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ARTICLE

Peer interaction in text chat: Qualitative analysis of chat transcripts

Ewa M. Golonka, University of Maryland

Medha Tare, University of Maryland

Carrie Bonilla, George Mason University

Abstract

Prior research has shown that intermediate-level adult learners of Russian who worked interactively with partners using text chat improved their vocabulary and oral production skills more than students who worked independently (Tare et al., 2014). Drawing on the dataset from Tare et al. (2014), the current study follows up to explore the nature of the students' (N = 25) interactions during the text chat activities to determine potential sources of the gains. All 18 activities developed for the study encouraged interaction to complete tasks in pairs. A detailed coding of 169 text chat transcripts examined instances of peer–peer interactions. Our quantitative and qualitative analyses explored whether and to what extent real-time interactive language tasks foster the kinds of language-related moves that may support greater language learning. Results show that students spontaneously engaged in various behaviors which may support language learning, such as providing language-related assistance (self- and peer-correction, negotiation for meaning), using their partner as a resource (for clarifying information, modeling language use, or helping with unknown vocabulary), and providing encouragement (responding positively to the task and to each other, eliciting information from a partner). The most frequent instances were of positive affect, self-correction, and partner correction.

Keywords: *Computer-Mediated Communication, Language Teaching Methodology, Instructional Design*

Language(s) Learned in this Study: *Russian*

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Introduction

Text chat, a form of synchronous computer-mediated communication, is increasingly seen as a means to foster interaction between second language learners akin to face-to-face communication. While multiple studies have shown the linguistic benefits of engaging in text chat for second language learners (Blake, 2009; Kern, 1995; Lin, Huang, & Liou, 2013; Tare et al., 2014), less is known about the exchanges and processes that occur in this kind of interaction that may help facilitate language gains. From the interactionist perspective, researchers have hypothesized that interaction is a vital component of successful adult second language acquisition (SLA) because it encourages negotiation for meaning (NfM) and promotes negative feedback, modified input and output, and noticing of language features, which facilitate language acquisition (Long, 1981, 1996; Schmidt, 1990). The principles of the interactionist perspective have been extended to computer-assisted language learning (CALL; see Chapelle, 2009; de la Fuente, 2003; Doughty & Long, 2003; Long, 2015), and chat specifically (Blake, 2000; Jepson, 2005; Pellettieri, 2000; Smith, 2004). Among the methodological principles for CALL, Doughty and Long (2003) list collaborative learning, because it allows for interaction among learners as well as input modification and elaboration, all of which are desirable conditions for language acquisition. Collaboration among learners is also widely discussed from a sociocultural perspective on language learning, which treats interaction as an opportunity

to collaborate and assist each other while completing assignments (Donato, 1994; Fernandez Dobao, 2014; Ohta, 2000; Swain, 2000, 2001). Increasingly, researchers are drawing from both interactionist and sociocultural theories to describe learner behaviors in interactive contexts (Foster & Ohta, 2005; Hulstijn et al., 2014). For instance, in their study of 39 learners of English and Japanese, Foster and Ohta (2005) proposed that while NfM may be one process through which learning occurs in interaction, a communication breakdown is not necessary to encourage focus on form and learning. Their analysis of spoken conversation during an information gap task found relatively few comprehension, confirmation, and clarification requests, all of which are considered signs of NfM. Rather, a qualitative analysis found that many of the exchanges could be characterized by students encouraging and providing assistance to each other to complete the task. In their nine-author collaborative article, Hulstijn et al. (2014) offer insights from both the cognitive and sociocultural approaches on ways to bridge the somewhat complex gap between the two approaches. Though sometimes viewed differently by experts in these fields, they conclude that bridging that gap would be beneficial to the field of SLA. Thus, in this study, we utilize both approaches to investigate the salient characteristics of students' text chat interaction using transcripts from second language learners.

Overview of Literature on Text Chat

Cognitivist SLA perspectives address the developmental processes learners go through when acquiring a second language by focusing on a learner's increasingly developed language ability as evidenced by changes in global proficiency or other linguistic measures (Larsen-Freeman, 2007). The interaction hypothesis purports that input, output, NfM, corrective feedback, and attention are all necessary components of the process of acquiring a second language (Long, 1981, 1996, 2015) and has been supported by evidence from an array of quantitative research studies, as evidenced in several meta-analyses (e.g., Plonsky & Gass, 2011). While the interaction hypothesis was conceptualized for face-to-face interaction prior to the development of text chat as a pedagogical tool, text chat has been likened to face-to-face interaction in terms of degree of NfM (Kitade, 2000; Smith, 2008). Recent research has also supported the linguistic benefits of text chat, as compared to face-to-face interaction (Beauvois, 1998; Blake, 2009; Kern, 1995) and otherwise (Abrams, 2003; Payne & Ross, 2005; Payne & Whitney, 2002; Sykes, 2005; Tare et al., 2014). A meta-analysis by Lin et al. (2013) examined ten studies that compared text chat to other forms of interaction such as asynchronous computer-mediated communication, face-to-face interaction, and voice chat. By calculating the weighted effect sizes for these studies, they summarized the effects of text chat on SLA as a significant positive mean effect (m = .33). This result indicates that text chat aided language development—assessed through oral fluency, lexical, and grammatical measures—when compared to the control and comparison conditions across studies. Further, certain characteristics of text chat interaction were found to favorably affect language development including assigning text chat to higher proficiency learners as opposed to beginners, having longer and regular chat sessions, and dividing the students into pairs or small groups rather than chatting as a whole class. While the number of studies eligible for the meta-analysis was small, the results demonstrate that participation in text chat consistently affords greater gains in language development compared to control groups.

Tare et al. (2014) examined the importance of interaction for SLA by analyzing outcomes from two types of out-of-class activities. The study compared (a) interactive homework completed via text chat and (b) individual homework completed via independent writing. In a between-subjects design, participants in two intermediate-level Russian classes were assigned to the two conditions and completed study tasks three times per week for six weeks. In the interactive condition, student pairs engaged in synchronous text-chat sessions, completing tasks designed to encourage interaction through information-, reasoning-, or opinion-gaps. In the individual condition, students completed comparable writing activities on their own. Both conditions provided the same language input and required production over an equivalent amount of time. Language gains were assessed through vocabulary, writing, and speaking pre- and post-tests. Students in the interactive condition showed greater gains in vocabulary knowledge and oral production than students in the individual condition. Students in the interactive condition also produced more Russian, measured by

types and tokens, in their homework assignments than did students in the individual condition. These results broadly support the benefits of interactive homework for L2 learning and production.

Apart from the quantitative evidence of L2 learning during interactive chatting, sociocultural perspectives focus on the social context in which language is used, and the actions learners take while engaged in collaboration (Larsen-Freeman, 2007). Research from this perspective focuses on the facilitative effects of peer–peer collaborative dialogue on L2 learning (Swain & Watanabe, 2012). Collaborative dialogue can be seen in language-related episodes (LREs), defined by Swain and Lapkin (1998) as "any part of a dialogue where students talk about language they are producing, question their language use, or other- or self-correct their language production" (p. 104). Learners are also hypothesized to benefit from collaborative dialogue through means such as scaffolding (i.e., experts assisting novices at tasks beyond their developmental level), use of the first language, and use of repetition (Swain & Watanabe, 2012).

One study that examines this type of expert–novice collaborative learning focused on the interactions in a tandem learning situation by 26 pairs of Korean- and English-speaking high school students in Canada who were trying to learn each other's native language (Chung, Graves, