 11 participants were from the same two schools.
In Slovenia, there are 450 primary schools and 160 secondary schools (The National Education Institute of the Republic of Slovenia, 2004). Because mixed methods research also requires mixed methods sampling to increase internal validity/trustworthiness as well as generalizability/transferability (Kemper, Stringfield, & Teddlie, 2003) in the present study, the researcher selected participants using a multilevel approach, that is by contacting all schools, using homogenous case sampling followed by simple random sampling (see Figure 5 on sampling).
Figure 5. Selection of participants.

Figure 5. A visual representation on mixed-method sampling techniques.
First, all schools were contacted through the National Education Institute of the Republic of Slovenia and the EFL association for teachers entitled the International Association of Teaching English as a Foreign Language – Slovenia. The National Education Institute provides training, consultation, resource material, research information, placement assistance, parental information, teacher materials, and other school-related assistance for various types of schools. School types range from day care, kindergarten, elementary school, secondary education, university studies, vocational education, special needs education, adult learning, and e-learning for private and public schools in Slovenia (The National Education Institute of the Republic of Slovenia, 2004). The same request also was made by the researcher to the International Association of Teaching English as a Foreign Language – Slovenia to provide contact information of all English Foreign Language teachers to the researcher.

Upon the school principal’s and teachers’ agreement to participate in the study, a homogenous case sampling strategy was used. All schools had to meet the following criteria to be placed in the pool of applicable participants: (a) have an EFL program from Grade 5 onwards in the elementary schools; or be a high school wherein Grade 10 and Grade 11 learners are enrolled in a general secondary school (i.e., gimnazija); (b) have a computer laboratory or a classroom with a minimum of one computer per student participating in the study or be willing to divide the class so that one learner is using a computer at a time; (c) possess Internet connection on all computers; (d) be willing to download the MSN Messenger program on the computer or to use the web version; and (e)
have teachers and students who are willing to participate. Out of the 10 schools that volunteered to participate, 5 schools met the criteria above. A total of 238 students had agreed to participate in the study. However, transcripts were eliminated or deleted due to incomplete data, sole use of L1, technical glitches, electrical outages, students not correctly saving their chat sessions, or, as in one instance, lost data on a disk due to the floppy disk malfunction. Other participants’ transcripts were eliminated from the data analysis due to the following reasons: (a) odd number of students (i.e., not having a partner), (b) whole transcript being off task, (c) non-completion during the practice data sessions, and (d) absenteeism between the practice and actual sessions. One dyad was eliminated from the data analysis for using profanity in all turns. Consequently, out of 238 students enrolled to participate in the study, 208 students completed both the practice session and actual data collection period, met the guidelines for inclusion criteria, and, completed the background questionnaire. The number of participants per school and per grade is shown in Table 2. According to Stevens’ (2002) Power Sample Size Table, a sample size of 256 was needed to detect a moderate effect size (i.e., $d = 0.75$) with an acceptable statistical power of .8 at the .05 level of significance. However, because of the low number of schools and teachers willing to participate in the study or not meeting the inclusion criteria, only 238 participants were available. Furthermore, due to the above noted reasons another 34 students were excluded. Data collection in a subsequent school year was considered; however, because the students would be the same participants in the following school
year, this would have violated independence among the grades. For example, students in Grade 7 would be the same students in Grade 8 the following year and students in Grade 10 would be the same students in Grade 11 the following year. The fact that the sample size obtained was smaller than that suggested by the a priori power analysis is considered a limitation of this study.

Thus, the sampling frame consisted of 208 participants attending a mainstream public school selected in Spring 2005. Because the Slovene school system gradually is implementing a nine-year elementary school system, some students were in either Grade 8 of an eight-year elementary school or Grade 9 of a nine-year elementary school—in both situations the pupils were in their final grade of basic education. For the present study, Grade 8 students were combined with the Grade 9 students in the data set. In essence, they had spent a similar amount of time studying English as a foreign language and were of the same age group.

The participants were from intact classes and the researcher randomly assigned the participants into dyads as they entered the class. Of the 208 participants, 104 dyads were formed and of these matched pairs, 64.42% were female. Students’ mean age in Grade 7 was 12.36, in Grade 8 was 14.38, in Grade 10 was 16.92, and in Grade 11 was 17.97. All students were of a Caucasian background; however, their native language did slightly differ. Almost 94% of the students' native language was Slovene, 3% Serbian, 2.5% Serbo-Croatian, and 0.5% of the students reported both Croatian and German as their native language. However, the students’ respective teachers reported that none
of the students whose L1 was not Slovene were receiving any type of special instruction for the Slovene language and had been schooled in the Slovene language since first grade. The length of foreign language study also varied among grades. Length of English-as-a-foreign-language study encompassed extra-curricular English classes through private language schools and private lessons, as well as through formal instruction through the public schools. Grade 7 students reported an average length of 3.96, Grade 8 of 6.38, Grade 10 of 6.90, and Grade 11 of 8.36 years of EFL study.

Participants for Qualitative Study

Participants for the qualitative study were learners with special needs. Although, data from learners with special needs were included in the quantitative analysis, the data were extracted for further qualitative analysis, more specifically conversation analysis. The purpose for a follow-up qualitative analysis was to review interactional characteristics of conversation among learners with special needs in terms of their corrective feedback moves, error types, and responses to given prompts by their fellow dyad member. Participants with special needs were determined by the teacher’s official report of any documented special needs, that is, by an issuance of an individualized plan or an official report by the school. In addition, identification of students with special needs was determined by the school’s willingness to provide the information to the researcher or the parents’ and learner’s willingness to disclose such information. If students, parents, or teachers did not disclose any “special needs”, then the students were identified as students with non-special needs and were not included in the follow-up
qualitative data analysis. Out of the 208 participants, three students were documented with a special need and had an individualized education plan. The special needs consisted of a neurological disorder and epilepsy, attention deficit hyperactivity disorder (ADHD), and a learning disability. Of the three learners with special needs, two were males and one was a female in the seventh grade. The first language for all three learners was Slovene and all had had experience with using a computer and participating in chat rooms. One male reported using computers for six years, the other male for four years, and the female for three years. All reported having had previous experience with chat and being comfortable using the computer and participating in chat rooms. The length of English-as-a-foreign-language study was reported equally for all three students, that is, three years.

Participants for Interview

Stratified purposeful sampling (Patton, 2002) had been used to choose participants for the oral interview. Stratified purposeful sampling is defined as “illustrate[ing] characteristics of particular subgroups of interest; facilitate[ing] comparisons” (Patton, 2002, p. 244). Interview participants were chosen based on the number of turns, quantity of errors while completing the task relation to the rest of the class, and teacher’s report of work in class. More specifically, participants were chosen based on the extremities on each end of the continuum (i.e., high learners and low learners). In addition, learners with special needs were automatically included in the interview pool. As such, a total of 18 participants from the 208 participants were chosen for the final stage of data
collection, that is, to participate in a semi-structured interview with the researcher. However, out of the 18 chosen only 10 participants were included in the interview analysis. A total of five participants declined to participate in the interview. They did not provide a reason. In addition, data collected from an additional two participants were not audible and one additional participant responded with “I don’t know” on all questions and did not wish to comment.

Consequently, 10 students or 5 dyads were interviewed based on the following structure: (a) one high-high learner dyad (students who were above average in English—on the high end of the continuum), (b) one low-low learner dyad (students that are below average in English—the low end of the continuum), (c) one special need-special need learner dyad, (d) one high-special need learner dyad, and (e) one low-high learner dyad. The interviews were conducted at different times, depending on participants’ availability, but no more than two days after data completion.

**Ethical Considerations**

Prior to conducting this investigation, a proposal was presented to the University of South Florida’s Institutional Review Board (IRB) for approval of the pilot study (Appendix D) and the current investigation (see Appendix E). The researcher also completed the required continuing and core education requirements to conduct research (Appendix F & G). Data for the actual investigation were collected after all approvals were obtained.

Permission to enter the schools was secured from the National Education Institute of the Republic of Slovenia (Appendix H). Any information received from
the data or through the data collection processes that revealed the identity of the participants were changed and altered to protect their anonymity. All hard copy information pertaining to the disability of the participants in the study were kept in the researcher’s locked file cabinet and all electronic data were password-protected on the researcher's personal computer. All data collected electronically also were saved to a disk and locked in the researcher’s file cabinet. All names from the questionnaire were changed to identification numbers and any identifying information in the data set was changed. Only the researcher of the present study had access to personal information. Inter-raters had access to the data for data coding; however, all identifying information were changed beforehand.

Ethical issues such as the characteristics of the participants were taken into consideration. The informed consent form that had been created by the National Education Institute of the Republic of Slovenia and the researcher was distributed to the students and their parents (i.e., if underage) one to two weeks before data collection commenced. The participants were provided with the opportunity to withdraw at any stage from the study for any reason and without any penalty or consequence.

**Instruments**

**Questionnaire**

A questionnaire was distributed to the students in Grades 7, 8, 10, and 11 during the practice sessions. They were instructed to read the questionnaire and return it to the researcher the same day. The purpose of the questionnaire was to
determine demographic information of students: age, gender, native language, onset of learning English, motivation for learning English, previous use of computers, any known special needs, and whether the respondent was retained or skipped grade levels (see Appendix I). The questionnaire was modified from O'Relly (1999) and consisted of 22 items, sub-divided into seven sections. There were four general headings in the questionnaire: Demographics, Background, Foreign Language, and Technology. The Demographics section contained items that extracted information on gender, age, grade level, and school type. The Background section solicited information on native language, special needs, and whether participants repeated grade levels. The Foreign Language category elicited information on native language, foreign languages being learned, length of time studying English-as-a-foreign-language, levels of motivation for studying, and amount of exposure to the English language outside of their classrooms and countries. Technology, the final portion of the questionnaire, requested background information on the participants’ computer usage, reasons for using computers, level of comfort, and previous experiences with discussion boards and chat programs. All items either provided an option to check off yes/no answers, complete fill-in-the-blank items, write open-ended responses, or to respond to multiple-choice items.

*Qualitative Task Instrument*

Based on the literature review and current research findings, a similar two-way task (see Appendix C) within dyads (Mackey et al., 2003; Oliver, 2000) was used. The two-way information gap task was used within an online synchronous
environment using the chat tool MSN Messenger (Microsoft Corporation, 2005a). The two-way task used in the current study was similar in type to those used in other feedback studies conducted by Mackey (1999), Oliver (1995), and Silver (2000). The task also complements Chapelle’s (2001) criteria on tasks (i.e., learning potential, learner fit, meaning focus, authenticity, impact, and practicality).

The two-way task included 10 different pictures that, as a whole, depicted a story. Each pair of students received five different pictures from the set of 10. With their dyad member, the students were to place the pictures in the correct order according to the time sequence of events depicted on the pictures. As such, each member within a dyad was missing information that the other member of the dyad had. Thus, they were to communicate with one another to describe their pictures for the purpose of determining the sequence of events.

**Tool for Collection**

MSN Messenger was used as the text-based discussion (chat) tool for the two-way task to be implemented. MSN Messenger is available as a downloadable program (Microsoft Corporation, 2005a) or as an online web version (Microsoft Corporation, 2005b). MSN Messenger was chosen because of its practicality (i.e., it is available to all worldwide users without cost), ability to download or use the web version, and its usability on most operating systems and platforms (Microsoft Corporation, 2005a, 2005b). It also allows the users of the program to see when their online chat partner is typing, by seeing a message at the bottom of their screen that says, “user name is typing”; therefore, for the
most part, it can mirror conversations that take place in face-to-face discussions. Other programs, such as InterChange, IRC, ESL Webchat, and ytalk, which have been used in previous research studies (Beauvois, 1992, 1997; Iwasaki & Oliver, 2003; Kelm, 1992; Kern 1995; Negretti, 1999; Pellettieri, 2000) also were considered; however, because of the cost, risk of invasions of outside speakers, constraints on downloading UNIX based programs on school computers, and easibility of use (see for example, Baron, 2003; Orthmann, 2000), MSN Messenger were chosen as being best compatible with the design, accessibility, and participants in the study.

Qualitative Interview Instrument

Interviews were conducted with 10 participants who were chosen based on stratified purposeful sampling (Patton, 2002). The semi-structured interview was designed to provide participants the opportunity to add information and ideas, while allowing the researcher to facilitate the interview based on the participants responses. The pre-defined questions asked participants on their: (a) impressions, barriers, and advantages of completing the activity within the online synchronous environment, (b) reaction to their partner in terms of language level, attitude, and knowledge, and (c) perceptions on the usefulness of completing an activity online. The interviews were approximately 10 minutes per each interview participant. Interviews were audiotaped and verbatim transcripts were created. The researcher then translated the interview transcripts into English for further inter-rater analysis. A colleague, who is also an educator in the Slovenian public schools, reviewed the original Slovene and translated transcripts for accuracy.
The colleague received both the original transcription in the Slovene language and the translated version from the researcher. She verbally completed a reverse translation (i.e., in front of the researcher of this study verbally read the English translation, provided the Slovene equivalency and reviewed the original manuscript for accuracy). The review entailed a 100% consistency between the interview transcript and the translation. The researcher then reviewed the translations after one-week, which also entailed a 100% consistency score. Interview prompts and identified themes are further explored in Chapter 4.

**Pragmatist Procedure**

A sequential mixed methods study was used, in which both quantitative and qualitative approaches were utilized in the research process. In this design both the quantitative and qualitative phases had an equal status. That is, they represented aQUAN → QUAL sequential balanced design (Morse, 2003). This design typically is used when the quantitative and qualitative methods are conducted sequentially. The first phase is a quantitative sample followed by another qualitative sample. The qualitative data are used to provide explanation of the quantitative results (Morse, 2003). More specifically, because both quantitative and qualitative models were integrated to complement the research, thereby supports the pragmatist worldview of mixed methods (Maxcy, 2003; Tashakkori & Teddlie, 2003). For pragmatists, the research question drives the method used. In addition, the strengths of both quantitative and qualitative methods are being utilized within mixed methods as well as giving the researcher
the opportunity to use various ways in answering the questions at hand (Johnson & Onwueguzie, 2004).

The present study includes participants who were adolescent learners with or without special needs. Because of the participant characteristics and the research purposes, the pragmatist view of mixed methods is most suitable. Additionally, the pragmatist philosophy also was relevant for the study’s research design in that it allowed integration of other theoretical or conceptual frameworks. Such an allowance gave the researcher an opportunity to discover and explore findings as they emerged.

Within the sequential mixed methods design, data were collected and analyzed separately; however, the results of both types of data were compared by the researcher at the inference stage (Erzberger & Kelle, 2003; Miller, 2003; Onwueguzie & Teddlie, 2003; Tashakkori & Teddlie, 1998, 2003). Greene, Caracelli, and Graham (1989) lists five purposes of mixed methods studies: triangulation (seeking convergence of results), complementarity (seeking clarification of phenomena of results of one method with results from another), initiation (discovering paradoxes), development (one method informs the other), and expansion (adding breadth and scope to a study). The present’s study purpose of mixed methods was to develop an initial framework by examining: (a) participants with special needs qualitatively and the overall pattern of online corrective feedback quantitatively, and (b) extreme cases with follow-up interviews that this would add to the current body of knowledge of SLA, online communication, as well as provide possible new knowledge of second language
learners with or without special needs. Thus, the researcher hoped to integrate the findings by incorporating the strengths of both approaches. More specifically, the purpose of a mixed methods research design was complementarity (Greene et al., 1989). Finally, there is a paucity of research in second language acquisition and computer-mediated communication incorporating mixed method or mixed model methodologies. Thus, it was hoped that this study would add to the existing body of literature in the area of SLA.

Research Design

This research design utilized a mixed-methods or integrative research framework (Johnson & Onwuegbuzie, 2004) that includes mixed methods sampling strategies (Kemper et al., 2003) situated within a pragmatist philosophy.

For the present study, mixed methods was defined using Johnson and Onwuegbuzie’s (2004) definition, that mixed methods is “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language in a single study” (p. 17). Because the present study integrated both quantitative and qualitative practices, the pragmatist approach was considered most appropriate. Another factor in determining the appropriateness of designs within the pragmatist approach stemmed from the nature of the research questions. As in any study, the research questions are to be considered the most fundamental. Therefore, depending on the type of research questions guiding the study, appropriate
designs should be selected to complement them (Johnson & Onwuegbuzie, 2004). The overview of the research design processes is depicted in Figure 6.

The pragmatist philosophy allows the researcher to examine the data from both a logico-deductive and a heuristic-inductive approach. Thus, the research questions, situated within the theoretical framework of an Interactionist perspective (Long, 1996), guided the quantitative portion of the study. At the onset of data coding, the codebook (Appendix J) was used to code the data numerically. The data were coded based on errors and corrective feedback patterns from previous research studies (Castañeda, 2005; Doughty, 1994; Gass & Varonis, 1985; Iwasaki & Oliver, 2003; Lightbown & Spada, 1990; Long, 1991, 1996; Long et al., 1998; Lyster & Ranta, 1997; Mackey, 1999; Mackey & Oliver, 2002; Mackey et al., 2003; Morris, 2002, 2005; Oliver, 1995, 1998, 2000, 2002; Pellettieri, 2000; Pica et al., 1985; Schachter, 1991; Sotillo, 2000). After coding, all dyads that included students with special needs were further analyzed using conversation analysis. Conversation analysis (CA), the qualitative stage of the current study, also complemented the pragmatist philosophy, thereby allowing the researcher to approach the data without a priori assumptions or questions (Pomerantz & Fehr, 1997). Therefore, the researcher stepped outside the Interactionist theoretical framework (Long, 1996) and focused on the data itself. A general question was posed to guide the researcher; however, as per the assumptions of CA, it allowed the researcher to examine the data without predetermined theories and have the questions arise out of the data (Psathas, 1995).
Figure 6. Research design.

Figure 6. A visual representation of the research design for the current study incorporating both quantitative and qualitative techniques and methods.
Or, as stated by Pomerantz and Fehr (1997), “it rejects the use of investigator-stipulated theoretical and conceptual definitions of research questions” (p. 66).

Mixed-method designs can vary depending on data collection implementation, priority of research methodology, stage of data integration, and theoretical perspective (Creswell, Plano Clark, Guttmann, & Hanson, 2003). Based on the nature of the research questions, design, type of data, and guidelines for data collection implantation, this study used a balanced sequential mixed-method design (Creswell et al., 2003; Tashakkori & Teddlie, 1998). A sequential mixed method design is defined by “the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. Priority is typically given to the quantitative data, and the two methods are integrated during the interpretation phase of the study” (Creswell et al. 2003, p. 223). Creswell et al. note that the sequential explanatory designs “may be used to characterize individuals along certain traits of interest related to the research question.” (p. 227). However, Creswell et al. caution that “the main weakness of this design is the length of time involved in data collection to complete the two separate phases” (p. 227). However, Creswell et al. further note that by giving equal priority to both the quantitative and qualitative study may be more appropriate. Furthermore, to alleviate limitations within the qualitative study both data coding and data interpretation, inter- and intra-rater reliability was used to assess the consistency of the coding.
Finally, mixed methods had been chosen to add to the current field of second language acquisition by combining both methodologies, thereby adding to the development of theories. As Markee (1994) argues, the hermeneutic scientific traditions should not be deemed to be less serious, empirical, rigorous or even less informing, but that the “qualitative and quantitative studies are in reality complementary ways of creating new knowledge” (p. 91). As such, by integrating both methods, the researcher hoped that the integrative nature would not only add to the field of SLA, but would also promote further research using integrative methods.

*Data Collection Procedures*

After approvals to conduct the study were obtained from the schools, the researcher contacted the schools to discuss the research study, technical requirements, number of participants, and conduct a site visit. At this time, the researcher and teacher discussed requirements for participating in the study, the researcher requested the teacher to distribute the informed consents to be signed by participants and parents, and possible dates for data collection were scheduled. The researcher requested two dates. The first date involved completing the questionnaire and practice session. The second date was scheduled for the actual data collection session. The informed consent and permission form were taken home for parents and participants to review, complete, and sign, which were subsequently returned to the researcher. After returning the consent/permission forms and completing the questionnaire, the students partook in the mandatory practice session. The second date set aside
Figure 7. Procedures of the study.

I. IRB Approvals

II. Pilot Study

III. Selection of Participants & Consent Forms

IV. Practice Session & Data Collection (Questionnaire and Task)

V. Stratified Purposeful Interviews with Selected Participants

VI. Data Analysis

VII. Interpretation & Final Report

Procedures
was for the actual session that took place no more than two weeks after the practice session (see Figure 7 for data collection procedures).

Before data collection would begin, the researcher created userids and passwords for the students to sign-on into MSN Messenger. The userids were unique to each participant and consisted of alphanumeric symbols. The password was generic. In addition, before the practice and data collection sessions began, the researcher had already entered the appropriate userids and passwords onto the computer terminals. The purpose of entering the identification numbers was threefold: (a) to ascertain if registration of the identification numbers were successfully completed, (b) to verify the validity of the passwords and userids, and (c) to match dyads online using predetermined identification numbers. Based on the experiences of the pilot study that was conducted a year prior to the current study, these procedures allowed for more time to be allocated towards the task and for dyads to be already paired up via identification numbers. Students were randomly assigned their identification numbers at the onset of collection and based on those identification numbers dyads were created (i.e., the student who received an identification number of 1a was automatically paired with the student that received an identification number of 1b and so forth). The transcripts of the data received from MSN Messenger included all entries by the learners. All student names or other identifiable information were deleted by the researcher and replaced by the aforementioned identification numbers. A sample of a chat screen is available in Figure 8.
**Figure 8.** Screen-shot chat screen.

![Chat Screen](image)

Chat area

Typing Area

**Figure 8.** Screen shot of MSN Messenger’s chat function. The typing area is where messages are created and sent into the center area, which is common to both members in the dyad.
Upon entering the computer laboratory, the students were given identification numbers at random and instructed by the researcher where to sit, in order to prevent dyad members from sitting too close to one another. The dyads were mainly matched by gender; however, due to (a) odd number of male/female pairs in class sections, (b) eliminating certain dyad members and restructuring dyads due to technology problems (e.g., computer freezing, Internet not working properly), or (c) less frequently, unwillingness to work with certain individuals, some dyad members were grouped into mixed gender dyads. Consequently, of the 104 total dyads, there were 56 female-female dyads, 23 female-male dyads, and 25 male-male dyads (for more information see Table 3).
<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Female – Female</th>
<th>Female – Male</th>
<th>Male – Male</th>
<th>Total Dyads</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Grade 7</td>
<td>9</td>
<td>16.07</td>
<td>12</td>
<td>52.17</td>
</tr>
<tr>
<td>Grade 8</td>
<td>11</td>
<td>19.64</td>
<td>3</td>
<td>13.04</td>
</tr>
<tr>
<td>Grade 10</td>
<td>17</td>
<td>30.36</td>
<td>2</td>
<td>08.70</td>
</tr>
<tr>
<td>Grade 11</td>
<td>19</td>
<td>33.93</td>
<td>6</td>
<td>26.09</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>53.85</td>
<td>23</td>
<td>22.12</td>
</tr>
</tbody>
</table>
For both the practice and actual data sessions, the students were given written and verbal instructions in Slovene and English (see Appendix K and L), similar to instructions given in previous research studies (Iwasaki & Oliver, 2003; Pellettieri, 2000), and asked if they had any additional questions before proceeding. The instructions consisted of using only English during the activity, to be as accurate as possible, not asking their peers or teachers oral questions, not preparing drafts of answers on a piece of paper or on any other platform, and focusing on the task. After all questions had been answered, two similar two-way communicative tasks (see Appendix C) were distributed to the students. One version was distributed during the practice session and the second version during the actual data session.

Both the researcher and the teacher were present for both the practice and actual sessions, except on two occasions when one teacher returned towards the end of the period and another had to leave to attend to another class. From the pilot study analysis that was conducted earlier in the school year, the teacher’s presence was seen as beneficial, inasmuch as students were more focused on the task instead of being distracted by the researcher’s presence. In addition, the pilot study showed that approximately 25-30 minutes of the 45 minutes allotted were for actual task work. The actual data session did reflect the experiences of the pilot data, notwithstanding external variations, such as technology breakdowns and student reluctance in completing the task.

Five minutes before the end of class, the students were asked to finish and to move away from the keyboard. They were instructed to wait for the
researcher to approach their computers to save the data on a floppy disk and hard drive. The chat archives were saved in a Word document (.doc) format in order to preserve the emoticons (i.e., text format did not preserve emoticons).

The final piece of data collection included informal interviews with 10 participants after the two-way task had been completed. The interview included: (a) three learners with special needs, (b) one dyad member who chatted with one of the learner’s with special needs, and (c) three low learners and three high learners (i.e., extreme cases). These dyads were chosen based on number of turns, words, error level, corrective feedback moves, and class standing. The purpose of the semi-structured interview was to solicit additional data to include in the discussion of the participants’ perceptions of the effectiveness and usefulness of the conferencing tool in English language learning. Data collected from the interview were transcribed into Microsoft Word. A colleague, who also was a teacher of an elementary school, was asked to review the interview and the transcriptions for accuracy. The researcher then translated the interview from Slovene into the English language.

After all data collection had been completed, the data from the two-way task were imported into Microsoft Excel for coding. The Excel workbook included formulas automatically to differentiate and sum the number of corrective feedback types, error types, and repair. Furthermore, each participant’s turns were tabulated in Microsoft Excel for number of turns, words, error level, corrective feedback moves and class standing in order to determine extreme
cases for the interview. The interviews were transcribed into Microsoft Word, where themes were extracted by both the researcher and inter-raters.

Next, all completed questionnaires were inputted into Survey Gold (Golden Hills Software, Inc., 2005/2006), a downloadable Internet software program that specializes in survey collection and analyses. Detailed information on the coding processes, units of analysis, and the analyses of data collected via online chats are presented below under the Data Analysis Procedures section.

Unit of Analysis

The unit of analysis from the chat transcripts represents a modified version of Lyster and Ranta’s (1997) error treatment sequence (Figure 9). Only the first two units were examined: peer error and learner corrective feedback. Peer response (i.e., uptake) will be further examined in a subsequent study.
Figure 9. Present error treatment sequence.

- Learner Corrective Feedback
  - Explicit correction
  - Recasts
  - Clarification requests
  - Metalinguistic feedback
  - Elicitation
  - Repetition
  - Emergent

- Peer Response (Uptake)
  - Needs Repair
    - acknowledge
    - different error
    - same error
    - hesitation
    - off target
    - partial repair
  - Repair
    - repetition
    - incorporation
    - self-repair
  - Emergent

- Peer Error
  - Grammatical
  - Lexical
  - Orthographic
  - Typographical
  - L1
  - Multiple
  - Emergent

- Topic Continuation
  - Peer
  - Learner
Analyses were conducted based on turns (see Figure 10). For the purpose of the study, a turn is defined as when a message is composed and sent into the chat room. First, initial peer errors containing at least one form were tallied and calculated. Next, the type of error was determined based on pre-existent categories (Lyster & Ranta, 1997; Morris, 2005; Oliver, 1995) and one category was left open for any emergent categories that might not fall under the six predetermined categories. Peer responses to the non-target language form were rated as ignored or provided with corrective feedback. If provided, all types of corrective feedback were identified and classified according to the corrective feedback codebook (Appendix J) then tallied using the coding sheet (Appendix M), and then evaluated. Total instances of corrective feedback were tallied and evaluated for quality (target-like vs. nontarget like). Finally, after feedback was provided, the peer’s response to the feedback was examined as (a) ignored, (b) no opportunity given to respond, or (c) response to peer’s feedback. If the feedback was ignored or no opportunity was provided, then the response was coded as topic continuation as per the unit of analysis model. If feedback response was acknowledged then the peer’s feedback was classified, as either incorporation (repair), needs repair, or an emergent category.
Figure 10. Coding process.
For ease of coding for both the rater and inter-raters, the Corrective Feedback Coding form (Appendix M) was entered into Microsoft Excel. Additionally, formulas were included automatically to sum totals of each column and tally different types of errors and corrective feedback types within each worksheet for each grade level separately. Finally, a separate worksheet was created to calculate the sum of all totals (i.e., error and corrective feedback types) across all grade levels. The results of these frequency counts were used for descriptive accounts and to assist in the interpretations of the results.

For further inferential statistics (chi-squares, Fisher’s exact tests, and Multiple analysis of variance [MANOVA] with discriminant analysis), all instances of corrective feedback moves or error moves within one dyad were collapsed into a count of one incidence. This was necessary for the sole purpose of not violating the assumption of independence (Glass & Hopkins, 1996; Onwuegbuzie & Daniel, 2003; Stevens, 2002). If frequency counts of each corrective feedback or error move within one dyad had been used for the analysis, the independence assumption would have been violated because one type of corrective feedback or error type provided by a member dyad might influence the corrective feedback and/or error types provided by the peer dyad. Some studies in this area, that involve the use of inferential statistics (e.g., Blake, 2000; Mackey et al., 2003; Morris, 2005), are flawed by the fact that the independence violation is violated by using an incorrect unit of analysis. Therefore, the frequencies were collapsed either to zero or one instance of corrective feedback within each dyad, or for error counts a zero or one instance was calculated within each dyad. These
frequencies within each grade level then were used for inferential statistics and analysis.

Data Analysis Procedures

Data collected for analysis consisted of transcripts created from the online tasks, which were originally saved in a Word document format and then imported into Microsoft Excel for coding. Each question was analyzed separately. As the research objectives reflect, findings on learner uptake will not be presented. Learner uptake is an important variable that will be reported in follow-up studies; however, data on learner uptake were coded simultaneously.

Onwuegbuzie and Teddlie’s (2003) framework for analyzing data in mixed methods studies was used as a guide for the analysis of data in the current study (see Figure 11). Onwuegbuzie and Teddlie’s data analysis framework includes data reduction (Stage 1), which involves reviewing, organizing, and reducing data that were obtained from the data collection phase. Next is data display (Stage 2), which involves visual representing the data, via tables, graphs, diagrams, lists, and so forth. Then, data transformation (Stage 3) might follow, which includes quantitizing (i.e., converting text data into numerical forms) or qualitizing (i.e., converting numerical data into qualitative codes) the data. The subsequent three stages (i.e., data correlation, consolidation, and comparison) occur depending on the types of data collected. When both quantitative and qualitative data are collected for each research participant, then data correlation (Stage 4) occurs. However, if a new set of variables or consolidation of variables from two data types are the focus of the study, then data consolidation (Stage 5) occurs.
Depending on the research focus, data correlation or data consolidation need not occur. Another option might be data comparison (Stage 6). Data comparison is used when the intent is to compare different data sources (Onwuegbuzie & Teddlie, 2003). The last stage in the data analysis framework is data integration (Stage 7). Data integration may be the last stage following data correlation, data consolidation, or data comparison or it might follow directly after data transformation. Within this last stage of data analysis, data integration occurs when “all data are integrated into a coherent whole or two separate sets of coherent holes (quantitative or qualitative)” (Onwuegbuzie & Teddlie, 2003, p. 377).

The present study used the following mixed method stages of data analysis of the above-described framework (see Figure 11 for a visual representation):

Stage 1: Data Reduction
Stage 2: Data Display
Stage 3: Data Transformation
Stage 6: Data Comparison
Stage 7: Data Integration

The data transformation (Stage 3), data display (Stage 2) and data reduction (Stage 1) were reversed, respectively, while data correlation (Stage 4) and data consolidation (Stage 5) were not used for this study, namely because these stages did not fit within the framework of the current study. The purpose of the current study was complementarity (Greene et al., 1989). As such, data
correlation (Stage 4) was eliminated by the researcher, because this stage’s main focus was to triangulate (Greene et al., 1989). Additionally, the qualitative data in this study did not include all of the participants of the quantitative data, which is recommended for data correlation (Onwuegbuzie & Teddlie, 2003). Furthermore, data consolidation (Stage 5) entails consolidating data to create new variables (Onwuegbuzie & Teddlie). In lieu of Stages 4 and 5, the data comparison stage (Stage 6) was included, where data are compared for triangulation, complementarity, or initiation purposes (Greene et al., 1989). Johnson and Onwuegbuzie (2004) and Onwuegbuzie and Teddlie (2003) contend that even though the stages are sequential they are not linear and the analyst can skip or chose only the most applicable stages.

The first step of the mixed methods data analysis process entailed data transformation (Stage 3). This involved organizing the data collected as a result of synchronous chat into Microsoft Excel using the codebook format (Appendix J), and transcribing the interviews. Quantitizing data was based on the coding process (Figure 10). The data from synchronous chat went through an initial review of all turns, while organizing and copying data into Microsoft Excel. Those dyads that chatted solely in the L1 (i.e., Slovene) or did not participate in the practice session were eliminated from the study. Consequently, five dyads in total were eliminated. In addition, during this stage, the synchronous chat data were coded using the codebook and code form (Appendix M). Data transformation included quantitizing synchronous data. Statistical procedures and analyses were used for the first three questions.
Within the same stage, that is the data transformation stage, conversation analysis (Markee, 2000) was used to analyze the final research question. Conversation analysis (see Qualitative Analysis section of this chapter for more information) is defined as:

- a form of analysis of conversation data (ACD) that accounts for sequential structure of talk-in-interaction in terms of interlocutors’ real-time orientations to the preferential practices that underlie, for participants and consequently also for analysts, the conversational behaviors of turn-taking and repair in different speech exchange systems. (Markee, 2000, p. 25)

The next stage in the data analysis framework included data display (Stage 2). The quantitized data were displayed in the form of tables for each separate question; whereas the qualitative data were presented in rubric form. Quantitative analysis was based on coding for corrective feedback and error types. Qualitative analysis included conversation analysis of the three special need learners and their dyad members, as well as, interviews with seven additional participants. The interview data were analyzed using Miles and Huberman’s (1994) matrix building. Data from the interview did not address any specific research questions. Its purpose was to add to the data interpretation phase of the data analysis.

Within this phase, data were submitted three times to two additional interraters. The first time was at the initial stage of coding using the unit of analysis of the chat transcripts, as well as, IRF patterns and adjacency pair classification for conversation analysis, and theme identification for interview
themes. After this stage, coded data for quantitative and qualitative analysis were redefined based on discussions among the interraters. The final analysis was completed when all themes were refined and a final evaluation of the codes was reviewed.

Both inter-raters were the researcher’s colleagues, had experience coding with linguistic data, and were familiar with the error-sequence patterns. One of the inter-raters had previously coded data using a modified version of the codebook in this study. The other inter-rater was an instructor of English linguistics at a large southeastern university. Each inter-rater coded 13% of the quantitized data. Initial reliability for each inter-rater was calculated at 90.88% and 95.88%, respectively. The researcher and inter-raters discussed the discrepancies. As a result, the initial codebook was modified and after subsequent coding of 14% of the data for quantitative analysis, a 99.64% and 99.85% interrater reliability was achieved by each interrater, respectively. Intercoder reliability was calculated using Miles and Huberman’s (1994) formula, where intercoder reliability was calculated as the number of agreements divided by the total number of agreements plus disagreements or:

\[
\text{reliability} = \frac{\text{number of agreements}}{\text{total number of agreements + disagreements}}
\]

(Miles & Huberman, 1994, p. 64)

Additionally, the data went through three intra-rater checks of the researcher’s coding. First, immediately after initial coding was completed; second, after initial inter-rater feedback was submitted back to the research; and
the final intra-rater check was completed before the data were subjected to further statistical analysis, or approximately three months after initial data coding. Intra-rater reliability also was calculated using Miles and Huberman’s (1994) intercoder reliability. Reliability scores were 90.13%, 98.19%, and 99.58%, respectively. All final discrepancies of intrarater and interrater scores were reviewed with the interraters.

Inter-reliability level for the IRF sequences and adjacency pair was calculated at 98.4% and 97.8%. After additional discussions with the interraters a final 100% inter-rater reliability was achieved. In addition, the researcher calculated an intra-rater reliability approximately two weeks after IRF sequences and adjacency pairs were determined. A reliability score of 100% was achieved.

For the interview data, the whole transcript was reviewed by both interraters. An initial 92.4% and a 94.0% reliability score was calculated. After another round of discussions among the researcher and interraters, a 95.3% and 96.5% reliability level was achieved. After reviewing discrepancies the inter-reliability level was calculated at 100%. Finally, the researcher calculated an intra-reliability score for her coding, approximately two weeks after inter-reliability was calculated. An intra-reliability score of 98.7% was achieved.

Next, data reduction (Stage 3) commenced. Data reduction included inputting the questionnaire into Survey Gold (Golden Hills Software, Inc., 2005/2006). In addition, quantitized data were input and descriptive statistics were calculated using SAS® (SAS Institute Inc., 2004).
Following, was the data comparison stage (Stage 6), where the qualitative data, the quantitized data, and interview data were compared for consistencies, outliers, and emerging themes. Next, was the integration stage (Stage 7) wherein both data types were integrated as two separate wholes (Onwuegbuzie & Teddlie, 2003). Within this stage, the legitimation process also began. Once the researcher believed that the data were legitimate, in other words, that there were no other possible explanations, then both the quantitative and qualitative data were interpreted and the final report was written. To ensure the process of legitimation, the two interraters who coded during the data display stage reviewed both data interpretation and the conclusions. Results also were submitted to the participants’ teachers for final review (see Figure 11 for an overview of the research process).
Figure 11. Research implementation process.

I. Data Collection
- Questionnaire
- Two-way task w/ text chat
- Purposeful Interviews

II. Data Analysis
- a. Data Transformation
  - Quantitizing
  - Conversation Analysis
    - IRF & Adjacency Pairs
    - * Coding/memos-interview
  - Coding
  - b. Data Display
    - Inter/Intra rater checks
  - c. Data Reduction
  - d. Data Comparison
    - Statistical Results
    - IRF & Adjacency

III. Data Interpretation QUAN + QUAL

IV. Final Report / Discussion
* Final checks with participants and interraters
Quantitative Analysis Procedures

After the data had been quantitized and coded by both the researcher and the inter-raters, the data were analyzed using SAS® (SAS Institute Inc., 2004) software [version 9.1.3]. SAS was used for descriptive statistics, measures of central tendency, standard deviation, chi-squares, and four Fisher’s Exact Tests. SPSS version 11.0.1 (SPSS for Windows, 2001) was used for the multivariate analysis of variance (MANOVA) and subsequent discriminant analysis. In addition, the data were examined for deviation from normality by examining the skewness and kurtosis coefficients. After this assumption check, statistical analyses were used to address the research questions. For ease of reading, the applicable statistical method is described under each null hypothesis, as well as being available in Table 4, which describes the coding process and statistical procedures in relation to the research question.
Table 4

*Research Questions with Data Analysis Procedure*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Research &amp; Null Hypothesis</th>
<th>Analysis</th>
<th>Type of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the difference in the incidence of corrective feedback in synchronous environments provided by adolescent EFL learners to other dyad members as a function of grade level?</td>
<td><em>Null Hypothesis 1.</em> There is no difference in the incidence of corrective feedback in synchronous online environments provided by adolescent EFL learners to other dyad members as a function of grade level.</td>
<td>Step 2b of coding process (Total Tally of Grade)</td>
<td>– 4 x 2 Chi-Square (12) Effect size measured by Cramer’s V</td>
</tr>
<tr>
<td></td>
<td><em>Research Hypothesis 1.</em> There is a difference in the incidence of corrective feedback in synchronous online environments provided by adolescent EFL learners to other dyad members as a function of grade level.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Question</td>
<td>Research &amp; Null Hypothesis</td>
<td>Analysis</td>
<td>Type of Analysis</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>2. What are the differences in the nature of corrective feedback in online synchronous environments provided by EFL learners to other dyad members as a function of grade level?</td>
<td><em>Null Hypothesis 2.</em> There is no difference in the relationship among the type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade level.</td>
<td>Step 2a of coding process (Types of Corrective Feedback – P2)</td>
<td>- 4 x 4 Chi-Square - Effect size measured by Cramer’s $V$ and - MANOVA - discriminant analysis - effect size as measured by $\omega^2$</td>
</tr>
<tr>
<td>Research Question</td>
<td>Research &amp; Null Hypothesis</td>
<td>Analysis</td>
<td>Type of Analysis</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>(12) What is the relationship between the type of learner errors and type of</td>
<td>Null Hypothesis 3. There is no relationship between learner error and type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade level.</td>
<td>Step 2d of coding process (Error with Corrective Feedback Type)</td>
<td>- 4 Fisher’s Exact Tests</td>
</tr>
<tr>
<td>corrective feedback in online-synchronous environments provided by EFL learners to other dyad members?</td>
<td>Research Hypothesis 3. There is a relationship between learner error and type of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members and grade levels.</td>
<td>- Cramer’s V</td>
<td></td>
</tr>
</tbody>
</table>
Table 4

*Research Questions with Data Analysis Procedure (continued)*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Research &amp; Null Hypothesis</th>
<th>Analysis</th>
<th>Type of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. What interactional conversation characteristics by dyad members are present</td>
<td>Characteristics in terms of corrective feedback, errors, and responses to previous turns or previous requests, questions, prompts, invitations, and so forth.</td>
<td>1 &amp; 2 of coding process</td>
<td>Conversation Analysis (using IRF &amp; adjacency pair coding)</td>
</tr>
</tbody>
</table>
Null hypothesis 1. There is no difference in the incidence of corrective feedback in synchronous online environments among adolescent EFL learners working in dyads across grade levels. To test this hypothesis, first all turns were counted for total number of learner turns and turns containing errors. Then, within each dyad, the number of incidences of corrective feedback was reduced. If there was an occurrence of corrective feedback within one dyad then a frequency of “1” was entered; or if there were not any occurrences, then a frequency of “0” incidences of corrective feedback moves was entered for each dyad. The sums of incidences of corrective feedback for each grade were used for statistical analysis.

A chi-square analysis was used to compare the amount of corrective feedback across the grade levels. The independent variable was grade level and the dependent variable was amount of corrective feedback received when errors occurred. This yielded a 4 x 2 chi-square contingency table. Huck (2004) notes that a chi square analysis is appropriate for comparing categorical data.

Assumptions that were reviewed and considered before conducting the chi-square were that the data represented independent observations and mutually exclusive row and column variables that include all observations (Glass & Hopkins, 1996). The researcher carefully examined each category before a chi-square was applied. The frequencies of each cell size as well as the sample size of learners providing corrective feedback were determined after the coding. The observed and the expected frequencies were computed and the effect size was measured using Cramer’s V. The observed frequency was compared with
the expected frequency. If the observed $\chi^2$ was larger than the expected frequency then the null hypothesis was rejected at the .05 level. If rejected it could be concluded that there is some association between the two variables.

Null hypothesis 2. There is no relationship between the type of corrective feedback in online synchronous environments provided by EFL learners to other dyad members and grade level. After the total number of corrective feedback incidences was tallied and converted into a percentage score, the total number of learner turns with error receiving corrective feedback was coded. Again, these were collapsed within dyads to either zero or one incidence of corrective feedback and error. The types of corrective feedback were coded and sorted under the following categories: explicit correction, recasts, elicitation, metalinguistic feedback, clarification request, repetition, and emergent. Lyster and Ranta (1997) found that four types of corrective feedback (i.e., elicitation, metalinguistic feedback, clarification request, and repetition) lead to learner repair. These four types were considered as one category, namely negotiation of form. Similarly, Castañeda (2005), in her study of online corrective feedback moves by instructors of Spanish-as-a-foreign-language, also collapsed the four types of corrective feedback leading to repair; however, she categorized them under the category of opportunity to negotiate. Lyster (2004) and Lyster & Mori (2006) also collapsed these four feedback types into prompts. Conversely, explicit correction and recasts were found not to lead to students’ repair, or led to a low rate and, therefore, were left as separate categories. Emergent is a category that was left open for any types of corrective feedback that might have
arisen during the coding process that were different from the a priori defined
categories.

To test Null Hypothesis 2, the coded and tabulated data on the frequency
of corrective feedback was used to conduct a 4 x 4 chi-square analysis via SAS
and a MANOVA via SPSS to evaluate the overall level \(n = 104\) = total number of
dyads) and the corrective feedback level \(n = 62\) = total number of each
corrective feedback incidences), respectively. The dependent variables were the
four categories (i.e., explicit correction, recast, negotiation of form, and
emergent) and the independent variable was the grade level (i.e., Grade 7,
Grade 8, Grade 10, and Grade 11).

For the chi-square, a 4 x 4 contingency table was used. A chi-square had
been chosen to determine the relationship between grade level as the
independent variable and corrective feedback type as the dependent variable.
Assumptions that were accounted in the previous null hypothesis (independence
and frequency counts in each cell) also were reviewed. All assumptions were met
and a 4 x 4 chi-square analysis was conducted.

A MANOVA using SPSS version 11.0.1 was used to determine whether
the four grade levels differ across the four dependent variables of corrective
feedback. The independent variable was the grade level (7, 8, 10, and 11) and
the dependent variables were the different types of corrective feedback (i.e.,
explicit correction, recast, negotiation of form, and emergent). A MANOVA rather
than an analysis of variance (ANOVA) was chosen to increase statistical power.
The alpha level for the statistical test was set at .05. When the results were
statistically significant \((p < .05)\), the effect size was measured via \(\omega^2\), and the data were computed and interpreted to assess the practical significance of the results (McLean & Ernest, 1998). Any statistical significance resulting from the MANOVA led to a discriminant analysis to identify which corrective feedback types discriminated the four groups (Cody & Smith, 1997).

Null hypothesis 3. There is no relationship between learner error and type of corrective feedback in online synchronous environments among adolescent EFL learners working in dyads across grade level. To test this hypothesis, four Fisher’s exact tests were computed, one for each grade level. The independent variable was type of error (i.e., grammatical, lexical, typographical/spelling, and usage of L1) and the dependent variable was corrective feedback type. The Bonferonni adjustment was used to control for Type I error. Specifically, each Fisher’s exact test was conducted at the .0125 (i.e., .05/4) level of significance.

In addition, quality of peers’ feedback was examined and categorized according to whether the corrective feedback was target-like or nontarget-like. This was examined holistically and added to the overall findings of the study. Additionally, the total number of utterances per grade level was measured to indicate the quantity of chat.

Qualitative Analysis Procedures of Conversation Analysis

Roger and Bull (1989) define conversation analysis as “examin[ing] the procedures used in the production of ordinary conversation” (p. 3). Conversation analysis (CA) is used to understand structures of conversational action and members’ practices for conversing (Hopper, Koch, & Mandelbaum, 1986). CA
also resists final categorization and coding to preserve detail that would be lost through such processes (Hopper et al., 1986). Further, CA is situated within ethnomethodology (Roger & Bull, 1989) and combines both hermeneutic-dialectic and logico-analytic perspectives (Heritage, 1987; Markee, 2000; Mehan, 1978).

Within SLA, Firth and Wagner (1997) argued that the field of second language should be expanded in that SLA theory needs a more emic-focused research within talk-in-interaction. Gass (1998), Kasper (1997), and Long (1997) contended that conversation analysis focuses on language use (i.e., social interactions) and not on acquisition (i.e., cognitive processes). However, investigations within conversational practices (i.e., turn-taking, repair, sequencing) are processes that are both social and cognitive (i.e., socially distributed cognition). Markee (2000) argued that because SLA studies examine such processes CA would be a viable as a, “methodological arsenal…of the sequential and other resources that speakers use to modify each others’ talk and thereby to comprehend and learn new languages” (p. 32) and would “play directly into the research program outlined by Long (1985) on the role played by comprehensible input in SLA” (Markee, p. 32).

CA does not develop arguments on a priori theory (formal, constructivist, nomothetic); develop arguments based on quantitative data of frequency, or lead to generalizations (Heritage & Atkinson, 1984; Markee, 2000; Negretti, 1999; Sacks, Schegloff, & Jefferson, 1974; Tarone, 1994). Within CA, a turn is defined
where one speaker’s turn is beginning as the other’s turn end (Sacks et al., 1974). Turns are constructed in relationship to previous and subsequent turns.

CA was chosen because it: (a) allows for analysis of ‘turns’ rather than utterances (Sacks et al., 1974), (b) allows the data to change, adapt, or modify the questions (Heritage & Atkinson, 1984; Markee, 2000), and (c) as Tarone (1994) argues, CA “Show[s] what successful input looks like for a single learner in a very particular context. What it cannot show is that successful input always looks this way for all learners in all contexts” (p. 327). The heuristic-inductive approach of CA allows the researcher to integrate the pragmatist philosophy of centering the focus of the study onto the research purpose. Certain evidence shows that due to the interactional context of chat, that text based chat (vs. audio chat) is a unique communication tool that differs from both oral and written media (Negretti, 1999). Negretti (1999) argues that because of the unique structures that learners produce and the unique context of the discourse, conversation analysis “is the most useful and fruitful because such a hypothesis-generating method is a good way to begin the study of new interaction/acquisition situations” (p. 76).

For the current study, conversation analysis provided an opportunity for the researcher to explore in-depth those dyads where learners with special needs were included. The researcher’s objectives of the last question was to explore key types and relations among corrective feedback, learner’s response, and type of corrective feedback. Next, CA provided the researcher the opportunity to review the data collected from individual participants without
generalizing, in which the data only could be generalized to the participant itself (Heritage & Atkinson, 1984; Markee, 2000; Negretti, 1999; Sacks et al., 1974; Tarone, 1994). CA also provided exploration of the nature of at-risk second language learners’ interaction and feedback negotiations, by allowing the data to produce the questions. Finally, CA provided the opportunity for new discoveries to emerge.

A guiding question highlights the researcher's interest at the onset, but also allows the researcher to change, adapt, or modify the question. In addition, as per the limited number of participants, the results did not lead to generalizations, but rather to discovery of L2 acquisition (Negretti, 1999) and any findings were limited to the participants themselves. The final question framed for qualitative analysis within this study was: What interactional conversation characteristics by dyad members are present in online-synchronous environments when one or more of the interlocutors are learners with special needs? Interactional conversation characteristics were extrapolated through initiation/response/follow-up sequences and adjacency pairs to determine corrective feedback moves, error types, and response to prompts.

Markee’s (2000) articulation and assumptions of CA were used as a tool for analysis. The four assumptions underlying CA are:

(a) conversation has structure; (b) conversation is its own autonomous context—that is, the meaning of a particular utterance is shaped by what immediately precedes it and also by what immediately follows it; (c) there is no a priori justification for believing that any detail of conversation,
however minute, is disorderly, accidental, or irrelevant; and (d) the study of conversation requires naturally occurring data. (Markee, 2000, p. 98)

It was expected that the conversation in the chat would have structure (i.e., a. conversation has structure) in that turns would be initiated and responded with additional turns. The conversations were preserved by the researcher and included all turns preceding and following the data examined, where none of the utterances was disregarded, (i.e., b. conversation is its own autonomous context and c. no a priori justification). Finally, conversation also is considered as naturally occurring (i.e., d. conversation requires naturally occurring data) talk and is situated within real time (Negretti, 1999).

Procedures for CA, as outlined by Markee (2000), first examine the “prototypical examples” (p. 99). Prototypical examples involve examination of the data set as a whole and analysis based on qualitative research criteria. It is not meant for the data to be quantified; however, quantitative analyses may be used for follow-up research or for presenting regularities in numerical form. Prototypical examples are sequences of questions and answers or adjacency pair as described by Sacks and Schegloff (1973). However, as Negretti (1999) noted, “adjacent pairs in online chats are more sequential and do not adhere to the time pattern of adjacent pairs” (p. 81), where turns in face-to-face conversations are serially located or adjacent to one another. Negretti (1999) found that most responses to initial turns were delayed or instantaneously mixed with other turns. As such, the flow of the conversation is atypical in that a response may not appear immediately after the question posted. In this study,
participants with special needs were extracted out of the initial data set and their
turns were coded based on the error treatment sequence (see Figure 9),
adjacency pairs, and initiation-response-follow up sequences (see Figure 12).

Both adjacency pairs and initiation/response/follow-up (IRF) sequences
were used as prototypical examples. Adjacency pairs (Sacks et al., 1974;
Schegloff & Sacks, 1973) were used to extract insight into the function of the
language. Any type of question, invitation, request with an applicable response
were considered adjacency pairs. Within adjacency pairs, turns were examined
for sequential ordering and completion of turns. For example, whether a question
was followed-up by a response, a request or invitation was replied with an
acceptance or denial.

The initiation/response/follow-up (IRF) sequence (Mehan, 1985; Ohta,
1993, 1994, 2001; Sinclair & Coulthard, 1975) was used as a guide for the
delayed turns in the chat room and to determine whether the turns went beyond
a traditional adjacency pair in terms of their complexity and relation to the type of
error and corrective feedback types. IRF’s were used also to determine structure
of conversation (Markee, 2000). The initiation turn can be a question or a
statement and/or includes an error, the response is an immediate turn to the
initiation and/or considered as feedback to the error in the initiation turn, and the
follow-up is praise from the teacher and/or repair of the error in the initiation turn
based on the feedback in the response turn. Figure 12 depicts possible content
for IRF routines. However, because the third turn need not be evaluative in
nature, the term follow-up (Sinclair & Coulthard, 1975) is used here rather than
the term evaluation (Mehan, 1985), which also was used in Ohta’s (2001) study. The content of the follow-up turn varies, depending on content of the response turn. Following drill or mechanical practice, a follow-up turn is likely to contain a response to comprehending the previous turn.
Figure 12. Content of IRF routines modified from Ohta's (2001) study. Italic font indicates how IRF routines were considered within the current study. Arrows depict possible flow of IRF routines, but typical conversational routines do not necessarily follow this direction.
Within the IRF sequence, *Initiation* was coded when a statement or prompt was given to solicit a response from the peer whenever an error in the L2 occurred (see Appendix J for types of errors). After this stage, the turns were examined for any responses or feedback given on that particular error. If feedback and/or a response was given, then that particular turn was coded as *response*. Next, the data were examined if the learner, who committed the error and was given feedback on that error, also incorporated the feedback and corrected her/his initial error. If correction was attempted, then that turn was coded as *follow-up*. These coding steps are similar to the error treatment sequence, which is used as the unit of analysis in quantitative analysis.

It was expected that the conversation in the chat room would have instances of structure in terms of IRF sequences and adjacency pairs, wherein turns would be initiated and responded to by further turns; however, the researcher also believes that the sequences and/or pairs would be less frequent and interrelated.

The IRF sequences and adjacency pairs from the chat environment were expected to be dispersed in a visibly vertical sequence with overlapping turns being evident and presented. The researcher believed that when special need dyad participants were included, the IRF sequence, as well as adjacency pairs, would be more unstructured and incomplete, wherein initiation within IRF sequences and questions (within adjacency pairs) would lead towards infrequent responses and follow-up turns. As such, by using adjacency pairs and IRF sequence, the structure and nature of corrective feedback were examined.
Adjacency pairs and IRF sequences were identified using the whole chat transcript and not being limited solely to the immediate turns.

Finally, after prototypical examples had been identified, data were examined to identify and/or corroborate claims and structures, as well as go through “artificial falsification” (Markee, 2000, p. 99). This entails the data being examined in identifying prototypical examples, corroborating data, and using outside data to strengthen further the results. This final step also corresponds to Seliger and Shohamy’s (1989) criteria for validity control of qualitative data and used in Negretti’s (1999) study. The criteria are: (a) data retrievability, (b) data confirmability by supporting assertions with examples from the collected data, and (c) data representativeness.

As far as accessibility of data or data retrievability is concerned, data were easily accessible. When data collection was complete, the discussions were saved and printed. The results chapter of this study provides various examples of data confirmability. However, data representativeness was more complex to determine. Data saturation or representativeness might have been reached; however, it is speculative whether three participants with special needs identified in Grade 7 accurately represent the data. It is, however, additional information that should motivate further research. Because the focus of the research was on learner-learner dyads, the researcher did not participate or observe normal behavior in the actual chat environments during data collection. However, to reduce this limitation, rich examples were provided to show representatives of the data by using various sections within the same grade level.
The original conversations of learners with special needs were preserved by the researcher. All turns were included in the qualitative data analysis, and none of the utterances or turns was disregarded. Following Negretti’s (1999) study, the present study also could be considered to be situated in a natural setting, where the medium used was part of a learner’s exposure to language learning in their regular classrooms. Finally, it was the researcher’s intent to focus on the data as they presented themselves and to generate any findings relevant to the participants using the data. In addition, two other raters, who were colleagues and familiar with coding classroom data, also were trained to code the data, as well as were provided the opportunity to negotiate with the researcher, whenever inconsistencies occurred.

*Qualitative Analysis Procedures of Interview Protocol*

The interviews lasted approximately 10 minutes per participant and were audiotaped, and verbatim transcripts were created. The researcher then translated the interview transcripts into English for follow-up inter-rater analysis. The data were sorted, organized, and compared to establish themes. First, the researcher read through the complete transcript and developed initial themes. Second, each individual interview was recoded according to the original scheme. Third, the interview translated transcripts and preliminary themes were submitted to the inter-raters. The two inter-raters and researcher collaborated on the themes where an initial 92.4% and 94% inter-rater reliability score was obtained for each inter-rater, respectively. The pre-determined interview schemes were compared with one another and fine-tuning of the interview themes occurred.
Fourth, another round of inter-rater coding occurred to determine the newly established themes. Inter-rater reliabilities rates of 95.3% and 96.5% were calculated for both inter-raters, respectively. Fifth, interview themes were developed as umbrella terms to capture students’ suggestions and reactions to their experiences. Finally, the researcher recoded the data to assess for final agreements. An intra-rater reliability of 100% was calculated, which established reliability of the coding.

Summary

An explanatory sequential mixed method research design was used to guide the data analysis procures. This study was guided by the following objectives on learner-learner feedback within online synchronous environments: (a) to investigate the difference in incidences of corrective feedback between peers in online synchronous environments and, if so, to examine (b) the type of feedback and (c) the relationship between the error and feedback. To answer these questions the researcher decided on quantitizing the qualitative data of synchronous text-based chat. The data were subjected to both descriptive and inferential statistical analysis. The final objective was to (d) explore the interactional conversation characteristics among learners with a documented special need. To respond to the latter question, conversation analysis, using adjacency pairs and IRF sequence, was used to analyze the distribution and types of occurrences. The results of this study represented a quantitative and qualitative description of corrective feedback within computer-mediated
communication, among peer dyads, where one of the interlocutors may or may not be documented with a special need.
CHAPTER 4: DATA ANALYSIS AND RESULTS

Overview

This study was designed to determine corrective feedback patterns among pairs working in a synchronous online environment. Furthermore, a particular interest also was to include learner-learner dyads that have a documented special need. Corrective feedback was examined by using a two-way task within an online synchronous environment, which has been shown to result in corrective feedback within oral classroom discussions (Mackey et al., 2003) and in chat environments (Morris, 2005; Pellettieri, 2000). The research questions guided the design of the study and, thus, both quantitative and qualitative methodologies were employed to answer the three quantitative research questions and one qualitative question, thereby yielding a mixed method design.

Questionnaire Results

Background information was collected from the participants using a questionnaire (see Appendix I). A total of 208 participants participated in the study and completed the questionnaire. The participants were from intact classes and were randomly assigned into dyads within the classes. One hundred and four dyads were formed ($n = 208$), and of these matched pairs, 64.42% were female (see Table 2 and 3 for an overview on the participants).
Length of English-as-a-foreign-language study encompassed extra-curricular English classes through private language schools, private lessons, as well as formal instruction through public schools. Grade 7 students reported an average length of 3.96 years, Grade 8 of 6.38 years, Grade 10 of 6.90 years, and Grade 11 of 8.36 years of EFL study.

All of the 208 participants stated that they had experience with computers. More specifically, when the participants were asked for what purposes they use a computer, they replied that they most often used the computer for word-processing activities (21.48%), followed by games (20.07%), browsing the internet (18.97%), and for emails (17.01%), and less frequently on electronic bulletin boards (5.45%) and using the computer for programming (4.03%). With regard to chat usage, 129 students (62.02%) stated that they use chat for personal communication, whereas only 43 students (20.67%) had used it as part of their coursework. Figure 13 provides a visual representation of computer usage across all grade levels.
Figure 13. Personal computer usage across grade levels.

Computer Usage Across Grades in Percentages

- Chat
- Word
- Games
- Internet
- Email
- Bulletin
- Program
Across grade levels, their English class grades, as determined by their instructors for the current year, also varied. An equivalent of an “A” grade was reported by 34 students (16.50%), a “B” grade by 52 students (25.24%), a “C” grade by 65 students (31.55%), and a “D” grade by 55 students (26.70%). None of the students were failing their English class at the time of data collection. Again, data collection took part towards the end of the school year.

Finally, most of the students \( (n = 173 \text{ or } 83.17\%) \) also were studying an additional foreign language besides English as part of the class curriculum. This reflects the Slovene curriculum as outlined in Chapter 2, where students in Grades 7, 8, and 9 may choose an additional foreign language as an elective; however, students in general high school have two foreign languages as part of their mandatory curriculum.

The database. In addition to the data collected from semi-structured interview data, the qualitative data (i.e., transcripts) collected through the chat room served as the database for quantitative and qualitative analysis. Initially, the transcripts were sorted, organized, and reviewed. The data first were sorted by grade and organized into turns. For the purposes of this study, a turn was defined as one message being typed and sent to another member. In MSN Instant Messenger or Web Messenger, one participant typed a message in the text box and when s/he was ready for the partner to read their message, the participant sent the message by clicking on ‘send’ or hitting the ‘enter’ key on the keyboard. This one message sent to their partner constituted a turn. The data also were reviewed for any turns that would not be applicable to the study, which
would inappropriately increase the number of turns, and as such improperly inflate the amount of data collected. More specifically, the researcher deleted those turns where introductions in the L1 were used. Introductions in the first language were eliminated, as they were not part of the instructions; they served only a purpose of students finding out, who they were paired with and, most importantly, they were not conducted in the L2 and, therefore, were not an objective of this study. For similar purposes, dyads were deleted if their sole chat was in L1. Finally, chat transcripts were deleted if dyad members participated in the actual data collection period, but did not complete the practice run. The latter were deleted, because these participants were not exposed to the same treatment as other participants and, therefore, would not correctly reflect participants’ understanding of the task nor final results. In addition, there was one case of lost data on a disk due to a floppy disk malfunction. Other students were eliminated from the data analysis due to not having a partner in class (odd number of students), not showing up between the practice and actual sessions, or not being in a general high school but rather being students on a technical track. One dyad was eliminated from the data analysis for using profanity in all turns.

However, actual turns were included and only identifying information were altered, such as names, addresses, telephone numbers, and email addresses. Emoticons and punctuations also were preserved. Such text-based symbols were a substitute for facial expressions and emotions and therefore were
included in the turns. In addition, off-topic turns in the L2 were preserved, as they
did elicit corrective feedback.

As such, after refining the data, the database serving for analysis included
a total of 4,590 turns among 104 dyads in Grades 7, 8, 10, and 11. The turns
were not equally distributed among learners or grade. A total of 922 turns were
provided in Grade 7, Grade 8 had 600 turns, in Grade 10 there were 1,163 turns,
and 1,905 turns in Grade 11. These turns then were coded for corrective
feedback and error types within Microsoft Excel, using the codebook (Appendix
J), which is based on a modified version of Lyster and Ranta’s (1997) error
treatment sequence.

Data Analysis

The unit of analysis for this study was based on the modified error
treatment sequence of Lyster and Ranta (1997). The error treatment sequence
constituted an initial turn containing an error, following the learner’s possible
response to the error, and a possible peer’s reaction or response to the
correction (see Figure 9). The actual coding reflected that out of the seven a
priori categories of error types, five of the categories were existent. The seven
pre-determined error categories were: (a) grammatical, (b) lexical, (c)
orthographical, (d) typographical/spelling, (e) usage of L1, (f) multiple, and (g)
emergent. Following are definitions and examples of each error code.

A grammatical error. A grammatical error constituted a participant
producing a grammatical construction that violated the grammar conventions of
the English language. In addition, inappropriate word order or usage of articles and syntactical errors also were coded as grammatical errors.

*Example 1 (Grade 10)*

Line 735  Student A  then he tell her to made  bed  
*tense and article error = grammatical*

Line 736  Student B  At 3 o’clock he went  sleeping…What is in your  third picture?
*Tense error = grammatical*

Even though there were multiple errors of grammar within Line 735 in Example 1, this was counted as one grammatical error in the coding of individual turns containing errors.

*A lexical error.* A lexical error constitutes the usage of an inappropriate word or missing lexical item in an utterance (i.e., missing lexical items such as prepositions, nouns, adjectives). However, whenever article errors were committed those were coded as grammatical. More specifically, articles are functional not lexical free morphemes and their usage is related to rule application in an utterance. Examples of lexical errors include inaccurate, imprecise, or inappropriate choices of lexical items and non-target derivations of nouns, verbs, adverbs, and adjectives. Example 2 and 3 show examples of lexical errors.

*Example 2  (Grade 8)*
Line 30  Student A  At Tuesday she fell asleep  Inappropriate use of
         at 3  preposition

Example 3 (Grade 7)

Line 128  Student A  The girl stood up at 6:30  Inappropriate
         choice of lexical
         item

Orthographical errors. Orthographical conventions consisted of errors includ-
ing omissions of accent marks and letters unique to the English alphabet
(i.e., q, w, x, y) or transfer of letters unique to the Slovene language (i.e., č, š,
and ž). For example, an orthographic error would be evident, if the learner
spelled the lexical item “cherry” as “čerry,” reflecting the Slovene orthographic
convention for the “ch” sound.

Typographical / spelling errors. Typographical/spelling errors created while
inputting text via a keyboard. Such an error is made despite the user knowing the
spelling of the word. This usually results from the person’s inexperience using a
keyboard, from rushing, quick typing, not paying attention, or carelessness (see
Examples 4 and 5). A spelling error is one made when forming words with letters,
and the letters are not put in the acceptable order. However, in this study, it was
almost impossible to determine whether the learner made a typographical error
or spelling error, or if it was an error of orthographical conventions. Therefore,
orthographical and typographical/spelling were combined into one category
because it was difficult to determine if the omission of a certain letter unique to
the English alphabet as opposed to the Slovene alphabet was due to an
omission due to the speed of typing, spelling error, or in essence, if it was a true 
orthographic error.

*Example 4 (Grade 11)*

Line 87  Student B  do you know what  
 Error typographical 
 happen in my story  / spelling of 
 ‘happen’

*Example 5 Grade 10*

Line 323  Student A  I have nuber 3 too  
 Error typographical  
 / spelling error of  
 ‘nuber’

*Unsolicited use of L1.* Usage of L1 consisted of utterances, where the 
participants used the native language or the Slovene language as in Example 6.
One of the specifications in the instructions (see Appendix K and L) included 
usage of only English. Therefore, *usage of L1* was considered as an error. This 
category also was created to examine weather and how peers react with any 
form of corrective feedback to the unsolicited use of the L1.

*Example 6 Grade 7*

Line 427  Student B  po številkah, tako kot jaz.  
 Usage of L1 (L1 here is colloquial) 
 medva mava vsak svojo  
 zgodbo pol jo morava pa  
 skupi sestavt  
 [with numbers, like I did.]
we both have our stories
and then we have to put
them in order]

Multiple errors. Multiple errors were coded when more than one type of error occurred in a student turn (for example, lexical and grammatical) and, as such, these were coded as multiple errors. Example 7 provides a sample of multiple errors.

Example 7 Grade 10

Line 730    Student A    On mine one man eat an ice-cream...☺☺☺mnjam...On a visit came his friend. He talk him something....OK...That is when the time is 9.00. Than they go watc TV

Multiple errors (including grammatical, lexical, typographical / spelling)

An emergent category. An emergent category was created to allow for any error types that were not foreseen. Not surprisingly, there were no instances of any emergent error categories.

However, there were deviations that were not classified as errors and were not included in the frequencies of errors, but might serve useful in additional studies on corrective feedback. One such category is usage of L3, which are utterance(s) that contain neither the L1 (Slovene) or L2 (English), but is the third
language being studied by the participants (i.e., German). As such, an error is neither lexical (wrong vocabulary unit) or a typographical/spelling in the L2. Therefore, 11 turns in Grades 10 and 11 were coded as usage of L3. These turns were not coded as emergent because it was not certain if these errors were due to interlanguage development, transfer, or intentional use. If usage of L3 within the transcripts reflected inter-language development or transfer, then it would have been justified to enter this type of error into the emergent category (A. Erben, Ph.D., personal communication, February 27, 2006).

There were also turns that included content feedback, using an L1 term for clarification purposes. These instances were not errors that would promote corrective feedback, but rather generate content/question feedback, as illustrated in the following example:

Example 8 Grade 7

Line 766  Student B  How do you say POJDI  Usage of L1 for the purpose of content feedback. Pojdi spat = go to bed]

In Example 8, this turn was coded as content feedback with L1; however, they were not included in the error counts. Within this example, the student intentionally used the L1 for the purpose of receiving a question on the English translation of go to bed. Therefore, this was not a structural error, but rather a content question.
A final category was created called *orthographicons*, which included emoticons, exaggerations, and abbreviations. These instances were coded under a subcategory of orthographic conventions, and, again, were not counted as errors. Punctuation and/or capitalization were not coded as an error and were wholly ignored by all participants. This is probably due to the type of interaction, which is neither a written nor a traditional face-to-face format, similar to a combined verbal plus email interaction. In addition, it was interesting to note that almost every turn included either capitalization or punctuation errors and in none of the instances did the punctuation or capitalization receive any type of corrective feedback. Therefore, these were coded as separate categories, but were not included in the frequency counts of errors. In certain instances, punctuation, as well as, emoticons, were used to display facial expressions and emotions and as such enhanced the text-based conversational interaction among the dyads. Examples 9 through 12 show typical examples of capitalization, abbreviation, and punctuation errors.

*Example 9 Grade 7*

Line 443    Student A    *whats your first picture*    *Apostrophe and period are not included, as well as not capitalizing the beginning of a sentence*
Example 10 Grade 10

Line 324  Student A  sooo lets start with 4  

Punctuation and capitalization are not included, as well, as exaggeration of the utterance ‘so’

Example 11 Grade 10

Line 466  Student B  fine trnx u

Capitalization missing at the beginning of the sentence; abbreviation of ‘thanks’ and ‘you’

Example 12 Grade 11

Line 481  Student A  lol

abbreviation of laugh out loud ‘lol’

After all coding of errors had been completed, a total of 1,957 grammatical, lexical, orthographical/typographical/spelling, usage of L1, and multiple errors were found across all grade levels. When examining Table 5, which represents total error by type across all grades, the least frequent errors created are under the categories of usage of L1 and lexical errors. The most frequent errors were grammatical, multiple and orthographical/typo-spelling
errors. Overall, Grade 8 produced the least amount of errors and Grade 11 produced the greatest amount of errors. The total number of errors might have had a relationship with the total number of turns, because Grade 8 had the least number of turns (i.e., 600) and Grade 11 had the greatest amount of turns (i.e. 1,905). However, as these results are based on individual turns and the independence assumption is violated; thus statistical analysis was not justifiable.
**Table 5**

*Total Errors by Type Across Grade Levels*

<table>
<thead>
<tr>
<th></th>
<th>Grade 7**</th>
<th></th>
<th>Grade 8**</th>
<th></th>
<th>Grade 10**</th>
<th></th>
<th>Grade 11**</th>
<th></th>
<th>Total***</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>(%)</td>
<td>n</td>
<td>(%)</td>
<td>n</td>
<td>(%)</td>
<td>n</td>
<td>(%)</td>
<td>n</td>
<td>(%)</td>
</tr>
<tr>
<td>Grammatical</td>
<td>109</td>
<td>(25)</td>
<td>66</td>
<td>(27)</td>
<td>139</td>
<td>(29)</td>
<td>234</td>
<td>(29)</td>
<td>548</td>
<td>(28)</td>
</tr>
<tr>
<td>Lexical</td>
<td>42</td>
<td>(10)</td>
<td>39</td>
<td>(16)</td>
<td>81</td>
<td>(17)</td>
<td>94</td>
<td>(12)</td>
<td>256</td>
<td>(13)</td>
</tr>
<tr>
<td>Ortho / Typo / Spell*</td>
<td>99</td>
<td>(23)</td>
<td>66</td>
<td>(27)</td>
<td>103</td>
<td>(21)</td>
<td>191</td>
<td>(24)</td>
<td>459</td>
<td>(23)</td>
</tr>
<tr>
<td>Usage of L1</td>
<td>48</td>
<td>(11)</td>
<td>5</td>
<td>(2)</td>
<td>25</td>
<td>(5)</td>
<td>60</td>
<td>(8)</td>
<td>138</td>
<td>(7)</td>
</tr>
<tr>
<td>Multiple</td>
<td>132</td>
<td>(31)</td>
<td>72</td>
<td>(29)</td>
<td>136</td>
<td>(28)</td>
<td>216</td>
<td>(27)</td>
<td>556</td>
<td>(28)</td>
</tr>
<tr>
<td>Emergent</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
</tr>
<tr>
<td>Total***</td>
<td>430</td>
<td>(22)</td>
<td>248</td>
<td>(13)</td>
<td>484</td>
<td>(25)</td>
<td>795</td>
<td>(40)</td>
<td>1957</td>
<td>(100)</td>
</tr>
</tbody>
</table>

Key: Ortho / typo / spell = orthographic, typhographical and spelling

* Collapsed orthographic and typographical/spelling into one category.

** Percentage calculated as cell frequency divided by column total

*** Percentage calculated as column or row total divided by the grand total
The next step in the coding and analysis process was determining corrective feedback moves from the errors committed. From the review of literature, the researcher determined six a priori types of corrective feedback, of which all six types were found within the data. Corrective feedback types identified were: (a) explicit correction, (b) recast, (c) clarification request, (d) metalinguistic feedback, (e) elicitation, and (f) emergent. Following are a description of each corrective feedback type with examples.

**Explicit correction.** Explicit correction is an unambiguous and clear provision of the correct form, where a learner explicitly corrects their dyad member’s error(s). Example 13 shows an explicit correction in Line 91 based on a grammatical error in Line 90. Here, the learner gave an explicit corrective feedback move. The dyad member, who committed the error, noticed the feedback and responded with her own modification of the grammatical error she committed in Line 90.

*Example 13 Grade 7*

Line 90  Student A  FIRST- MONDAY P.M. AT 7 O’CLOCK SHE COOK BREAKFAST  
           * Grammatical error

Line 91  Student B  * SHE COOKS  with explicit  

Line 92  Student A  *COOKED  correction

**Recasts.** Recasts are a learner’s reformulation of all or part of her/his dyad member’s utterance excluding the error. Example 14 shows an example of a dyad member committing a lexical error in Line 332 and instantaneously in the
following turn clarifying the typographical/spelling error by using L1. The learner then recasted the error Line 334 by reiterating the dyad member’s sentence without the error.

Example 14 Grade 7

| Line 332  | Student A  | 5 She has stomacheak |
| Line 333  | Student A  | I write (da ga boli trebuh) good |
| Line 334  | Student B  | 5 She has stomachache, Recast of lexical error and her mother takes her to the hospital. |

Clarification request. Clarification request indicates to the dyad member either that the learner does not understand the utterance or that the utterance is ill-formed in some way or that a repetition or a reformulation is required on the part of the dyad member as in Line 104 in Example 15.
Example 15 Grade 8

Line 102  Student A  2. They are ate something
and one girl tol something
at 9. o clock

Line 103  Student A  ok?  Clarification request

Line 104  Student B  what does TOL mean  typographical /

Line 105  Student A  Told  spelling error

Line 106  Student A  Sory

Metalinguistic feedback. Metalinguistic feedback involves comments that indicate that there is an error somewhere. These comments can be in the form of grammatical metalanguage or can point to the nature of the error. In Example 16, Student A did not correctly form the past tense in Line 270. The peer then used metalinguistic feedback in Line 272, by commenting and exaggerating with a ‘no’ utterance. After no response was given, Student B then followed up with an explicit correction in Line 273 by capitalizing or emphasizing the error.
**Example 16 Grade 7**

Line 270  Student A  her eggs did not good  
          Tense error

Line 271  Student A  Later she was hungry   
          With meta -

Line 272  Student B  nononononononononon!  
          linguistic feedback

Line 273  Student B  Her eggs WASN'T good  
          and explicit

Line 274  Student A  yes I BELIVE YOU  
          correction

**Elicitation feedback.** Elicitation is when the learner directly elicits the correct form from her/his dyad member. These elicitations may be in various forms. The learner can allow the dyad member to fill in the blank, can use questions to elicit the correct form, or can ask the dyad member to reformulate the utterance. In Example 17, a dyad member committed a lexical error in Line 1149. The learner did not understand the utterance and elicited in Line 1152 the correct lexical item. However, either the dyad member did not provide an answer because of topic continuation or the dyad member did not perceive turn 1152 as a request for correcting the error.

**Example 17 Grade 11**

Line 1149  Student A  i have a mote  
          Lexical error

Line 1150  Student A  Sory

Line 1151  Student B  at 8:00 or at 6:30 when
          she woke up

Line 1152  Student B  I have a……?  
          Elicitation Feedback
Repetition. Repetition is another type of corrective feedback move, when a learner repeats the dyad member’s erroneous utterance in isolation. In Example 18, in Line 642, the dyad member committed a multiple error consisting of a grammatical and typographical/spelling error. The learner in Line 643 used a repetition move and isolated the typographical/spelling error to provide feedback that the utterance was ill-formed. However, the dyad member did not provide any acknowledgments on either receiving the feedback or correcting the typographical/spelling error.

Example 18 Grade 7

Line 642  Student A  3. it’s tuesday a.m. at 3.00 she slepeng.  
Grammatical and Lexical error (multiple with)

Line 643  Student B  slepeng?  Repetition feedback

Emergent feedback. Emergent feedback or request for feedback was an a priori category created for the purpose of additional feedback types that might emerge from the data that were not accounted for in previous studies. An additional corrective feedback type emerged, named request for feedback. Instead of the learner providing a form of corrective feedback to the dyad member, the learner themselves requested feedback be given. This was considered as an additional corrective feedback type because it provided an opportunity to negotiate with person’s dyad member on a linguistic structure that had not been yet fully articulated or acquired by the learner soliciting the proper structure. Thus, request for feedback is defined as the dyad member herself
implicitly (see Example 14, Line 333) or explicitly (see Example 19 below) requesting feedback based on their own erroneous error. In this corrective feedback move, the learner acknowledges their error and solicits a correction to their ill-formed or ill-structured utterance. In Example 19, Student A did not complete their turn as s/he stumbled on an unknown lexical item. In the immediate turn, Student B requested feedback on the lexical item in the L1 and immediately received the feedback, which was then incorporated in Line 316.
Example 19 Grade 11

Line 313  Student B  my first: at 6.30 she woke up, her mother baked a  Did not complete sentence as lexical item was not known

Line 314  Student B  Kako se napiše zajtrk? [how do you write breakfast?] – request for feedback on unknown lexical item

Line 315  Student A  breakfast

Line 316  Student B  At 6.30 girl woke up and her mother had already baked breakfast for her. Learner incorporates feedback, but with a typographical / spelling error

Line 317  Student A  It is 7 o'clock and she made a breakfast

Example 20 below shows another instance of a request for feedback. Here, Student A uses the L1 as he is unsure of a vocabulary item. Initially, Student B thought it was funny and used an onomatopoeic interjection. However Student A continues and in Line 961 explicitly requests for the English translation of the unknown vocabulary unit. Two lines further, Student A requests an answer to his request and notices that Student B already provided implicit feedback to the erroneous term in Line 963. Even though
feedback was provided, it was not an accurate translation or vocabulary unit because the correct translation would be “frying” rather than “baking” the steak in a pan.

*Example 20 Grade 11*

Line 959    Student A    im peči the steak    *[I’m frying the steak]*

Line 960    Student B    ha ha

Line 961    Student A    peči in English    *[fry in English]*

*request for feedback*

Line 962    Student B    in the morning at six thirty

i woke up

Line 963    Student B    at seven o clock mother

bake me a steak

*Implicit feedback – recast*

Line 964    Student A    answer me please

Line 965    Student A    aja bake are you sure

Line 966    Student B    at eight o clock i ate my

steak

Example 21 and 22 below reveal additional examples on request for feedback. Again, these requests are for unknown lexical items. In Example 21, Student A does not remember the lexical item for ‘couch’ or ‘sofa’ so she requests it in L1 from her dyad member. The dyad member does provide the appropriate answer in Line 510, which is immediately incorporated into the learner’s turn in Line 511.
\textit{Example 21  Grade 8}

<table>
<thead>
<tr>
<th>Line 508</th>
<th>Student A</th>
<th>in my last picture girl was sitting on the i dont now how is english you said kavč</th>
<th>Request for feedback on lexical item ‘kavč’ [couch / sofa]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line 509</td>
<td>Student B</td>
<td>at 7.00 girl eats brekfast</td>
<td></td>
</tr>
<tr>
<td>Line 510</td>
<td>Student B</td>
<td>sofa is kavč</td>
<td>Explicit feedback provided</td>
</tr>
<tr>
<td>Line 511</td>
<td>Student A</td>
<td>so in my last picture girl was sitting on the sofa and she is looking very bad, i think she is sick</td>
<td>Incorporation of feedback</td>
</tr>
</tbody>
</table>

However, in Example 22 the learner requests the translation for ‘plate’ from his dyad member. The dyad member replies with two possible options, of which the learner who requested the feedback explicitly chooses one of the two vocabulary units suggested. However, he does not incorporate the feedback requested in any of the turns following acknowledgment of the feedback provided.
Another type of error correction that was found in the data, but was not included as a corrective feedback type, were instances of *self-correction*. Self-correction is when students correct their errors within the same or immediate turn. It is coded separately because it does not belong within the scope of corrective feedback by another learner, did not promote interaction, but resulted in correction within themselves--similar to one verbally correcting oneself out-loud. Self-identified errors occurred across all grades and were distributed as follows: (a) 12 (1.3%) in Grade 7, (b) 9 (1.5%) in Grade 8, (c) 17 (1.5%) in Grade 10, and (d) 40 (2%) in Grade 11. However, these might have been instances where self-correction gave the other dyad member the opportunity not to commit
an ill-formed utterance or structure and might have been facilitative to the dyad members’ conversational chat. However, there was no way to determine whether this had happened in this study. Interview or other reflective tools would have been facilitative to determine if this is a plausible premise.

Out of the 4,590 total chat turns, 88 represented various corrective feedback moves. Table 6 shows the frequency and percentage of corrective feedback types across the grade levels. More specifically, explicit correction (42%) was the most frequent type of corrective feedback move, followed by recasts (23%) and the emergent category request for feedback (20%) when examining the frequencies across the grade levels. The least frequently used corrective feedback type was in the category of opportunity for negotiation (Castañeda, 2005) or negotiation of form, which Lyster and Ranta (1997) coined as an umbrella term for elicitation, metalinguistic feedback, clarification request, and repetition. Together negotiation of form accounted only for $n = 13$ or 14% of total corrective feedback moves.
Table 6

*Frequency and Percentage of Corrective Feedback Types by Grade Level*

<table>
<thead>
<tr>
<th></th>
<th>Grade 7</th>
<th></th>
<th>Grade 8</th>
<th></th>
<th>Grade 10</th>
<th></th>
<th>Grade 11</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>(%)</td>
<td>$n$</td>
<td>(%)</td>
<td>$n$</td>
<td>(%)</td>
<td>$n$</td>
<td>(%)</td>
<td>$n$</td>
<td>(%)</td>
</tr>
<tr>
<td><strong>Explicit correction</strong></td>
<td>17</td>
<td>(45)</td>
<td>6</td>
<td>(43)</td>
<td>4</td>
<td>(25)</td>
<td>10</td>
<td>(50)</td>
<td>37</td>
<td>(42)</td>
</tr>
<tr>
<td><strong>Recasts</strong></td>
<td>5</td>
<td>(13)</td>
<td>5</td>
<td>(36)</td>
<td>5</td>
<td>(31)</td>
<td>5</td>
<td>(25)</td>
<td>20</td>
<td>(23)</td>
</tr>
<tr>
<td><strong>Elicitation</strong></td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>1</td>
<td>(5)</td>
<td>1</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>Metalinguistic feedback</strong></td>
<td>2</td>
<td>(5)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
<td>(0)</td>
<td>2</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>Clarification request</strong></td>
<td>5</td>
<td>(13)</td>
<td>1</td>
<td>(7)</td>
<td>1</td>
<td>(6)</td>
<td>0</td>
<td>(0)</td>
<td>7</td>
<td>(8)</td>
</tr>
<tr>
<td><strong>Repetition</strong></td>
<td>1</td>
<td>(3)</td>
<td>0</td>
<td>(0)</td>
<td>2</td>
<td>(13)</td>
<td>0</td>
<td>(0)</td>
<td>3</td>
<td>(3)</td>
</tr>
<tr>
<td><strong>Emergent</strong></td>
<td>8</td>
<td>(21)</td>
<td>2</td>
<td>(14)</td>
<td>4</td>
<td>(25)</td>
<td>4</td>
<td>(20)</td>
<td>18</td>
<td>(20)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>38</td>
<td>(43)</td>
<td>14</td>
<td>(16)</td>
<td>16</td>
<td>(18)</td>
<td>20</td>
<td>(23)</td>
<td>88</td>
<td>(100)</td>
</tr>
</tbody>
</table>

*Note.* Cell percentages were calculated as the sum of each cell divided by column totals. Row and column percentages were calculated as row total divided by grand total or column total divided by grand total, respectively.
When examining percentage of corrective feedback and learner turns with error by grade level (see Table 7), the percentage of learner turns with errors were approximately equal across all grade levels (between 41%-47%); wherein percentage of turns with errors receiving feedback decreased as the grade level increased. When examining both error and corrective feedback turns across grade levels, only 4% ($n = 88$) of student turns with errors received corrective feedback. Out of the 88 learner turns with error receiving corrective feedback, Grade 7 had the second least amount of errors and total turns compared to the other grades, but the highest amount of corrective feedback. On the other hand, Grade 11 had the highest amount of turns and errors, but the least amount of corrective feedback moves.
Table 7

<table>
<thead>
<tr>
<th></th>
<th>I. Total</th>
<th>II. Total</th>
<th>III. Percentage of Learner Turns with Error</th>
<th>IV. Percentage of Student Turns with Error</th>
<th>V. Percentage of Learner Turns with Error Receiving Corrective Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learner</td>
<td>Learner</td>
<td>Error</td>
<td>Error</td>
<td>Feedback</td>
</tr>
<tr>
<td></td>
<td>Cumulative Total</td>
<td>Cumulative Total</td>
<td>Errors</td>
<td>Error</td>
<td>Feedback</td>
</tr>
<tr>
<td>Grade 7</td>
<td>922</td>
<td>430</td>
<td>47%</td>
<td>38%</td>
<td>9%</td>
</tr>
<tr>
<td>Grade 8</td>
<td>600</td>
<td>248</td>
<td>41%</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>Grade 10</td>
<td>1163</td>
<td>484</td>
<td>42%</td>
<td>16%</td>
<td>3%</td>
</tr>
<tr>
<td>Grade 11</td>
<td>1905</td>
<td>795</td>
<td>42%</td>
<td>20%</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>4590</td>
<td>1957</td>
<td>43%</td>
<td>88%</td>
<td>4%</td>
</tr>
</tbody>
</table>

* a calculated as total number of learner turns with error divided by total turns,
  
b calculated as corrective feedback divided by learner error
When examining the sums of frequencies for all grades (see Table 8), the most frequent corrective feedback move was explicit correction for orthographical/typographical/spelling errors (21%) and emergent request for feedback on lexical errors (21%). As visually represented in Figure 14, the proportion of error types receiving corrective feedback reflects the rate at which various error types by turn occurred in the database.

Usage of L1 received the least amount of corrective feedback with only 2% allocated towards *explicit correction*, whereas *lexical* errors received the highest proportion (42%) of overall corrective feedback moves. The least amount of corrective feedback moves were in *negotiation of form*, and the least amount of errors that received feedback were in usage of L1.
Table 8

*Frequencies of Corrective Feedback and Learner Error for All Grades*

<table>
<thead>
<tr>
<th>Learner Error</th>
<th>Ortho / Typo /</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grammatical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lexical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spelling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explicit Correction</td>
<td>7 (8)</td>
<td>9 (10)</td>
<td>18 (21)</td>
<td>2 (2)</td>
<td>1 (1)</td>
<td>37 (42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recast</td>
<td>4 (5)</td>
<td>6 (7)</td>
<td>5 (6)</td>
<td>0 (0)</td>
<td>5 (6)</td>
<td>20 (23)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negotiation of Form</td>
<td>5 (6)</td>
<td>4 (5)</td>
<td>4 (5)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>13 (15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergent</td>
<td>0 (0)</td>
<td>18 (21)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>18 (21)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16 (18)</td>
<td>37 (42)</td>
<td>27 (31)</td>
<td>2 (2)</td>
<td>6 (7)</td>
<td>88 (100)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Cell percentages are calculated as cell total divided by grand total.
Figure 14. Corrective feedback frequencies per error type across grade levels.
Results

Following are the results of the research question within this study (see Table 4). For the three null hypotheses that were tested, all occurrences of corrective feedback or errors within one dyad were collapsed to either zero or one incidences. For example, if one dyad had three different types of corrective feedback (e.g., explicit correction, recast, and emergent) this was coded as one incidence of corrective feedback for this particular dyad. Similarly, the same procedure was used to code error types. The collapsing of incidences of both corrective feedback and error types was conducted not to violate the independence assumption. Because one member within the dyad might influence the type of corrective feedback and/or error, this established a possible influence among the dependent variables. By collapsing turns into incidences, the independence assumption was not violated and statistical analyses could be undertaken, of course, taking into consideration other assumptions.

Descriptive statistics were computed to assess the normality assumption. To be normally distributed variables, skewness and/or kurtosis coefficients (divided by their standard errors) should be within the ±3 range (Onwuegbuzie & Daniel, 2002). The skewness and kurtosis coefficients were reviewed for each of the variables, that is, for each type of corrective feedback incidences (explicit correction, recast, negotiation, and emergent), corrective feedback as a whole, and individual error types (grammatical, lexical, orthographical/typo/spelling, usage of L1, and multiple). Departure from normality was indicative for two of the four corrective feedback types and three out of the five error types. More
specifically, for the following corrective feedback types: (a) *negotiation* (skewness coefficient = 2.98; kurtosis coefficient = 7.04) and (b) *emergent* (skewness coefficient = 2.44; kurtosis coefficient = 4.05). For error types, the following were not within the limits of normality: (c) *grammatical* (skewness coefficient = -4.29; kurtosis coefficient = 16.70), (d) *orthographical / typographical / spelling* (skewness coefficient = -3.85; kurtosis coefficient = 13.07), and (e) *multiple* (skewness coefficient = -4.29; kurtosis coefficient = 16.70). Because the overall kurtosis coefficients were greater than 3 they suggested a leptokurtic distribution. Due to the fact that corrective feedback types negotiation and emergent, as well as the error types grammatical, orthographical/typo/spelling, and multiple did not fall within the domain of normality, additional caution should be exercised in interpreting any inferential analysis involving the aforementioned variables. Table 9 presents descriptive statistics of the variables as a function of grade level.
Table 9

*Mean and Standard Deviation for Incidence Variables as a Function of Grade Level*

<table>
<thead>
<tr>
<th>Corrective Feedback Types</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grade 10</th>
<th>Grade 11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Explicit</td>
<td>32</td>
<td>.34</td>
<td>.48</td>
<td>16</td>
</tr>
<tr>
<td>Recast</td>
<td>32</td>
<td>.16</td>
<td>.37</td>
<td>16</td>
</tr>
<tr>
<td>Negotiation</td>
<td>32</td>
<td>.16</td>
<td>.37</td>
<td>16</td>
</tr>
<tr>
<td>Emergent</td>
<td>32</td>
<td>.16</td>
<td>.37</td>
<td>16</td>
</tr>
<tr>
<td>Total feedback</td>
<td>32</td>
<td>.47</td>
<td>.51</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Error Types</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grade 10</th>
<th>Grade 11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Grammar</td>
<td>32</td>
<td>.91</td>
<td>.30</td>
<td>16</td>
</tr>
<tr>
<td>Lexical</td>
<td>32</td>
<td>.56</td>
<td>.50</td>
<td>16</td>
</tr>
<tr>
<td>Ortho/Typo/Spell</td>
<td>32</td>
<td>.91</td>
<td>.30</td>
<td>16</td>
</tr>
<tr>
<td>Usage of L1</td>
<td>32</td>
<td>.47</td>
<td>.51</td>
<td>16</td>
</tr>
<tr>
<td>Multiple</td>
<td>32</td>
<td>.97</td>
<td>.18</td>
<td>16</td>
</tr>
</tbody>
</table>
Results of Null Hypothesis 1

Null hypothesis 1. There is no difference in the incidence of corrective feedback in online synchronous environments provided by adolescent EFL learners to other dyad members as a function of grade level. Table 10 depicts corrective feedback and non-feedback incidences of error turns across all grade levels.

Non-feedback incidences were calculated based on error incidences, where no corrective feedback was provided. Similarly, corrective feedback incidences were calculated by taking all error turns that provided corrective feedback. Incidences were defined as collapsing all subtype corrective feedback levels into one category. Specifically, incidences had a value of zero, where there was no corrective feedback provided to the error or a value of one, where there was one or more corrective feedback types provided. As such, the total sample was 104, which appropriately corresponds to the number of dyads.
Table 10

Corrective Feedback and Non-Feedback Incidences by Grade Level

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Frequency of incidences</th>
<th>Corrective Feedback</th>
<th>Non-Feedback</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 7</td>
<td></td>
<td>$n = 15$</td>
<td>$n = 17$</td>
<td>$n = 32$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>47%</td>
<td>53%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40%</td>
<td>26%</td>
<td>31%</td>
</tr>
<tr>
<td>Grade 8</td>
<td>Frequency of incidences</td>
<td>$n = 5$</td>
<td>$n = 11$</td>
<td>$n = 16$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31%</td>
<td>69%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13%</td>
<td>17%</td>
<td>23%</td>
</tr>
<tr>
<td>Grade 10</td>
<td>Frequency of incidences</td>
<td>$n = 7$</td>
<td>$n = 17$</td>
<td>$n = 24$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29%</td>
<td>71%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18%</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Grade 11</td>
<td>Frequency of incidences</td>
<td>$n = 11$</td>
<td>$n = 21$</td>
<td>$n = 32$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>34%</td>
<td>66%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29%</td>
<td>32%</td>
<td>31%</td>
</tr>
<tr>
<td>Total</td>
<td>Frequency of incidences</td>
<td>$n = 38$</td>
<td>$n = 66$</td>
<td>$n = 104$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37%</td>
<td>64%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
From the observed frequencies and percentages in Table 10, there were more non-feedback incidences within each grade level than feedback incidences. Across all grade levels, 64% were non-feedback incidences and 36% were corrective feedback incidences. Grade 7 had the highest amount (40%) and Grade 8 had the lowest amount (13%) of total corrective feedback incidences across all grade levels. However, the low amount of total corrective feedback in Grade 8 might be due to fewer participants.

Before proceeding with the chi-square analysis, assumptions were reviewed for randomness, independence, and frequency of expected observations. The data were collected from a random sample, the frequency within each cell was collapsed to incidence level to prevent the violation of independence assumption, and the degrees of freedom and expectancy counts were reviewed. None of the expected cells contained a count of less than five. Because all assumptions were met, the researcher proceeded with the chi-square. Using a contingency table, a 4 x 2 chi-square was conducted via SAS to test this null hypothesis. The analysis revealed no statistically significant difference in the incidence of corrective feedback as a function of grade level, \( \chi^2(3, N = 104) = 2.30, p > .05 \). Cramer’s \( V \), the effect size measure indicated a relatively moderate relationship, with \( V = .51 \). This effect size suggests that the small sample size prevented a statistically significant relationship from emerging.

Results of Null Hypothesis 2

Null hypothesis 2. There is no relationship between the type of corrective feedback in online synchronous environments provided by adolescent EFL
learners to other dyad members and grade levels. To test this hypothesis, the tabulated data from Table 11 was used to conduct a 4 x 4 chi-square analysis.

The sample size for the chi-square was 62. The sample size is based on the incidence level of each correct feedback subtype: (a) explicit correction, (b) recast, (c) negotiation of form, and (d) emergent request for feedback, respectively. Incidences within each dyad were collapsed for each subtype.

In addition, MANOVA, a discriminant analysis, and an effect size as measured by $\omega^2$ were computed and interpreted to assess the statistical and practical significance of the results, respectively. A MANOVA was conducted to assess results at the dyad level ($n = 104$); therefore, incidences were calculated as the overall corrective feedback type incidences, whereby each subtype was collapsed to either zero or one incidence.

A chi-square analysis was used to determine whether the four grade levels differed across the four dependent variables of corrective feedback. The independent variable was grade level (7, 8, 10, and 11) and the dependent variables were the corrective feedback types (explicit correction, recast, negotiation of form, and/or emergent). Negotiation of form resulted from collapsing clarification requests, elicitation, metalinguistic feedback, and repetition. Lyster and Ranta (1997) collapsed these four corrective feedback types, as they are ones that implicitly ask for feedback on ill-formed utterances. Within CMC, Castañeda (2005) also collapsed clarification requests, elicitation, metalinguistic feedback, and repetition; however, she named the collapsed category as *opportunity for negotiation* (Castañeda, 2005).
Table 11

*Observed Frequencies and Percentages of Corrective Feedback Incidences by Type and Grade*

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explicit Correction</th>
<th>Recasts</th>
<th>Negotiation</th>
<th>Emergent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>(%)</td>
<td>$n$</td>
<td>(%)</td>
<td>$n$</td>
</tr>
<tr>
<td>Grade 7</td>
<td>11</td>
<td>(18)</td>
<td>5</td>
<td>(8)</td>
<td>5</td>
</tr>
<tr>
<td>Grade 8</td>
<td>4</td>
<td>(7)</td>
<td>3</td>
<td>(5)</td>
<td>1</td>
</tr>
<tr>
<td>Grade 10</td>
<td>3</td>
<td>(5)</td>
<td>4</td>
<td>(7)</td>
<td>2</td>
</tr>
<tr>
<td>Grade 11</td>
<td>6</td>
<td>(10)</td>
<td>5</td>
<td>(8)</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>(39)</td>
<td>17</td>
<td>(28)</td>
<td>9</td>
</tr>
</tbody>
</table>
Before proceeding with the chi-square analysis, assumptions were reviewed for randomness, independence, and frequency of expected observations as in null hypothesis one. Because all the assumptions were met, a chi-square was computed using Table 12’s observed frequency counts on types of corrective feedback incidences by grade level (see Table 11). However, caution should be exercised in interpreting the findings because 75% of the expected counts were less than five.

The results revealed no statistically significant relationship between the type of corrective feedback provided by adolescent EFL learners to other dyad members and grade level, $\chi^2(9, N = 62) = 2.9323, p > .05$. Cramer’s $V$ was used to measure the effect size, which reflects a low relationship, with $V = .13$.

An additional test, a MANOVA, was computed to assess the relationship between type of corrective feedback and grade level. The independence, equality of variance-covariance, linearity, and normality assumptions were reviewed before proceeding with the MANOVA. SPSS for Windows (2001) was used for the statistical procedure. Box’s $M$ test was reviewed to determine homogeneity of the variance-covariance matrix involving the corrective feedback types. Box’s $M$ statistic was 60.02, suggesting heterogeneity of the covariance matrices ($F[30, 15046] = 1.84, p = .003$). Although Box’s $M$ is very sensitive to departures from normality; discriminant analysis and MANOVA are robust to this violation. As such, caution is noted when interpreting these results as heterogeneity appeared to be present.
Next, a MANOVA was conducted at the dyad level. In order to detect a moderate effect size with four variables a total of 64 participants (or 32 dyads) were needed per group or per each level of the independent measure (Stevens, 2002). However, because some data were eliminated from the analysis in Chapter 3, a total of only 26 dyads (i.e., 104 dyads / 4 groups) for each grade level were used for analysis. Analysis was completed using SPSS version 11 (SPSS for Windows, 2001). The hypothesized effect was used generating Wilk’s Lambda to evaluate the statistical significance of the variables. Wilk’s Lambda was used to measure the difference in means among the groups, where the greater the value of lambda the smaller the differences.

The relationship between corrective feedback type to other dyad members and grade level fell short of statistical significance (F[12, 257] = .59, p > .05 ; Wilks’ Lambda = 0.93. Further, the effect size, as measured by $\omega^2$, associated with grade differences was .04. Discriminant analysis was not undertaken because none of the variables were statistically significant. These results failed to support Hypothesis 2. Thus, it appears that there is no relationship between corrective feedback and dyads as a function of grade level. Table 12 presents descriptive statistics pertaining to these four variables as a function of grade.
Table 12

*Mean and Standard Deviation for Corrective Feedback Incidences as a Function of Grade Level*

<table>
<thead>
<tr>
<th>Grade levels</th>
<th>Explicit</th>
<th>Recast</th>
<th>Negotiation</th>
<th>Emergent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>$M$</td>
<td>$SD$</td>
<td>$n$</td>
</tr>
<tr>
<td>Grade 7</td>
<td>32</td>
<td>.34</td>
<td>.48</td>
<td>32</td>
</tr>
<tr>
<td>Grade 8</td>
<td>16</td>
<td>.25</td>
<td>.45</td>
<td>16</td>
</tr>
<tr>
<td>Grade 10</td>
<td>24</td>
<td>.13</td>
<td>.34</td>
<td>24</td>
</tr>
<tr>
<td>Grade 11</td>
<td>32</td>
<td>.19</td>
<td>.40</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>.23</td>
<td>.42</td>
<td>104</td>
</tr>
</tbody>
</table>
Null hypothesis 3. There is no relationship between learner error and type of corrective feedback in online synchronous environments among adolescent EFL learners working in dyads across grade levels. To determine statistical significance among learner error and type of corrective feedback, four Fisher’s exact tests were computed. Fisher’s exact tests were chosen because the observed frequencies were quite low and it was anticipated that the expected frequencies would be five or less (see Table 13 through 16). A chi-square would not have been an appropriate statistical procedure because chi-square assumes expected frequencies of five or more per cell. The independent variable was the error type and the dependent variable was the feedback type.
### Table 13

*Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 7*

<table>
<thead>
<tr>
<th>Learner Error</th>
<th>Orthographic /</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typographical /</td>
</tr>
<tr>
<td></td>
<td>Grammatical</td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
</tr>
<tr>
<td>Explicit Correction</td>
<td>3 (10)</td>
</tr>
<tr>
<td>Recast</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Negotiation of Form</td>
<td>2 (7)</td>
</tr>
<tr>
<td>Emergent</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (21)</td>
</tr>
</tbody>
</table>

\[ p=0.11, \textit{Fisher's exact test} \]
Table 14

Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 8

<table>
<thead>
<tr>
<th>Learner Error</th>
<th>Orthographic / Spelling</th>
<th>Grammatical</th>
<th>Lexical</th>
<th>Typographical / Spelling</th>
<th>L1</th>
<th>Multiple</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Explicit Correction</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>3 (21)</td>
<td>1 (7)</td>
<td>0 (0)</td>
<td>6 (43)</td>
<td></td>
</tr>
<tr>
<td>Recast</td>
<td>2 (14)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>0 (0)</td>
<td>1 (7)</td>
<td>5 (36)</td>
<td></td>
</tr>
<tr>
<td>Negotiation of Form</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (7)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (7)</td>
<td></td>
</tr>
<tr>
<td>Emergent</td>
<td>0 (0)</td>
<td>2 (14)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>2 (14)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3 (21)</td>
<td>4 (29)</td>
<td>5 (36)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>14 (100)</td>
<td></td>
</tr>
</tbody>
</table>

*p=0.67, Fisher’s exact test*
Table 15

Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 10

<table>
<thead>
<tr>
<th>Learner Error</th>
<th>Orthographic / Spelling</th>
<th>L1</th>
<th>Multiple</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grammatical</td>
<td>Lexical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explicit Correction</td>
<td>1 (8)</td>
<td>2 (17)</td>
<td>1 (8)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Recast</td>
<td>0 (0)</td>
<td>1 (8)</td>
<td>2 (17)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Negotiation of Form</td>
<td>1 (8)</td>
<td>1 (8)</td>
<td>1 (8)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Emergent</td>
<td>0 (0)</td>
<td>1 (8)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Total</td>
<td>2 (17)</td>
<td>5 (42)</td>
<td>4 (33)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

*p > .99, Fisher’s exact test*
Table 16

*Contingency Table of Observed Frequencies of Corrective Feedback and Learner Error Incidences for Grade 11*

<table>
<thead>
<tr>
<th>Learner Error</th>
<th>Grammatical</th>
<th>Lexical</th>
<th>Orthographic / Typographical / Spelling</th>
<th>L1</th>
<th>Multiple</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n  (%)</td>
<td>n  (%)</td>
<td>n  (%)</td>
<td>n  (%)</td>
<td>n  (%)</td>
<td>n  (%)</td>
</tr>
<tr>
<td>Explicit Correction</td>
<td>1 (6)</td>
<td>1 (6)</td>
<td>5 (31)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>7 (44)</td>
</tr>
<tr>
<td>Recast</td>
<td>1 (6)</td>
<td>3 (19)</td>
<td>0 (0)</td>
<td>1 (6)</td>
<td>0 (0)</td>
<td>5 (31)</td>
</tr>
<tr>
<td>Negotiation of Form</td>
<td>0 (0)</td>
<td>1 (6)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (6)</td>
</tr>
<tr>
<td>Emergent</td>
<td>0 (0)</td>
<td>3 (19)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>3 (19)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2 (13)</strong></td>
<td><strong>8 (50)</strong></td>
<td><strong>5 (31)</strong></td>
<td><strong>1 (6)</strong></td>
<td><strong>0 (0)</strong></td>
<td><strong>16 (100)</strong></td>
</tr>
</tbody>
</table>

\[ p = .04 > p .013 \text{ (Bonferroni adjustment), Fisher’s exact test} \]
Care should be used in interpreting these results, because several cells contained zero values. The Bonferroni adjustment was used because multiple comparisons were conducted. After the Bonferroni adjustment the alpha level was calculated as .0125 (i.e., .05 divided by 4 comparisons). The Fisher’s exact test did not yield a statistical significant relationship between error and corrective feedback type in Grade 7 ($p = .11$), Grade 8 ($p = .67$), Grade 10 ($p > .99$), or Grade 11 ($p = .04$). Furthermore, the effect size, measured using Cramer’s $V$, were: (a) Grade 7, $V = .46$; (b) Grade 8, $V = .52$; (c) Grade 10, $V = .39$, and (d) Grade 11, $V = .53$. Consequently, it can be inferred that from the Fisher’s Tests, there is no relationship between error type and type of corrective feedback across grade levels.

Results of Qualitative Analysis

A qualitative approach was integrated within the study to examine how participants with special needs interact within online synchronous discussions either with or without special needs. Three learners with special needs were identified out of the 208 participants, who were randomly selected. The data from the three learners with special needs were included in the quantitative analysis and were extrapolated for subsequent qualitative analysis, more specifically conversation analysis. The guiding question for qualitative analysis was: What interactional conversation characteristics by dyad members are present in online-synchronous environments when one or more of the interlocutors are learners with special needs?
Characteristics of interactional conversations were defined as corrective feedback moves, error types, and responses to prompts. The data were analyzed using conversation analysis (CA) as initiation/response/follow-up sequences (Mehan, 1985; Ohta, 1993, 1994, 2001; Sinclair & Coulthard, 1975) and adjacency pairs (Sacks et al., 1974; Schegloff & Sacks, 1973).

As stated above, the sample provided three learners with special needs who were grouped within two dyads in Grade 7. The special needs participants comprised one student who had a neurological disorder and epilepsy, one who had attention deficit hyperactivity disorder (ADHD), and one who had a learning disability. All were classified as having a mild form of disability on their individualized education plans. None of the participants with special needs required any special accommodations or modifications for the activity, tool, computer equipment, special writing equipment, or length of time as noted in the individualized education plans and by teacher’s assessment. Of the three learners with special needs, two were males and one was a female. The first dyad analyzed was a special need-special need (SN1 – SN2) female / male dyad. The total chat resulted in 18 total turns, compared to an average of 29 turns per dyad within the Grade 7 data set. The second dyad analyzed was a special need-high learner (SN3 - HL) dyad. The learner with special needs was a male and the high learner was a female. Their chat resulted in 17 total turns, wherein the learner with special needs provided 7 total turns and the high learner 10 total turns.
Of the 35 total turns created by the two dyads, a total of 30 initiation turns and 5 response turns were delineated. Within the IRF sequences, frequencies and tallies of corrective feedback and error types and their relationships were counted to determine any regularities. In addition, eight adjacency pairs were identified. Narrative explanations under representative data for each dyad are provided below.

Special need – special need dyad. This was a female-male dyad with a documented diagnosis of epilepsy and neurological disorders and Attention Deficit Hyperactivity Disorder (ADHD), respectively. In the first three lines, the participants used emoticons. Learner SN1 used a positive emoticon, whereas SN2 used negative emoticons representing an angry look in Lines 289 and 290. As it is the beginning of the conversation, SN1 began on a positive tone, whereas SN2 either had immediate negative emotions to the task, to their conversation partner, or as a reaction to the situation (see Extract 1).

Extract 1

Line 288: **SN1:** My name is sara ho are you 😊
Line 289: **SN2:** my names is martin 😞
Line 290: **SN2:** at 8 o'clock have a breakfast 😁

Even though SN2 had a negative disposition, as is evident by the emoticons in Lines 289 -290 and Line 303 (see Extract 2), the learner did provide an additional emoticon either to reinforce a turn or to mimic facial expression as within traditional face-to-face conversations. In Line 299, SN1 committed multiple errors that included grammatical and typographical/spelling errors. SN2
acknowledged the content in Line 300 and further attempted to correct the utterance. More specifically, SN2 attempted to reinforce corrective feedback that was being provided to SN1 by using an emoticon of a half-moon to visualize and enhance the meaning of 'sleep' (see Extract 2):

Extract 2

<table>
<thead>
<tr>
<th>Line</th>
<th>SN1:</th>
<th>SN2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>299</td>
<td>and shy go to slip</td>
<td>my too</td>
</tr>
<tr>
<td>300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>she go to sleep</td>
<td></td>
</tr>
<tr>
<td>302</td>
<td>at saturday morning got ap at 7.00 o clock</td>
<td></td>
</tr>
<tr>
<td>303</td>
<td>By</td>
<td></td>
</tr>
</tbody>
</table>

While examining the whole data set for this dyad, 3 responses to 17 initiations were identified within the IRF sequences, where both responses were targeted towards spelling and or lexical errors. In Extract 2, all turns included errors and therefore were initiations for peers to provide feedback. Line 300 included a content response, whereas Line 301 provided a response to the typographical/spelling error in Line 299 committed by learner SN1.

In Lines 291 and 292 (see Extract 3), both were coded as initiation turns, as both learners committed errors in their turns. SN1 created a multiple error including both grammatical and typographical/spelling, whereas SN2 committed only a typographical/spelling error with the utterance ‘slipp.’ Line 292 also was coded as a response in the IRF sequence because it provided feedback to the grammatical error, but not to the typographical/spelling error that SN2 also
committed. However, SN2 corrected this typographical/spelling error without any further feedback or prompts later in the chat in Line 301 (see Extract 2). A follow-up turn was not coded in this instance because SN1 did not incorporate the feedback in subsequent turns except in Line 299 (see Extract 2), where SN1 included the verb in the present form and somewhat changed the initial spelling of the utterance 'sleep,' but did not use the feedback provided by SN2 in Line 292 (see Extract 3).

Extract 3

Line 291:  SN1:  Shy slipping INITIATION
Line 292:  SN2:  she went to slipp INITIATION-RESPONSE

Concerning adjacency pairs, five pairs were identified, where a response was given to a prompt or to an error created by the peer learner. In Lines 288 and 289 (see Extract 4), the question asked by SN1, did follow a content response, but not a corrective feedback response in Line 289. Similarly, as in the IRF sequence mentioned above SN2 provided a reply to SN1’s error; however did not add much to the content of the conversation in terms of conversation. Following are turns where learners are working individually on their tasks and it appears as if they were not 'listening' to one another (i.e., reading previous posts by their dyad member) in terms of errors, providing content feedback, or furthering the conversation. Learner SN2 in Line 300 reveals that he accepted the content and explicitly acknowledged listening (i.e., reading posts by dyad member) to their interlocutor. In addition, implicit feedback may have been evident in Line 301 as a response to the initiation error in Line 299.
Extract 4

Line 288  SN1:  My name is sara ho are you  Question 1 (Error)
Line 289  SN2:  my names is martin  Answer 1 (Error)
Line 290  SN2:  at 8 o'clock have a breakfast  Error1
Line 291  SN1:  Shy slipping  Error 2
Line 292  SN2:  she went to slipp  Error 3 - Reply Error 2
Line 293  SN1:  shy go to titch  Error 4
Line 294  SN2:  at 6.30 woke up  Error 5
Line 295  SN2:  at 7 o'clock haved a  Error 6

braekfust

Line 296  SN1:  at 9.00o clock come for frend  Error 7
Line 297  SN1:  shy go to batrom  Error 8
Line 298  SN2:  she went to comeroency  Error 9 – phantom reply to

room

error 8 (line 297)

Phantom repair of 'go' to 'went'

Line 299  SN1:  and shy go to slip  Error 10
Line 300  SN2:  my too  Error 11-Confirming to line 299

Line 301  SN2:  she go to sleep  Reply to error line 297/299

Line 302  SN1:  at suesday morning got ap at 7.00 o clock  Error 12
*Special need – high learner dyad.* This male – female dyad comprised a learner with special needs (SN3) with a documented learning disability. The high learner (HL) was a learner with a high class grade and was recommended by the teacher as a strong language learner. For these reasons, the researcher paired this specific high learner with the learner with special needs. Of the total turns, SN3 produced six turns in which all but one turn comprised errors. The HL member constructed a total of 10 turns or approximately 59% of the total turns, where 7 of those turns included an error or initiation for a response.
As such, the SN3-HL dyad produced a total of 13 initiations with 2 responses in the IRF sequence (see Extract 5). Both responses were corrective feedback from the HL member toward lexical utterances in Lines 914 and 920.
Even though the HL member also produced errors in the responses, the errors created by the HL member did not result from any incorrect feedback, but an inappropriate spelling of the lexical item ‘mean,’ which in both instances was spelled as ‘meen.’ This error may imply that the HL member created a spelling error versus a typographical mistake.

When examining the adjacency pairs, the dyad members created a total of two pairs (see Extract 6). In Line 910, the SN3 learner errors consisted of lexical, grammatical, and typographical/spelling. The lexical error ‘ookap’ was reiterated again by the same learner in Line 918, which evoked a response by the HL in Line 920 to clarify the error. In this instance, the error evoked a response in creating an adjacency pair, which is evident in subsequent turns. Similarly, the second adjacency pair comprised a lexical item. SN3 posted that within a certain timeframe there was a ‘miy,’ which evoked a response by the HL member requesting clarification on ‘miy’ This adjacency pair was not fully completed because SN3 did not provide further posts on the meaning of ‘miy’ and was left without a completion of this adjacency pair.
<table>
<thead>
<tr>
<th>Line</th>
<th>SN3</th>
<th>HL</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>906</td>
<td>Hello</td>
<td></td>
<td></td>
</tr>
<tr>
<td>907</td>
<td>Hello</td>
<td></td>
<td></td>
</tr>
<tr>
<td>908</td>
<td>At 9:00 2 woman are eating their breakfast</td>
<td>Error 1</td>
<td></td>
</tr>
<tr>
<td>909</td>
<td>Monday is the mi</td>
<td>Error 2</td>
<td></td>
</tr>
<tr>
<td>910</td>
<td>Vookap is 3.00 clack</td>
<td>Error 3</td>
<td></td>
</tr>
<tr>
<td>911</td>
<td>Sorry, at 8:00 2 woman are eating their breakfast</td>
<td>Error 4 - reposting line 908 with content correction</td>
<td></td>
</tr>
<tr>
<td>912</td>
<td>A 7.00 clock is the miy</td>
<td>Error 5</td>
<td></td>
</tr>
<tr>
<td>913</td>
<td>At 10:30 the old woman is talking young woman that she has to going sleep.</td>
<td>Error 6</td>
<td></td>
</tr>
<tr>
<td>914</td>
<td>What meens miy?</td>
<td>Error 7 – clarification for error 5</td>
<td></td>
</tr>
<tr>
<td>915</td>
<td>At 6:30 the young woman is very tierd.</td>
<td>Error 8</td>
<td></td>
</tr>
<tr>
<td>916</td>
<td>At 9.00 is drink</td>
<td>Error 9</td>
<td></td>
</tr>
<tr>
<td>917</td>
<td>It's 7 o' clock and the young woman is eating breakfast.</td>
<td>Error 10</td>
<td></td>
</tr>
<tr>
<td>918</td>
<td>At vokap is</td>
<td>Error 10</td>
<td></td>
</tr>
<tr>
<td>919</td>
<td>They're going to the EMERGENCY ROOM.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>920</td>
<td>Do you meen woke up?</td>
<td>Error 11 – clarifying error 3 &amp; 10</td>
<td></td>
</tr>
<tr>
<td>921</td>
<td>Tuesday go tuslip</td>
<td>Error 12</td>
<td></td>
</tr>
<tr>
<td>922</td>
<td>write hours!</td>
<td>Error 13</td>
<td></td>
</tr>
</tbody>
</table>

When examining the turns from both IRF sequences and adjacency pairs, the errors of the SN3 learner were much more complex and non-understandable than those of the HL. Content errors were self-corrected by the HL as in Lines 908 and 911. In addition, in these turns it appears that the SN3 learner is not commenting on the content or errors, but solely focusing on task completion.

*Interview themes.* To understand better the learners’ experiences in the engagement with the task and to inform the quantitative and conversation
analysis results, semi-structured interviews were conducted with the three special needs students described above as well as with seven other extreme cases. The interviews were conducted in the Slovene language, after which, the researcher translated the interview. All identifying information was changed to conceal the identity of the participants. A colleague, who was also an educator in a Slovene elementary school, reviewed the interview transcripts for accuracy.

It is important to stress beforehand that the interview themes may not address all issues and that the experiences by the participants may or may not have been similar to those of the other participants in the study. It does not elucidate how many of the participants had a particular experience, but only how one or more participants chose to talk about various topics in the interview. Following is a description of the protocol and themes derived from the interview.

General prompts were prepared to guide the interview; however, additional questions were elicited depending on the progression of the interview. As previous research in this domain had not been conducted, the researcher chose the interview prompts based on the researcher’s observation during data collection, as well as general questions that would solicit additional information from the interview participants. Interview prompts were prepared based on informal conversations with learners from the pilot study in 2004. As such, prompts prepared for the interview consisted of the following:

a. General impression of the activity and mode;

b. Advantages and Disadvantages of task, language, partner type;

c. Usage of L2;
d. Interactions; and

e. Disability type, barriers, and advantages and/or difficulties of task
   (specifically asked for learners with special needs).

Interviews were analyzed from participants deriving from various dyad groupings: two members in Grade 11, which were both considered to be high learner – high learner dyads; one low learner - one high learner from Grade 10, one low learner-low learner dyad in Grade 8; two learners with special needs from Grade 7, and one high learner – one special need learner also from Grade 7. Participants were chosen based on the number of total turns, number of words, error level, corrective feedback moves, teacher recommendation, and current standing in class. The interview was transcribed and translated by the researcher. A total of 544 lines resulted from the interview. A line was counted as a complete turn before another interlocutor (interviewer or interviewee) interrupted or continued the conversation. Interview themes were determined by the inter-raters and researcher, which consisted of the following five main themes: (a) manner, (b) influence of mode, (c) feedback, (d) dyad types, and (e) language. Under each main theme, sub-themes were determined, as were the number of suggestions or the frequency of sub-themes that were mentioned (see Table 17 for an overview of Interview Themes).
Table 17

*Interview Themes*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub-themes</th>
<th>Freq.of sugg. by learner type</th>
<th>Num. of suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Manner</td>
<td>a. Enjoyment/dislike</td>
<td>a. 3hl, 2ll, 5sn</td>
<td>14 (13%)</td>
</tr>
<tr>
<td></td>
<td>b. Impetus to finish task</td>
<td>b. 2hl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Focus on task</td>
<td>c. 2hl</td>
<td></td>
</tr>
<tr>
<td>2. Influence of Mode</td>
<td>d. Focus on errors</td>
<td>d. 2hl, 3hl, 4ll, 9sn</td>
<td>43 (39%)</td>
</tr>
<tr>
<td></td>
<td>e. Writing</td>
<td>e. 3hl, 4ll, 9sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. Oral</td>
<td>f. 2ll, 1hl, 9sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>g. No difference</td>
<td>g. 1hl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>h. Using other forms</td>
<td>h. 1hl, 1ll</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. Typing/writing</td>
<td>i. 1ll, 1sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>j. Time</td>
<td>j. 1ll, 1sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>k. Perception of interlocutor participation</td>
<td>k. 2hl, 1ll, 2sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>l. Anonymity</td>
<td>l. 1sn</td>
<td></td>
</tr>
<tr>
<td>3. Feedback</td>
<td>m. Perception</td>
<td>m. 2hl, 1ll, 2sn</td>
<td>21 (19%)</td>
</tr>
<tr>
<td></td>
<td>n. No feedback/feedback</td>
<td>n. 4hl, 3ll, 3sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o. Role of teacher feedback</td>
<td>o. 2hl, 1ll, 3sn</td>
<td></td>
</tr>
<tr>
<td>4. Dyad types</td>
<td>p. Types of pairs</td>
<td>p. 8hl, 2ll, 7sn</td>
<td>17 (15%)</td>
</tr>
<tr>
<td>5. Language</td>
<td>q. Novelty of mode</td>
<td>q. 1hl, 1ll</td>
<td>15 (14%)</td>
</tr>
<tr>
<td></td>
<td>r. Language structure and comprehension</td>
<td>r. 1hl, 1sn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>s. Attitude</td>
<td>s. 3ll, 8sn</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>110</strong></td>
</tr>
</tbody>
</table>
Under the first main theme of Manner, three sub-themes were identified:
(a) enjoyment, (b) impetuous to complete the task, and (c) focus on the task. The theme Manner was created because it encompasses learner comments on behaviour, attitudes, perceptions, and reactions. All participants agreed that they enjoyed working on the task within the chat room, which was commented by high learners (hl), low learners (ll), and learners with special needs (sn). Their remarks stated that they enjoyed it very much, they would definitely partake and work on a similar activity again, and that it is was, literally, refreshing. It was surprising to see that one of the special need learners expressed enjoyment after their chat reflected emoticons that reflected negative emotions (see Extract 1). When asked why they were angry, they noted their negative emotions with regard to the mode and writing demands of the tasks, both of which are additional sub-themes described below.

Another sub-theme defined was on the need or Impetus to complete the task. More specifically, learners were focused on completing the task and provided that as a rationale for not providing any feedback. As one high learner states, “H1: Because we were trying to finish the task quickly, so I didn’t want to ask him.” In a sense, it was their drive to complete the task within the time period given, rather then being focused on the task at hand or even providing any feedback in terms of focusing on grammatical accuracy.

The final sub-theme identified within the umbrella theme of Manner, was Focus on Task. When asked the reason for not providing feedback, the learner justified by saying that their focus was on completing the task and that the
correctness of the language, while working on it, was not that vital. This is reiterated by the following high learner comments, “H2: Well, because we were trying to get the pictures in order and as long as the idea is there. I am not used to writing English out correctly in a chat room. I think that as long as they know what you are talking about, it is fine.”

However, it was interesting to note that both sub-themes mentioned, namely, the need to complete the task quickly and being focused on the task were provided by only the high learners. A possible reason might be that the high learners in comparison to other participants in the interview had the largest number of utterances, the least number of errors in relation to the number of turns, and the highest number of corrective feedback moves, whereby 30% of the errors they received were given some type of corrective feedback by the high learners. Even though both high learners provided justification and rationales for not providing feedback, one of them provided all the corrective feedback moves allocated within that dyad, where three of those corrective feedback moves entailed explicit corrections and one as a recast of grammatical and typographical/spelling errors.

An additional theme provided by all types of learners, which also produced the greatest number of prompts or suggestions, was within the category of Influence of Mode. This theme was created to encompass perceptions and attitudes towards the efficacy of the chat tool as a communication tool. As such, nine sub-themes were created. The first subtheme was their focus on errors. Despite the literature’s contention that learners are more aware of their errors
within synchronous communication (Gonglewski, 1999; Salaberry, 1996), the
interviews reflected only two comments where learners were more aware of their
errors. One learner when asked if they reviewed their texts or errors replied, “H4:
Yes. That helped me. If I forgot then I went back to look.” An intriguing comment
made by the second learner did not refer to noticing errors as a tool to facilitate
their correction, but more of an extrinsic factor, where others would be aware of
their own limitations of language competency. She states, “H2: Well, you can
see your errors and that is bad. But the good part is that only one other person
sees your mistake.”

Interestingly, these comments were made by two high learners. It was
expected in this study that the ability to review already-produced utterances
would be facilitative to the special need learners. However, the special need
learners and low learners had a negative focus on errors, as reflected by their
comments, and they did not find the transcript to be useful in their language
experience. One low-level learner commented that he did not even think about
using the transcript as a tool to review already-stated utterances or use the
transcript for their communication interaction.

However, the special need learners and low learners reported on being
focused on grammar and spelling, which swayed their discussion away from the
oral task (see sub-theme on writing below). Even though the students claimed
not to use the tool to review language production, they did focus on the ‘here and
now’ or their immediate language production. It could be hypothesized that based
on their comments that the learners were not explicitly aware that this type of tool
might be facilitative to their learning--more specifically, that they could use the chat tool to reflect on their language production, errors, and interlanguage development.

All learners--and most emphatically the special need learners--expressed their preference for oral/aural communication versus Writing, which is the second sub-theme identified. This sub-theme produced the highest number of suggestions among all the sub-themes under the main theme of influence of mode. A barrier within chat, suggested 16 times, was the writing aspect. When asked if it was the typing or the writing that was a barrier, learners claimed that typing was not a problem, but the fact that not only did they have to concentrate on the grammatical and lexical structures, but also on the spelling of utterances (see Interview Extract 1).

Interview Extract 1

Line 335:  **Question**  What was hard about it?
Line 336:  **SN3**  *Writing the words*
Line 337:  **Question**  What was difficult about writing?
Line 338:  **SN3**  *How to write the words…that was difficult.*
Line 339:  **Question**  What did you find easy?
Line 340:  **SN3**  *Typing*

The writing turned out to be stressful, especially for the special need learners because they kept on highlighting writing as a barrier to their language production in the task (see Interview Extract 2 and 3).
Interview Extract 2

Line 211  Question  What was difficult about using the chat room?

Line 212:  SN1  Writing.

Line 213:  Question  Do you think it would have helped you to have more time or for your partner to help you out?

Line 214:  SN1  No. I don’t like writing

When the special need learners were asked if they had any problems completing the task or any problems with concentration, they vigorously commented that the only issue that they had was with written communication. A learner with special needs stated, “SN3: No. The only problem I had was with the writing.” More specifically, a special need learner in Interview Extract 3 below stated that oral communication was quicker to complete than was written communication:
The low learners also were asked to mention any barriers and what they had found to be difficult. Similarly, they responded that the writing was the greatest obstacle. A representative comment made by the interview participants is reflected in the following thoughts mentioned by a low learner, “I think it would have been better to do it out loud. You can see the person and also talk with them instead of writing the answers.” Even the high learners commented on the writing portion of the task. One learner stated, “H4: I didn’t like to write. I have no problems typing…I type fast, but I don’t like to write in English” and when asked the reason, she stated, “H4: Because it is difficult to write words.” Based on these comments, it could be hypothesized that written conversation is cognitively more demanding than is oral conversation, despite typing skills or language
proficiency. These cognitive demands were commented on by the following learner, “H3: *I would rather do it out loud. You don’t have to think about writing. You just say it and its finished.*”

As such, almost all learners agreed that *Oral* responses were much easier than writing. The interview participants recommended that it would have been better to have audio chats versus text-based chats, which is another sub-theme under *influence of mode*. Only one high learner noted that there is no difference in using text chat or oral chat (*i.e., no difference subtheme*). Another benefit of using the chat tool noted was the option of using the emoticon functions (*i.e., using other forms subtheme*), which as previously noted, either was used to reinforce the content or was used as an attempt to replicate a facial expression typical of face-to-face oral conversations. Other intertwining themes included that *Typing* (or the physical act of producing conversation) was not an issue, but rather that the cognitive demands of written accuracy were an issue. Only one high learner noted that there was no difference between oral versus written modes. However, another stated that text conversation was a limitation, where they had to wait for a response because the conversation did not follow a typical face-to-face conversational pattern, where questions are usually immediately followed by some sort of response. As one high learner stated, “H3: *The most annoying thing for me when we chatted was not being able to connect with one another, that is, be on the same page.*”

Despite high learner’s concern with the pace of conversation, low learners and special need learners expressed that this form of conversation provided
them with the opportunity to think of their responses before they had to reply. This was identified as interview sub-theme *Time*. Providing adequate time is similar to Warschauer’s (1995, 1996) contention that chat provides learners the opportunity to engage epistemologically with their own learning process. An example is where a special need learner responds to a question on what he had found to be easy, “SN2: *Everything else except writing. That I had time to think before I would write.*” The actual pace of text-based chat and interaction patterns differ from oral conversations, where responses tend to be immediate without much tolerance for contemplation.

Interestingly, the interview responses reflect the researcher’s notes from data coding that participants were not listening each other (*perception of interlocutor participation*). For example, a high learner noted that initially they waited for their peer to respond, but after a while decided to work on their task with minimal reading (or listening) on what their peer posted. The learners with special needs commented that they were focused on their task without waiting for feedback or responses from their partner. When interview participants were asked the reason for not reading what their partner had posted, learners commented that their focus was on completing their portion of the task as completely and as quickly as possible. Another reason provided was that the language levels of the postings were non-understandable, either the language was severely deficient or highly advanced, where the peer was not able to decipher what was being posted.
The final sub-theme under influence of mode is *anonymity*. Anonymity was defined as the learner conversing without outside influence. In the extract below, the learner did not wish for anyone besides a fellow peer to be involved in the conversation. When asked the reason, the learner stated that it heightened her/his anxiety (see Interview Extract 4).

**Interview Extract 4**

<table>
<thead>
<tr>
<th>Line</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>295</td>
<td>Question</td>
<td>Would you do this exercise again?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>296</td>
<td>SN2</td>
<td>Yes. But, I would do it only for correspondence and with no one else being able to read it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>297</td>
<td>Question</td>
<td>Who is no one else?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>298</td>
<td>SN2</td>
<td>You or the teacher.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>299</td>
<td>Question</td>
<td>Why wouldn’t you want anyone else (the teacher or me)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>SN2</td>
<td>Because I feel like you are watching for my mistakes and that makes me sort of nervous.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The third theme identified was *Feedback*. This theme was developed when instances of feedback were mentioned in the interview, either as the role of teacher feedback, perception of feedback, or reasons for providing feedback. Both high learners and a special need learner provided feedback; however, one high learner stated that content comprehension rather than grammatical accuracy was important for a message to be correctly understood, reflected in
the following quote, “H2: Again, I think that chatting is really fast. In the Slovenian language we shorten or abbreviate words and everyone knows what it means. But, not in English and writing English in the right way. As long as everyone understands then there is no need to correct, right?” But, as mentioned by this learner, familiarity with the language in different contexts also is a factor in conversing successfully and having enough comfort with the context and peer to provide feedback.

On the other hand, a special need learner did not wish to provide feedback because he was unsure of his self-perceived level of knowledge in the English language was appropriate to provide feedback (see Interview Extract 5).

Interview Extract 5

| Line 263 | Question | Did you receive any feedback any correction on your errors? |
| Line 264 | SN2 | No. |
| Line 265 | Question | Why not? |
| Line 266 | SN2 | Because I didn’t know how to. |
| Line 267 | Question | What didn’t you know? |
| Line 268 | SN2 | English! |

This language learner commented several times throughout the interview that even though he enjoyed the task, he was quite unsure of his knowledge of English, found writing to be quite an arduous task, and noted that whenever working in pairs or groups, others tended to complete the task without his assistance.
Within the theme *Feedback* another sub-theme mentioned in the interview was *Perception of Feedback*. As one high learner pointed out, he attempted to provide feedback; however, the peer did not accept nor reject the feedback, thereby creating a state of uncertainty by the learner providing feedback. When the learner was asked if he gave feedback to his partner, he stated, “H1: Yes, I did. I tried to fix any errors, but I wasn’t sure if he understood what I was telling him.” Similarly, the learner with special needs commented that she also provided feedback; however, she did not receive any feedback on her work nor on the feedback she provided to her peer. This was also associated with the adjacency pairs and IRF sequences determined in the qualitative analysis, where prompts did not receive much responses and initiation of errors did not produce much corrective attention by the peer. Interview participants also mentioned that no feedback was provided either because there were too many errors, the learner perceived that their dyad members knows more, or that it is the teacher’s role to make any suggestions on errors (i.e., *no feedback/feedback subtheme*).

The final sub-theme on the *Role of Teacher Feedback* revealed that in all instances, learners did not miss the teacher’s feedback. In Interview Extract 6 below, the high learner explained that the interaction between the peer and himself/herself provided sufficient assistance, such that any teacher’s feedback would not have been deemed useful.
Interview Extract 6

Line 57  Question  Do you think it would have been better for you if the teacher was also in the chat room?

Line 58  H1  No. Why?

Line 59  Question  Maybe to correct your English. To help you out if you needed it.

Line 60  H1  No. *I don’t see a benefit of having a teacher in the chat room. My partner and I did perfectly fine.*

Other reasons given by the interview participants for not missing any teacher’s feedback were not having any major problems with the language (as reported by high learners) or a dislike of their teacher (as noted by low learners). Additional comments from low learners included that the teacher’s presence or feedback would not have made a difference. High learners stated that their comfort level would have altered if the teacher would have been included. One student stated, “H4: I don’t know. I just feel better without a teacher. You can make jokes without teachers.” It could be said that with the teacher’s presence the conversation would be more formal and more on-task. Similar discussions have been posited by Pellettieri (2000) and Kelm (1992). However, another high learner stated that, “H3: No, I wouldn’t feel comfortable. I would have liked to have someone who had the same level of English as I do. It would have been better,” suggesting that the conversation would have progressed with a more equal dyad member rather than teacher’s presence.
Consequently, the fourth theme *Dyad* was identified based on interview participants’ comments on the type of pairs member or qualities that dyad members should possess. High learners agreed that working with a partner with similar knowledge in English was beneficial. One high learner commented on her/his reactions if she/he had been paired with a low level learner, “H1: *Nervous. I would have to work with getting information from them and work on the English, also. I think it would be very frustrating.*” Another high learner also reiterated a similar sentiment concerning unequal partners, stating:

H2: *Yes. I worked really well with my partner. I think we helped each other out to get the pictures in some order. I don’t know if it was correct, but we tried. If I had a partner that didn’t know English, I think that I would have lost my mind. I don’t like to waste time … I like to get the work finished.*

The high learners who were paired with learners with low-proficient students commented that equal knowledge of English would have been advantageous. A high learner who was partnered with a lower-level student stated, "H3: *I think it would have been better if it would have been more equal. Equal. For example, having pairs with the same marks. That would make it more equal.*" The high learner further commented that the conversation did not progress as they had anticipated mainly due to the English language barrier. Likewise, the high learner partnered with a learner with special needs stated that she was focused more on the writing aspect and did not view it as a speech interaction. The high learner was frustrated by not being able to progress at a pace that was quicker and not being able to build on the task being presented.
Similarly, but for different reasons, the low learners commented that they would have preferred someone with equal or greater knowledge of the language. As one student stated, “L1: Yes, I think I would like to talk to another person, someone who knows more English so that they could help me.” Here, a higher-level student would have been favored mainly due to the assistance that the high-level student can provide the low level student. In the instance where a low learner was paired with a high learner, the lower-level student stated that she would not have changed her partner (see Interview Extract 7 below) and expressed enjoyment when working with her partner.

Interview Extract 7

Line 477  Question How was your partner?
Line 478  L3 Perfect. It was great. I wouldn’t have changed my partner.
Line 479  Question Do you think you and your partner were equal in your language knowledge?
Line 480  L3 Sometimes. My partner knows a lot of English and we had a good time.

Similarly, learners with special needs had the same sentiments as did low learners in that they would have preferred a peer with equal or greater knowledge of the language and that self-choosing partners would have been preferred.

In Interview Extract 8, the student with special needs first stated that a partner with greater or equal knowledge of the language would have been
preferred. However, when explicitly asked later in the interview if he/she would have wanted a partner with a higher working knowledge of the language, the learner commented that they would have preferred a peer with equal rather than greater knowledge of the language to control for the pace of conversation.

Interview Extract 8

Line 289  **Question**  Would you have changed anything?

Line 290  **SN2**  *Maybe someone else.*

Line 291  **Question**  Why?

Line 292  **SN2**  *I don’t know.*

Line 293  **Question**  What do you think would have been better? A friend, someone with a different English level...maybe more, less, or the same?

Line 294  **SN2**  *Yes, someone with the same or better English.*

........(later in the conversation)

Line 315  **Question**  How about if you are paired in the classroom, which partners do you like to work with?

Line 316  **SN2**  *Those that are about the same.*

Line 317  **Question**  Not more?

Line 318  **SN2**  *No. Because they go to fast.*

Based on the frequent mention of language level within dyad type, the final theme identified was *Language*. Apart from language level mentioned in the previous sub-theme, learners commented on the following topics, which were
identified as sub-themes: Novelty of mode, language structure and comprehension, and attitude.

A possible effect and one that influences other themes (namely, the theme influence of the mode) is the Novelty of Mode, as well as Language Structure and Comprehension. Even though, learners had had experience with using chat in the L1, the task itself was novel to them in terms of using it in the L2 and using the tool as a task for a class assignment. In addition, because the task was in English, special need students commented that the level of language comprehension was a barrier in using the tool more effectively. However, as recounted earlier by a high learner using the English language in a chat room does not necessarily include correct language structure as long as the message is correctly understood by the listener.

Most frequent comments under the theme Language were the learners’ Attitudes toward the language. Similarly, as with Language structure and comprehension, attitude towards the language influenced the previous identified sub-themes (i.e., Writing/typing, Dyads, Feedback, Task enjoyment/dislike). When learners were asked about the English language and any difficulties with the whole task, they commented that the task itself was enjoyable, but that they disliked English in general, disliked writing in English, or did not feel that they were proficient enough to write in English. Interestingly, high learners did not mention difficulties with the English language, only low learners and learners with special needs did so. These attitudes might have influenced the frequency and type of corrective feedback.
Chapter Summary

The descriptive data revealed that corrective feedback is provided through synchronous communication; however, there is no statistical significance in terms of the frequencies or types of corrective feedback across grade levels, or a relationship between learner error types and dyad member’s type of corrective feedback move provided. Interestingly, the amount of corrective feedback diminished as proficiency (i.e., grade level) increased. However, an additional MANOVA test was conducted to determine if there was a relationship between error types and grade level. The results did indicate statistical significance. The results and discussion will be expanded in a follow-up study, where learner repairs also will be included to determine any practical significance with regard to error, type of corrective feedback, and learner repairs.

As expected, conversation analysis of learners with special needs did reflect communication typical of online environments in that they were not serially located, but were dispersed throughout the conversation. In addition, learners commented that the most arduous task in the activity was the writing aspect, either because of the fast-paced nature of the activity or due to cognitive complexity. Regardless of the reason, they all agreed that they would have preferred oral communication. The implications of these results are discussed in the following chapter, as well as the pedagogical recommendations and implications for future research.
CHAPTER 5: SUMMARY, DISCUSSION, RECOMMENDATIONS, AND IMPLICATIONS

Overview

The purpose of this dissertation was to examine adolescent learner-learner corrective feedback patterns within a text-based synchronous environment. This final chapter presents the discussion and summary of the results presented in Chapter 4. Additional recommendations for future research as well as pedagogical implications will be provided.

Discussion

The role of corrective feedback, namely negotiation, has been argued to be facilitative of second language acquisition. From an interactionist perspective for acquisition to take place, there must be active involvement (Stevick, 1976, 1980), where conversational interactions contain opportunities for input and output, facilitating second language development to a various degree (Long, 1996). Varonis and Gass (1985) also contend that for learning to take place, learners must stumble upon “non-understandings” (p. 73). More specifically, the provisions of feedback give the learner an opportunity to compare target-like utterances and nontarget-like utterances with their own interlanguage utterances (Tomasello & Herron, 1988). In addition, synchronous online conversations assist the learner to visualize the talk process and provide an environment that
allows them to ask questions, discuss, interact, and seek assistance from peers or instructors.

As such, this study has attempted to address the overarching question on corrective feedback moves and types of corrective feedback within online synchronous environments among peer-to-peer interactions, as well as any relationships between the type of errors and their respective corrective feedback moves. Additionally, initial research on the characteristics of interaction between dyads, where three members are learners with a documented special need, also was explored. The a priori categories used for coding were based on previous research on corrective feedback of ill-formed utterances (i.e., Lyster & Ranta, 1997; Lyster, 2004; Morris, 2005) with an emergent category made available for any new discoveries that emerge.

Discussion of Research Question 1

The previous chapter addressed both the quantitative and qualitative results in detail. These results do confirm that some learners produce simple sentences and other learners produce more complex structures (Chun, 1994). Turning to research Question 1 on incidences of corrective feedback, the results of this study are similar to Iwasaki and Oliver’s (2003) findings in that there was a lower amount of corrective feedback as compared to previous face-to-face feedback research on non-native speakers (Iwasaki, 2000). There were approximately 37% corrective feedback incidences (see Table 10). However, when reviewing the data turn by turn, only 4% of the participants in this study received corrective feedback (see Table 7). This is a relatively low percentage
compared with other online studies, where 25.6% of negative feedback was
provided by non-native speakers (Iwasaki & Oliver, 2003) and 56% with children-
children online dyads within a foreign language situation (Morris, 2005). In
addition, corrective feedback amounts were relatively lower compared with other
face-to-face feedback studies, where feedback was more than 40% (Iwasaki,
2000) and even as high as 61% (Oliver, 1995) and 62% (Lyster & Ranta, 1997).
It is, however, important to note that in a study of native speaker instructors of
foreign languages and their usage of corrective feedback with their students in
synchronous and asynchronous modes, instructors also failed to provide
feedback; more specifically, they provided less feedback than anticipated
(Castañeda, 2005). Day, Chenoweth, Chun, and Luppescu (1984), in a study of
face-to-face classrooms, also reported that out of 1,595 errors, only 119 or 7.3%
received corrective feedback. Furthermore, adolescents participated in the
current study, whereas in previous studies the target participants were university
students (Blake, 2000; Castañeda, 2005; Iwasaki & Oliver, 2003; Pellettieri,
2000) and fifth-grade immersion children (Morris, 2005). A large amount of
corrective feedback might have been evident in Morris’ (2005) study in that only
135 error turns were accounted for in comparison with 1,957 error turns in the
current study. More importantly, the participants in Morris’ study also were intact
immersion students from one grade, which drastically differs to the participants in
this study, who were from traditional foreign language programs, where they
were exposed to different teaching methodologies and pedagogical techniques.
Discussion of Research Question 2

The data from this study did not reveal statistical significance with regard to corrective feedback incidences across grade level—the focus of research Question 2; however, corrective feedback was provided, albeit inconsistently in all grades. This supports descriptive research undertaken with university students (Blake, 2000; Pellettieri, 2000) and immersion middle school students (Morris, 2005) that dyads do provide interactional feedback to one another. It is also important to note that researchers applying inferential statistics to dyad or group members, while counting specific turns of errors and corrective feedback should take into consideration violations of the independence assumption. Therefore, any studies documenting results statistical significant results within dyad pairings should be scrutinized for assumption violations (e.g., Blake, 2000; Mackey et al., 2003; Morris, 2005).

Another important result was the identification of an emergent corrective feedback type, more specifically request for feedback. A possible rationale for the emergent category is because of the medium of the conversation. Because it was difficult for students to provide facial expressions or hand gestures as in face-to-face communication, students opted to ask for feedback, once they had stumbled on an incorrect linguistic form. Because this also represents a nonunderstanding (Gass & Varonis, 1985, 1994), whereby the student is focusing on what is not known, further research should be explored in terms of learner repair, whenever feedback is requested after the learner has committed an error. In addition, the use of request for feedback also might reveal the
learner’s interlanguage processes ‘at work.’ More specifically, from the interview results, the participants considered text-based chat as being more complex due to the written aspect of conversation. As such, within online chat the learners might have noticed their gap in the target language, thereby requesting feedback. It is possible that the online chat provided the means of negative evidence in that by visualizing the talk, the learners were more aware of the ill-formed utterances and triggered their attention towards a more appropriate linguistic structure. It might also indicate that these language learners are now psycholinguistically prepared to accept instruction on those linguistic forms (Pienemann, 1984).

There were also incidences of self-identification of error, whereby the student immediately self-corrects her/his error without any requests. These might have been due to typographical/spelling mistakes caused by the fast paced nature of the conversation. However, the current analysis was centered on other-initiated feedback repairs and not on self-repairs. Therefore, self-identification of errors were not examined in detailed.

Surprisingly, the data in this study revealed no statistically significant differences in the incidence of corrective feedback to other dyad members as a function of grade level. The researcher hypothesized that there would be a difference in the type of corrective feedback moves as proficiency and interlanguage development increased (Pienemann, 1987, 1989). In addition, it was hypothesized in this study that as learners notice erroneous utterances (Alanen, 1992; Lightbown & Spada, 1990; Long, 1991, 1996; Tomasello & Herron, 1989) and negotiate these ill-formed structures that based on proficiency
(i.e., grade level) interlanguage processes would affect the nature of corrective feedback. However, this study revealed no such differences. This would suggest that notwithstanding proficiency levels in the foreign language the nature of feedback provided did not differ. However, other studies similar in nature to the current research did not compare across grade levels. Such studies examined learners within a similar grade level or proficiency level (Blake, 2000; Morris, 2005; Pellettieri, 2000), studied native-speaker interactions with second language learners (Castañeda, 2005; Iwasaki & Oliver, 2003), examined learners within face-to-face immersion classrooms interacting with participants of a similar age level (Lyster & Ranta, 1997), or investigated dyad types that included adults and children native and non-native speakers (Oliver, 1995).

Nonetheless, even though the type of corrective feedback moves were not statistically significantly different across grade levels, additional questions do arise and more in-depth research is warranted on the quality of corrective feedback moves concerning second language learners’ stages of interlanguage development. In addition, when examining the relationship between error types and corrective feedback moves, the results revealed no statistically significant relationships within Grade 7, Grade 8, Grade 10, or Grade 11. Theoretically, the results may be in line with Pienemann and Johnston’s (1987) assertion that acquisition is explained by memory processing rather than grammatical complexity. The fast-paced interactions might have been a barrier towards noticing of errors and providing corrective feedback. In addition, these findings may reaffirm contentions by Schegloff, Jefferson, and Sacks (1977) that other-
correction (as opposed to self-correction) may be embarrassing to the
interlocutors and does not provide members of the conversation with equal status
while participating in the discourse. Not reaching statistical significance may be
also in line with Kern’s (1995) assertion that grammatical accuracy suffers as a
result of synchronous discussions being its own discourse. It may also be due to
increased language production that occurred in the text-based chat, whereby the
stages of interlanguage are more evident (Pellettieri, 2000) and, as a result, more
errors are obvious. Thus, longitudinal studies should be conducted on the long-
term benefits of corrective feedback and repairs.

Discussion of Research Question 3

Both the frequency counts and incidences confirm that children did employ
a variety of corrective feedback strategies with age-matched peers (Oliver,
1995); however, statistical significance was not achieved in this study on the
relationship between error and feedback type, the focus of research Question 3.
When examining data on the incidences of error and corrective feedback types,
there were not any errors that specifically elicit a certain type of feedback.
However, when reviewing the analysis of frequency counts, the usage of L1
received the least amount of corrective feedback, with only 2% allocated to
explicit correction, whereas lexical errors received the highest proportion (42%)
of overall corrective feedback moves. The least amount of corrective feedback
moves were in negotiation of form, and the least amount of errors that received
feedback were in usage of L1. This differs with Morris’ (2005) study, where all
usage of L1 received corrective feedback. Recasts accounted for only 23%. This
figure is much lower than in other studies. In particular, Lyster and Ranta (1997) found that the most frequent of all corrective feedback moves were recasts, accounting for almost 77% of all corrective feedback moves.

Furthermore, learners were more likely to use explicit correction (42%) than recasts, negotiation of form, or emergent request for feedback. Lyster and Ranta (1997) posit that a key indicator to the success of negotiation and types of feedback in relation to error type is the learner’s proficiency level. However, within the current study, Grade 7 as opposed to Grade 11, had the most amount of corrective feedback and was the most diverse. Upon further examination, explicit correction was the most frequent in Grade 7. Possible explanations might include students’ eagerness to find errors within dyad members conversations or, as Oliver (1995) points out, that children are greater risk-takers. Therefore, the larger amount of corrective feedback to errors might be due to the learners’ attempt to use the language more, but also to challenge their dyads by providing both implicit and explicit corrective feedback. Overall corrective feedback patterns in relation to error type might be attributed to the particular language of communicating in English as a foreign language with Slovene L1 participants; however arguments can also be made that learner errors within this study reflect the interlanguage processes, which are more evident within synchronous text communications. Furthermore, the discourse patterns may be influenced by the developmental levels, social readiness, and/or psychological differences of participants.
Discussion of Qualitative Results

This study is exploratory in terms of characteristics of learners with special needs (SN), the focus of Research Question 4. CA was used to define initially such interactional characteristics. IRF moves and adjacency pairs were the method used within CA (Markee, 2000) to examine SN learners. As IRF moves reveal the structure of the language and adjacency pairs reveal the function of the language, the preliminary results elicit further questions concerning SN learners’ engagement within conversations. The preliminary analysis revealed that SN learners engaged quite cautiously in the conversations. The few instances in which learners with special needs were engaged were limited to invitations. It is only when they were explicitly asked or requested to reply that they responded. Moreover, the overall language was simple in terms of grammar and lexical choice. As relatively simple complexity of grammatical and lexical items was noticed in the participant’s turns, a follow-up Flesch-Kincaid Grade Level and Flesch-Kincaid Readability Ease within Microsoft Word was calculated. According to Microsoft’s Office 2003 Word Help (Microsoft Office, 2003), the Flesch-Kincaid Grade Level calculates the U.S. grade level, where the derived score corresponds to the grade level. For example, a score of 7.2 is equivalent to writing level of the 7th grade. Furthermore, the Flesch-Kincaid Readability Ease score was calculated to determine the readability ease of the turns. The higher the readability ease scores the greater the readability ease. A score of 90-100 would be readable to upper elementary schools, a score of 60-70 to upper middle school students, and results with 0-30 within the college graduate range. Even
though the scores are strictly quantitative in that they measure length and number of words, syllables, sentences, and grammatical structure, they do provide a general idea of the readability of turns. However, it is important to note that these scales are normed on native English speakers and do not represent measurement for non-native speakers (Schuyler, 1982).

The readability ease scores were however, used to create a general idea of any differences within the participants’ grade level and, as such, are not generalizable. All turns with SN learners were calculated and analyzed. The dyad members, where both learners with special needs were paired together, resulted in a zero score for the grade level. The learner with special needs who was paired with a high learner resulted in a joint 88.1 readability ease score and a 2.8 grade level score. With all three learners the simplicity of the language was confirmed with these scores. Such results correspond to Kretschmer and Kretschmer’s (1998) contention that learners who are cognitively and/or neurologically impaired may not be able to acquire the syntactic, pragmatic, and lexical forms of words, which might have been noticeable even more within a text-based synchronous environment. On the other hand, the learners through their semi-structured interviews with the researcher, believe that their language ability, writing barrier, lack of oral interaction, and quick pace of the task all were prohibitive of interacting more actively in the conversation. In addition, Pienemann and Johnston (1987) also posit that difficulty of target language development might not be because of grammatical difficulty, but because of difficulty with short-term memory. The researcher followed up with the instructor
of the three special need learners asking whether the students had difficulty in retaining short-term information. The instructor did confirm that all three of the learners with special needs had difficulties and needed additional assistance with EFL.

Overall, students had a positive attitude while working on the task and using the medium, as was expressed frequently throughout the interview transcripts by high learners, low learners, and learners with special needs. However, all contended that they missed the oral communication with their peers. In addition, they all were unsure of how the conversational chat was understood by their partner, as well as how the peer perceived any feedback that was given. In addition, there was an indication that dyad members were not listening to each other, as revealed by comments that they wanted to complete the task as quickly as possible, which resulted in not being attentive to all of their partner's posts. Furthermore, they commented that the language proficiency of their partner was also a factor in that it was not understandable either because the language was extremely poor or too advanced to be comprehensible. This suggests that the decreased number in turns, simplicity of the language, and low frequency of corrective feedback might have been due to the higher level of comprehensible input received (Krashen, 1985) or incorrect input, in terms of stages of interlanguage development. If we are to view this from a different theoretical lens, more specifically, from the perspective of Vygotsy’s (1934/1987) theory of learning and development, we could speculate that the participants were not able to reach intersubjectivity. This does not confirm Wells’ (1999) contention that the
non-attainment of intersubjectivity promotes a type of dialogic engagement leading to regulation.

Furthermore, the learner’s perceived ability of the language also was an influential factor on the production of language. As recounted by one learner with special needs, the reason for not providing feedback is his perceived lack of knowledge. Also, the act of writing versus speaking seemed to be another intertwining barrier among all learners, whereas some perceive the physical act of writing to differ drastically from oral conversation, some perceive the task of writing to be more cognitive, and others considering speaking to be much easier than writing. Also, based on the qualitative analysis of the interview data, it could be hypothesized that the special need learners focused more on the specific task of writing than on the actual task of completing the task. It is possible that they did not provide corrective feedback due to the effect of the discourse type (Kelm, 1992). By examining the whole data set, much of the conversation contained incomplete utterances, colloquialisms, and simplified syntactic structure. Student perception of which errors to correct might have been influenced by the text-based chat. Moreover, students reported that they use chat mainly for informal conversations in the L1 and rarely in the L2 or in the classroom. Therefore, usage of L1 might not have been perceived as a grave error because these errors provided low incidence of corrective feedback, whereas grammatical or multiple errors might have been perceived as representing more serious errors. To preclude some of these barriers, future research should examine oral versus text-based online synchronous conversations to examine corrective feedback.
increase in relation to language proficiency and effect of long-term learner uptake.

It is important to note that the interviewees were engaged in conversation and, therefore, not all issues might have been touched upon in each interview. Not all topics or themes might have emerged as a result of task completion during the interviews. As such, a small number of students may discuss an issue, which may or may not emerge as being for a larger number or percentage of students (i.e., data saturation might not have been achieved).

Another important factor in coding and determining corrective feedback type is the notion of phantom adjacency pairs. A phantom adjacency pair is a response to a posting that might be perceived as replying to the previous response posted, but could also be intended to reply to a different post (Garcia & Jacobs, 1999), or it might have not have been a response, but more of a concurrence to the linguistic structure on which the learner is currently working. There could have been instances of phantom corrective feedback moves, within corrective feedback moves identified in this study, where the implicit feedback provided could be intended as corrective feedback, but it could also provide a response to a previous post or post “in the making.” For example, in Extract 1 (see Adjacency Pair Extract 1), Learner A misspells the word ‘stomachache’, which is then corrected by Learner B. This feedback could be considered as implicit corrective feedback or as a recast, but it could also be considered as a phantom corrective feedback move in that Learner B did not respond to the error
or might not have even have read Learner A’s post, but used the correct spelling (or considered as 'post in the making').

Adjacency Pair Extract 1 Grade 7

Line 333 A 5 She has stomacheak
Line 334 A I write (da ga boli trebuh) good
Line 335 B 5 She has stomachache, and her mother takes her to the hospital.

In addition, Adjacency Pair Extract 2 might reveal a repair of the lexical error ‘stake’ in Line 639; however, the student might have repaired the utterance because she might have caused a typographical or spelling error, or might have just made a mistake. On the other hand, the error in Line 633 might have been recasted in Line 636 and repaired in Line 639.
Adjacency Pair Extract 2 Grade 10

Line 633  A  tuesday 3.00 mum wanted to take a rest, so
she took a nap while the stake was cooking in
the pan

Line 634  B  tell me the numbers please

Line 635  B  I THINK THE LAST NUMBER IS 5 do you
agree?

Line 636  B  yap, I was just thinking about it she left the
steak in the pan for a day

Line 637  A  10 and then 5

Line 638  B  i don/t know – you have this picture

Line 639  A  ok i agree – steak

Conversely, in Extract 3 Learner C misspells either ‘man’ or ‘mum’ and
Learner B corrects the error with explicit correction by providing the correct
spelling for ‘mum.’ However, Learner D was not sure if she perceived the error
correctly and in the third turn asks for further clarification on the correct lexical
item. Here, it is evident that corrective feedback was provided.

Adjacency Pair Extract 3

Line 317  C  on picture 4 the mam is making the girl breakfast

Line 318  D  Mam is spelled mum

Line 319  D  Or did you mean man?

Implicit types of feedback, more specifically recasts, are more difficult to
determine and code using text-based synchronous conversations. Consequently,
existing and future research should consider the importance of coding and
possible avenues of explanation. Even though inter-raters were included to prevent inaccurate interpretation of data, the existence of phantom adjacency pairs might have been over-looked and therefore might affect conclusions made in the present research. Additionally, but on the flip side of the coin, the manner in which dyads within groups or whole class events are being coded and then analyzed using inferential statistics might cause a serious violation of the independence assumption, thereby causing existing statistical findings from existent literature possibly to change.

Future Research

Future research also should take into account the teacher’s instructional style. If a teacher’s pedagogical approach is in a traditional sense as ‘provider of knowledge’ (Berry, 1981) wherein typical communication in the class is providing traditional questions and students just providing answers (Tharp & Gallimore, 1988), this might have influenced the type of communication that learners are accustomed to in the foreign language. Therefore, it would be useful to examine communication between teacher and students and then dyad member’s communicative interaction through a dialogic tradition, as proposed by Johnson (2004). The dialogic tradition takes into consideration the dynamic roles of social contexts, individuality, intentionality, and the sociocultural, historical, and institutional backgrounds of the individual involved in cognitive growth based on Vygotsky’s (1934/1987) sociocultural theory and Bakhtin’s dialogized heteroglossia (Bakhtin, 1981)--more specifically, within an activity theory perspective (i.e. Engeström, 1987; Lantolf & Pavlenko, 2001; Leont‘ev, 1981;
Wells, 1999, 2002), which studies dialogic inquiry (Wells, 1999) among learners. In addition, further research should examine the pedagogy strategies used by different teachers. Lyster and Mori (2006) argue that instructional activities and feedback should differ based on the goals of the foreign language classroom. Therefore, further researcher should examine learner-learner interactions within classrooms that are predominantly form-focused with communicative activities and meaning focused classrooms with form-focused instructional activities.

Possible reasons for not achieving a higher amount of corrective feedback also might have been due to the dyad types. Varonis and Gass (1985) reported that within their study, the highest amount of negotiation occurred among those dyads that differed in both language and proficiency compared to those dyads that were more similar or included a native speaker. In addition, the results showed that there were instances when dyad members did not allow other members to participate. Therefore, future research should examine the role of the dyad member, socio-cultural factor, learner’s strategies, communication styles, proficiency, developmental, and social levels on corrective feedback moves. Also, the role of a native speaker as a learner dyad should be included because it is hypothesized by the researcher that the native speaker does not need to concentrate on grammatical structures and higher cognitive functions in the act of writing and spelling.

Another factor is the task. Even though the literature suggests jigsaw puzzles as an appropriate task for negotiation of meaning (Pellettieri, 2000), it might not always be conducive. Gass and Varonis (1985) did not find any
difference in the two-way task, but Long (1989) contends that there is more productivity with two-way tasks. Based on participant feedback, many were focused on merely completing the task than on grammatical correctness or appropriately conveying the message to their dyad partner. Corrective feedback might have been higher if there was a teacher or native speaker involved, as was the case in Kelm’s (1992) observational study. As such, future areas of research should include the type of task to be used for online discourse, as well as in the area of interlanguage pragmatics.

Additional research is warranted in terms of oral versus text-based chat. The transcripts of the text-based data revealed that discourse within text-based chat lies between verbal and email exchanges (Iwasaki & Oliver, 2003) or is known as speak-writing (Erben, 1999). It is not evident whether this type of discourse provides sufficient ground for corrective feedback and its facilitation towards language acquisition. In addition, due to the fast-paced tempo of text-based chat, further research is recommended on learners with special educational needs, more specifically with regard to proficiency of dyad type, as well as differentiating general communication or basic interpersonal communication skills (BICS) with writing for communicative purposes or cognitive academic language proficiency (CALP).

Implications and Recommendations

Researchers within the interactionist field have argued that learners who receive negative feedback to their ill-targeted utterances have their language development facilitated and, as such, benefit from these interactions. If research
finds that within classroom interactions, negative feedback does indeed promote second language development, then it is worthy to investigate the interactional characteristics that learners have with teachers and other learners. This dissertation hopes to add to this line of research within the field of second language acquisition and negative feedback. Researchers who have investigated corrective feedback within synchronous environments have examined it from NS-NNS (Iwaskai & Oliver, 2003), NNS-NNS (Pellettieri, 2000) and between child-child interactions (Morris, 2005), each of which is significant for the purposes of this study (see Figure 1). In addition, research studies have been carried out within French immersion settings (Chaudron, 1977, 1986; Lyster, 1998a; Lyster & Ranta, 1997) or with teachers and university students (Blake, 2000; Castaneda, 2005; Iwasaki & Oliver, 2003; Pellettieri, 2000). This study contributes to the gap in research of computer-mediated-communication studies and corrective feedback moves with adolescent learners of English-as-a-foreign-language with or without special educational needs. Furthermore, additional insights can be generated on the facilitative role of corrective feedback within instructional contexts. The results showed no statistically significant findings with respect to the type of corrective feedback or the relationship of error to corrective feedback. However, the study did not touch upon learner’s noticing or repairing their utterances. It does provide initial information and exploratory research on the negotiation process among peers with or without special needs and the inclusion of similar tasks and discourse methods within FL classrooms.
If synchronous communication, more specifically, text-based chat, is used for grammatical tasks situated within a context-embedded activity, teachers should be cautious about the amount of attention students place on linguistic form and structure. Both the qualitative and quantitative findings revealed that students tend to focus on the meaning and completion of task, rather than on structural issues, such as grammatical, lexical, or spelling errors (i.e., focus on form). However, because of the sample size, it is not clear the extent to which the present findings can be generalized. Nevertheless, perhaps the most significant pedagogical implication to be drawn, based on the results of the current study, is that instructors of foreign languages should be cautious when pairing learners to undertake grammatical tasks. More research needs to be undertaken in understanding how technology improves the quality of language learning and its facilitative role of noticing gaps in knowledge, attention towards linguistic inaccuracy, and future implications of this new discourse (i.e., speak-writing). In addition, long-term research is warranted in examining whether corrective feedback types lead to L2 acquisition in the long term (i.e., a longitudinal study).

Furthermore, it is recommended that teachers share their corrective feedback types with their language students. Specifically, that teacher’s educate students on the types of implicit feedback. Students, especially elementary students might not be aware that implicit types of feedback exist. It might be conducive for teachers to use Kelm’s (1992) suggestion to print out transcripts of their text-based conversations so that both the learner and instructor may review. In such a manner, students then do not overlook their errors and are provided
with an opportunity to be aware of target language utterances (Beauvois, 1992; Kelm, 1992). In addition, archives of such transcripts also might shed light on learners’ language development in the long term. As such, longitudinal studies including such techniques with corrective feedback and learner repair may reveal the progression of language learning in process.

This study is explanatory and the results do not permit any definite conclusions on the usage of corrective feedback in the process of acquiring a language. As such, the replications of this research study are needed, taking into account statistical assumptions needed to undertake inferential statistical analysis, which often has not been the case, especially within pair-work research.

**Limitations**

Both external and internal validity threats limit the findings of this study. Onwuegbuzie’s (2003) framework for possible external and internal validity threats to a study were used as a guide in this study. Possible threats to external validity were:

- Ecological validity, which might have had a possible threat because the participants were limited to learners of English-as-a-foreign-language from a specific geographic area in Europe;
- Population validity, because the sample size from the combined schools may not have been large enough to justify generalizations beyond the sample;
- Temporal validity, because of the limited time of data collection; and
- Reactive arrangement, as a result of participants’ reactions to being aware that they are participating in the study.
Further, there were several threats to internal validity of the findings, including the following:

- **Data Saturation Point**: The fact that only one collection time was used, due to budgetary and time constraints, may have yielded data that did not reach data saturation point;
- **Differential selection of participants**, wherein the composition of the dyads might have affected the findings;
- **Researcher bias** also was a threat that limited the results, in which certain categories might have been constructed or collapsed based on personal beliefs of the researcher (i.e., illusory correlation); and
- **Finally**, instrumentation threat was a threat pertaining to the reliability and validity of the coded data, although the high inter-rater reliability obtained suggested that this threat was minimal.

Finally, the validity of the qualitative findings was considered in terms of (a) descriptive validity, (b) interpretive validity, and (c) theoretical validity. To obtain descriptive validity, researcher triangulation was used. The researcher of the current study used both questionnaires with all participants, as well as, follow up interviews with 5% of the participants, which included the sampling of participants with extreme scores, including special need learners. Additionally, personal notes written in a journal during data collection were maintained and analyzed throughout the research process. Descriptive validity was maximized by presenting student accounts with direct quotes stemming from the interview data.
Finally, interpretive and theoretical validity were addressed by including two other peers to review the data, interpretation, and conclusions that emerged.

**Conclusion**

This study examined the gap in research within interactionist studies in terms of corrective feedback with adolescent learners of English-as-a-foreign-language using computer-mediated communication, more specifically, synchronous online communication. The study also included learners with special needs as to provide initial research with special populations.

Corrective feedback types that were found in previous research also were found in this study. More specifically, learners did provide explicit corrections, recasts, negotiation of form, and an emergent category. The study did not reveal any statistically significant results; however, other important issues emerged—more specifically, the following findings: (a) an emergent category entitled request for feedback emerged; (b) the notion of phantom adjacency pairs within coding was discussed; (c) the importance of appropriate statistical analysis procedures within research with dyad members were highlighted; and (d) learners with special needs partake in conversational interactions and have a limited focus on developing further, that is, more in-depth conversation.

The amount of corrective feedback in relation to error types was less than expected, suggesting that proficiency levels, language background, task type, text-based discourse mode, social, psychological, and cognitive development might all be factors influencing the results of the study. In addition, the impact of foreign language methodology and pedagogy style, as well as types of
communication students are accustomed to in the foreign language may all have influences on interactions among interlocutors. Most importantly, the type of discourse, which is neither strictly an oral or written genre, also might not have been contributing towards sustainability and usability of corrective feedback. The results of the study show that further research, more specifically, longitudinal integrative research is needed to build on the present study. Longitudinal studies are warranted in examining whether corrective feedback types lead to L2 acquisition over time.

If research does indeed reveal, that learners progress in their language developed based on their active participation and negotiation, then it is important that with research, we strive to not only understand, provide, and assist, but, most importantly, to involve language learners in their development. It is only through further inquiries using various theoretical insights that greater knowledge of the specific needs of learners be attained and the path of language acquisition be understood. Through these means appropriate tools and support will be mediated towards involving all students to interact with other cultural and linguistic individuals, regardless of their individual needs.

"Tell me and I will forget; show me and I may remember; involve me and I will understand." Aristotle
LIST OF REFERENCES


310


325


Appendix A
<table>
<thead>
<tr>
<th>Module</th>
<th>English today</th>
<th>English after restructuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module A</td>
<td>First foreign language: continuous learning from elementary school. (4 years elementary school + 4 years general secondary education).</td>
<td>First foreign language: continuous learning 6 years elementary school + 4 years general secondary school).</td>
</tr>
<tr>
<td></td>
<td>Total: 8 years</td>
<td>Total: 10 years.</td>
</tr>
<tr>
<td></td>
<td>Total: 4 years</td>
<td>Total: 4 years</td>
</tr>
<tr>
<td>Module C</td>
<td>Second foreign language: continuous learning (in elementary school as a required elective for 3 years + 4 years general secondary school).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total: 7 years</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C
Task.

Appendix D
IRB Approval for Pilot Study

EXEMPTION CERTIFICATION

MEMO: Annmarie G. Zoran, Department of Secondary Education, EDU 162

FROM: Institutional Review Board, PGS/cas

SUBJECT: Exemption Certification for Protocol No. 103294F

DATE: February 11, 2005

On January 20, 2005, it was determined that your project entitled, "CALLing all learners: A Pilot Study of EFL learner-learner corrective feedback patterns within on-line synchronous environments", meets federal criteria to qualify as an exempt study under 45CFR46.101(b) category four (4).

Because the study has been certified as exempt, you will not be required to complete continuation or final review reports. However, it is your responsibility to notify the IRB prior to making any changes to the study. Please note that changes made to an exempt protocol may disqualify it from exempt status and may require an expedited or full review.

All research, regardless of the type of IRB review received, must be conducted in a manner that is consistent with the ethical principles of your profession and the federal guidelines for the protection of human subjects. As principal investigator, it is your responsibility to ensure subjects' rights and welfare are protected during the execution of this study.

Research investigators are required to keep all research related materials, including all IRB correspondence for no less than three (3) years. If at the end of 3 years, the data is no longer needed it should be destroyed. However, if data are kept after 3 years of study completion, please report to the IRB how you will keep data confidential.

The Division of Research Compliance will hold your exemption application for five years. At least 90 days before the end of the fifth year, you will be notified that your file will be closed. If your project is still ongoing, you will need to contact the Division of Research Compliance upon receipt of that letter and follow the instructions for completing a new exemption application. It is, therefore, important that you keep your address current with the Division of Research Compliance. If you have any questions, please contact the Division of Research Compliance "IRB Administrative Offices" at 813-974-9343.

pc: Carine Feyten, Ph.D.
Appendix E
IRB Approval for Present Study

April 13, 2005

Anmarie Gorenc-Zoran
College of Education
EDU 162

RE: Approved Application for Initial Review
IRB#: 103530F
Title: CALLing All Learners: An Exploratory Integrative Research Study of EFL Learner-Learner Corrective Feedback Patterns Within On-Line Synchronous Environments
Approval Period: 04/12/2005 to 04/11/2006

Dear Ms. Gorenc-Zoran:

On April 12, 2005, Institutional Review Board (IRB) reviewed and APPROVED your Application for Initial Review for the above noted protocol. It was the determination of the IRB that your study qualified for expedited review based on the federal expedited category number six (6) and category seven (7). Approval is granted for the period indicated above.

Please note, if applicable, the enclosed informed consent/assent documents are valid during the period indicated by the official, IRB-Approval stamp located on page one of the form. Valid consent must be documented on a copy of the most recently IRB-approved consent form. Make copies from the enclosed original.

Please reference the above IRB protocol number in all correspondence regarding this protocol with the IRB or the Division of Research Compliance. In addition, we have enclosed an Institutional Review Board (IRB) Quick Reference Guide providing guidelines and resources to assist you in meeting your responsibilities in the conduct of human subjects research. Please read this guide carefully. It is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to the Human Research Protections Program. If you have any questions regarding this matter, please call 813-974-9343.

Sincerely,

[Signature]

Paul G. Stiles, J.D., Ph.D.
USF Institutional Review Board

Enclosures: (If applicable) IRB-Approved, Stamped Informed Consent/Assent Document(s)
IRB Quick Reference Guide
Cc: Christy A. Stephens, USF IRB Professional Staff
Dr. Erben
Appendix F
IRB Course Completion

CITI Course in The Protection of Human Research Subjects

Print This Report

Wednesday, December 22, 2020

CITI Course Completion Record for Annmarie Zoran

To whom it may concern:


Learner Institution: University of South Florida

Learner Group: Social / Behavioral Investigators and Key Personnel

Learner Group Description:

- Department: Secondary Education
- Which course do you plan to take?: Social & Behavioral Investigator Course Only
- Role in human subjects research: Principal Investigator
- Email: gorenzo@email.usf.edu
- Office Phone: (813)974-3563

The Required Modules for Social / Behavioral Investigators and Key Personnel are:

<table>
<thead>
<tr>
<th>Module</th>
<th>Date completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refresher Course 1.01 Introduction</td>
<td>12/22/04</td>
</tr>
<tr>
<td>History and Ethical Principles</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Regulations and Process, Part 1</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Regulations and Process, Part 2</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Informed Consent</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Social &amp; Behavioral Research (SBR)</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Records-Based Research, Part 1</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Records-Based Research, Part 2</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Records-Based Research, Part 3</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Genetics Research, Part 1</td>
<td>12/22/04</td>
</tr>
<tr>
<td>Genetics Research, Part 2</td>
<td>12/22/04</td>
</tr>
</tbody>
</table>

https://www.citiprogram.org/members/courserender/am/certificate.asp?strKeyID=0C4773... 12/22/04
Appendix F
IRB Course Completion (continued)

Vulnerable Subjects-Prisoners, Part 1 12/22/04
Vulnerable Subjects-Prisoners, Part 2 12/22/04
Studies With Minors, Part 1 12/22/04
Studies With Minors, Part 2 12/22/04
Studies With Minors, Part 3 12/22/04
Studies with Pregnant Women and Fetuses, Part 1 12/22/04
Studies with Pregnant Women and Fetuses, Part 2 12/22/04
Group Harms: Research with Culturally or Medically Vulnerable Groups 12/22/04
Conflicts of Interest in Research Involving Human Subjects 12/22/04

Additional optional modules completed: completec

For this Completion Report to be valid, the learner listed above must be affiliated with a participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

CR# 62776
Appendix G
IRB Core Course Completion

Completion Certificate

This is to certify that

Annmarie Zoran

has completed the Human Participants Protection Education for Research Teams online course, sponsored by the National Institutes of Health (NIH), on 12/02/2005.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

National Institutes of Health
http://www.nih.gov

341
Appendix H
Priporočilo

Annmarie Gorenc Zoran nas je zaprosila za priporočilo pri kontaktiranju s šolami in zbiranju podatkov, potrebnih za dokončanje raziskave z naslovom "Adolescent EFL Learner – Learner Interactions in an Online Asynchronous Environment".

Annmarie Gorenc Zoran je rojena v državi Illinois v Ameriki in trenutno končuje doktorski študi na Univerzi Južna Florida (College of Education), jeseni pa se bo preselila v Gorenjsko in se bodo veselila z šmarjaškim Toplica:

Kandidatka bo v raziskavi ugotavljala vrsto in način interakcije ter evidentiral "feedback" pri učenju angleškega jezika z uporabo konferenčnega orodja na spletni strani. Rezultati raziskave bodo v pomoč pri razvoju metod in interakcij pri učenceh. Na področju učenja tujih jezikov bodo omogočali primerjavo z drugimi državami.

Učenci oziroma dijaki vaše šole bodo izpolnili kratak vprašalnik ter v paru eno šolsko uro reševali nalogo z uporabo spletnih strani. Imena učencev bodo spremenjena v identifikacijske številke in znana je raziskovalci.

Zbrani podatki bodo služili zgolj v strokovno raziskovalne namene.

S spoštovanjem

Pripravil:
dr. Franc Cankar

Zavod Republike Slovenije za šolstvo
Poljensec cesta 28
1000 Ljubljana
T: 01/30 05 100
F 01/30 05 199
S www.zrss.si

Alojz Pluško
DIREKTOR

343
Appendix I
Student Background Questionnaire

Thank you for completing this questionnaire

Demographics:

1. **Ime** (Name): _____________________

2. **Spol** (Gender): ____moški (male) ____ženska (Female)

3. **Starost** (Age): __________

4. **Šola** (School): _________________

5. S križcem označi vrsto šole, ki jo obiskuješ (Check appropriate box)
   - Osemletka (Eight Year Elementary School)
   - Devetletka (Nine Year Elementary School)
   - Gimnazija (General High School)

6. Označi kateri razred obiskuješ
   - 5. razred (class 5)
   - 6. razred (class 6)
   - 7. razred (class 7)
   - 8. razred (class 8)
   - 9. razred (class 9)
   - 10. razred (class 10)
   - 11. razred (class 11)
   - 12. razred (class 12)

Background

7. **Ali si kdaj ponavljal razred?** (Did you ever repeat a grade?)
   Da (Yes) _____ (Ne) No______

   7.a Če si odgovoril z ‘da’, kakšen je vzrok, da si ponavljali? (If yes, please note reason for repeating grade?)

____________________________________________________________________________________
____________________________________________________________________________________
Appendix I

Student Background Questionnaire (continued)

8. Ali imaš morda kakšne posebne težave (učne ali razvojne), ki te ovirajo pri učenju? (Do you have any special circumstances (medical) that makes it more difficult to learn?)

_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________

9. Materin Jezik (Native Language)

________________________________________

Foreign Language

10. Ali govoriš oz. se učiš kakšen drugi tuji jezik? (Do you speak or study other language/s?) Da (Yes) _____   (Ne) No______


(If yes, specify which language/s and how would you grade your ability in each language. For example: I can read in Italian; I can read and write in German; I can speak, but not fluently in Chinese; I can speak fluently in French; etc.)
Appendix I

Student Background Questionnaire (continued)

11. Kako dolgo se že učis angleščino? (How long have you been studying English?)

______________________________________________________________

12. Zakaj se učiš angleščino? (Why are you studying English?)

______________________________________________________________

13. Ali si kdaj obiskal/a angleško govorečo državo? (Have you visited a English speaking country?)
Da (Yes) ____ Ne (No) ____

13a. Ce si odgovoril/a z da, navedi katero državo si obiskoval/a? Kdaj?
Za koliko časa? (If yes, which country? When? For how long?)

______________________________________________________________
______________________________________________________________
______________________________________________________________

14. Ali imaš stike z angleško govorečimi ljudmi izven razreda? (Do you have any contact with native speakers of English outside the classroom?)
Da (Yes) ____ Ne (No) ____

14a. Ce si odgovoril z ‘da’, kolikokrat? (If yes, how frequently?)
Pogosto (Often) ____ Občasno (Occasionally) ____ Redko (Rarely) ____
Appendix I

Student Background Questionnaire (continued)

**Technology**

15. **Ali uporabljаш računalnik?** (Do you use a computer) Da (Yes) __ Ne (No) __

16. Če si odgovoril/a z ‘da’, koliko časa že uporabljаш računalnik? (How long have you been using computers?) ______ (leta/years)

17. **Za kakšne namene uporabljаш računalnik? Označi vse primerne odgovore** (What do you use computers for? Check as many as applicable):

-___ Elektronska Pošta (E-mail)
-___ Pisanje (Word-processing -Microsoft Word, WordPerfect, etc.)
-___ Igre (Games)
-___ Deskanje po spletu (Browsing the Internet -Internet Explorer, Netscape, etc.)
-___ Programiranje (Programming)
-___ Elektronski ‘chat’ pogovori (Online Chat -IRC, Yahoo, MSN Instant messenger, etc.)
-___ Forumi (Electronic Bulletin/Discussion Boards)
-___ Ostalo, prosim navedi. (Others, please specify): __________________________

18. **Ali se dobro počutiš pri uporabi računalnika?** (How comfortable are you working with computers?)

-___ Zelo dobro (Very comfortable)
-___ Dokaj dobro (Somewhat comfortable)
-___ Nezadovoljen (Uncomfortable)
-___ Zelo nezadovoljen (Very uncomfortable)

19. **Ali kdaj uporabljаш forume pri pouku?** (Do you use electronic bulletin/discussion boards in your classes?)

Da (Yes) _____ Ne (No) _____
Appendix I

Student Background Questionnaire (continued)

19a. Če ‘da’, kolikokrat na teden (If yes, how frequently? ________ (krat na teden/times per week)

20. Ali uporabljаш forums (oz. discussion boards) za osebno uporabo? (Do you use electronic bulletin/discussion boards for personal use?)
   Da (Yes) _____ Ne (No) _____

20a. Če ‘da’, kolikokrat? (If yes, how frequently?) ________ (krat na teden/times per week)

21. Ali uporabljаш spletno pogovorne ‘chat’ programe, kot so IRC, Messenger, Yahoo, itd. pri pouku? (Do you use chat programs (AOL, Yahoo, MSN Instant messenger, etc.) in your classes?)
   Da (Yes) _____ Ne (No) _____

21a. Če ‘da’, kolikokrat? If yes, how frequently? ________ (krat na teden/times per week)

22a. Ali uporabljаш spletno pogovorne ‘chat’ programe kot so IRC, Messenger, Yahoo za osebno uporabo? (Do you use chat programs (AOL, Yahoo, MSN Instant messenger, etc.) for personal use?)
   Da (Yes) _____ Ne (No) _____

22a. Če da, kolikokrat? (If yes, how frequently?) ________ (krat na teden/times per week)

Najlepsa hvala!

This questionnaire was adapted from O'Relly (1999), p. 157
Appendix J
Codebook

Corrective Feedback Coding Scheme
Interaction Analysis Codebook (adapted from Castañeda, 2005)

Unit of Data Collection: The unit of analysis for this research study is the error treatment sequence. The error treatment sequence refers to the learner's initial turn containing an error (P1), the dyad member's response (P2) to the error, and the learner's reaction or response to the correction (P1). If a learner is identified with a special need the notation in the codebook is indicated with an 's' at the end of the abbreviation. For example: P1S or P2S.

Peer (initial turn with error(P1) → Learner response (P2) → Reaction/Response (P1)

Error: An error is defined as an ill-formed language utterance, an unacceptable utterance in the target language. The various types of errors below served as the a priori categories in the present study. New varieties of errors were not found and therefore a new emergent theme or category was not warranted.

E-01 Grammatical: Grammatical errors produce a grammatical construction that violates the grammar of the target language. Inappropriate word order or usage of articles and syntactical errors also are coded as a grammatical error.

E-02 Lexical: Lexical errors are the use of the wrong word or missing lexical item in an utterance (i.e. missing lexical items such as prepositions, nouns, adjectives; however, not including articles as articles are functional not lexical free morphemes and their usage is related to rule application in an utterance. Inaccurate, imprecise, or inappropriate choices of lexical items and non-target derivations of nouns, verbs, adverbs, and adjectives constitute examples of lexical errors.

E-03 Orthographic Conventions: These types of errors include omissions of accent marks and letters unique to the English alphabet. These include : q, w, x, y. In addition, errors may include additions of letters unique to the Slovenian alphabet. These include č, ř, ž.

E-03a: Orthographicons: These also include emoticons, exaggerations, and abbreviations. These instances are coded under orthographic conventions, but were not counted as errors. Punctuation and/or capitalization were not coded as an error and were ignored; namely due to the type of interaction, which is neither a written nor an oral format, the Appendix J
Appendix J

Codebook (continued)

frequency of capitalization and punctuation errors in almost every turn, and in none of the instances did the punctuation or capitalization receive any type of corrective feedback.

E-04 Typographical and Spelling: A typographical error is one made while inputting text via a keyboard, the error is made despite the user knowing the spelling of the word. This usually results from the person’s inexperience using a keyboard, from rushing, from not paying attention, or carelessness. A spelling error is one made when forming words with letters and the letters are not put in the acceptable order. In this study, it is impossible to know whether the learner made a typographical error or spelling error and therefore these were put in the same category. It should also be noted that omission or addition of specific orthographic letters (under “Orthographic Conventions”) were combined with the typographical and spelling category, as it was difficult to determine if an omission or addition of orthographic convention were not really typographical or spelling errors.

E-05 Unsolicited use of L1: Use of the native language (L1) is not an error per se, but it is interesting to examine at which points students turn to L1 and their peers reaction to the unsolicited use of the L1. Usage of L1 was counted in the error turns.

E-06 Multiple: When more than one type of error occurs in a student turn (for example, lexical and grammatical) these were coded as multiple.

E-07 Emergent: An emergent error category was not found.

X-L1: Content feedback with L1: When a turn includes a content question that includes an L1 term for clarification (e.g. “how do you say POJDI SPAT”), this was not coded as an error in relation to the corrective feedback, but to the content/question feedback. The L1 used was for purposes of content clarification. Therefore, only the specific feedback to the content/question were coded, if there as an error.

X-L3: Usage of L3: when a turn contains utterances with the usage of a third language, which is neither English or Slovene. Within this category, utterance with L3 or the third language being studied by the participants were included, but not included in the overall data set. These were counted as lexical error, but were separately coded to view instances of L3 usage.
Appendix J

Codebook (continued)

Corrective Feedback: Corrective feedback is defined as a response to a learner error made by the dyad member that provides the learner with information about what is acceptable and unacceptable in the target language. Using Lyster and Ranta’s (1997) findings of the various types of corrective feedback, the following a priori categories for corrective feedback were used in the present study. A different variety of corrective feedback was found, namely due to the nature of discourse taking place in a synchronous environment as well as the interaction among peers. This constituted the emergent theme or category.

| Peer (initial turn with error(P1) ⇒ Learner response (P2) ⇒ Reaction/Response (P1) |

If a learner is special needs the notation indicate an ‘s’ at the end of the abbreviation. For example: P1S or P2S.

CF-O1 Explicit correction: This is the explicit (direct) provision of the correct form.

CF-02 Recasts: The learner dyad member’s (P2) reformulation of all or part of a learner's (P1) utterance excluding the error is a recast.

CF-03 Negotiation of form: Negotiation of form was used following Lyster and Ranta’s (1997) definition of negotiation of form. Elicitation, metalinguistic, clarification request, and repetition are types of corrective feedback that were compressed into the single category of "negotiation of form". These feedback types can elicit or lead the learner to repair. In contrast, as Lyster and Ranta (1997) found, recasts and explicit correction lead to low rates of student repair because they already provide the learner with the correct form or forms. Elicitation, metalinguistic, clarification request, and repetition types of corrective feedback can, on the other hand lead to student generated repair and can be considered "negotiation of form.”

CF-04 Clarification requests: These indicate to the learner (P1) either that the utterance is not understood by the dyad member (P2) or that the utterance is ill-formed in some way or that a repetition or a reformulation is required on the part of the learner (P1).

CF-05 Metalinguistic feedback: Metalinguistic feedback are comments that indicate that there is an error somewhere. These comments can be in the form of grammatical metalanguage or can point to the nature of the error.
Appendix J

Codebook (continued)

CF-06 Elicitation: Elicitation is when, the dyad member (P2) directly elicits the correct form from the learner (P1). These elicitations can come in various forms. The dyad member (P2) allows the learner to fill in the blank, may use questions to elicit the correct form, or can ask the learner (P1) to reformulate the utterance.

CF-07 Repetition: Whenever, a dyad member (P2) repeats the learner’s (P1) erroneous utterance in isolation this is defined as a repetition.

CF-08 Emergent-Feedback Request: Feedback request is when, a student requests feedback from their peer by using either the L1 or L2. For example:

    mum took the girl to the emergency room because she had a stomackacke (how do you spell this?)

X-SC: Self-correction: Self-correction is when students self-identify their error within the same or within their immediate turn after the error. It is coded separately, because it doesn’t belong within the scope of corrective feedback as other initiated, but within themselves.
Appendix K
Navodila

Pred vama je 10 slik nekega dogodka. Ti imas polovic slik tega dogodka in tvoj partner ima drugo polovico. Tvoja naloga je, da postaviš slike v pravilni vrstni red. Zapomni si, da ti imas polovico zgodbe in tvoj partner ima drugo polovico. Sodeluj s svojim partnerjem, tako da ugotovita pravilni vrstni red zgodbe in nato skupaj sestavita pravilni vrstni red o dogajanju na slikah. Torej, s partnerjem preko konferenčnega orodja MSN:

1. Opišita slike
2. Slike postavita v pravilni vrstni red glede na dogajanju na slikah (1, 2, 3, 4, 5, 6, 7, 8, 9, in 10)
3. Prilepita (copy/paste) celoten pogovor v WORD (ali textpad)
4. Dvignita roko, ko končata.

Zapomni si:

1. Uporabljaj samo angleški jezik.
2. Ne sprašuj soseda ali profesorja.
3. Ne uporabljaj slovarja.
5. Vprašaj partnerja če kaj ne veš
6. Obvesti raziskovalka z dvigom roke, ko s partnerjem končata. Raziskovala bo prišla k vama in bo shranila končano nalogo na disketo.

Najlepša hvala za sodelovanje!

Annmarie G. Zoran
University of South Florida
Instructions to Participants in English

Instructions:

You and your partner have 10 pictures of an event. Your partner has half of the pictures and you have the other half. Your task is to place the pictures in the correct order. Remember! You have only half of the whole story. Your partner has the other half. So, using the MSN conferencing tool you and your partner will:

1. Accurately, describe what the pictures are about;
2. And place them in the correct sequence of events (1, 2, 3, 4, 5, 6, 7, 8, 9, and 10);
3. Copy/Paste your finished transcript into WORD (or textpad).
4. Raise your hand when you are finished.

Remember:

1. Use only English.
2. Do not ask questions to your neighbor or teacher.
3. Do not use a dictionary.
4. If you are unsure, ask your partner
5. Be as precise as possible in both grammar, spelling, and vocabulary. Ask your partner, if you are unsure about anything.
6. When you are finished, let the researcher know by a raise of hands. The researcher will come to your station and save your finished activity on a disk.

Thank you for your participation!

Annmarie G. Zoran
University of South Florida
**Corrective Feedback Coding**

**Interaction Analysis Coding Form for Synchronous Interaction (modified from Castañeda, 2005)**

<table>
<thead>
<tr>
<th>Turn #</th>
<th>Turn</th>
<th>Error Yes/No</th>
<th>Error Type</th>
<th>Corrective Feedback Yes/No</th>
<th>Corrective Feedback Type</th>
<th>Learner Response Yes/No</th>
<th>Learner Response Type</th>
<th>Column 7 (follow up study)</th>
<th>Column 8 (follow up study)</th>
<th>Notes for Special Needs Interlocutors</th>
</tr>
</thead>
</table>

Peer (initial turn with error (P1) → Learner response (P2) → Reaction/Response (P1)

Note: If a learner with special needs the notation will indicate an ‘s’ at the end of the abbreviation. For example: P1S or P2S
About the Author

Annmarie Gorenc Zoran received her Bachelor’s Degree from the University of Illinois at Chicago. She taught EFL to elementary school students and to adults in Slovenia, while attending the Pedagogy and Andragogy program at the University of Ljubljana. Her interest in education and research led her to enroll in the Second Language Acquisition and Instructional Technology (SLA/IT) Ph.D. program at the University of South Florida.

While in the PhD program, Ms. Zoran was quite active. She has taught ESL classes, university level face-to-face and distance learning, worked as the SLA/IT program assistant, CALL consultant, curriculum builder for online courses, served as Secretary and President of the SLAQ student organization, has served on several committees, has presented papers and published/co-published several papers and book chapters. Her research interests are in computer-mediated-communication, teacher education, whilst furthering research and awareness within special education and SL learning. Ms. Zoran is currently residing in Slovenia.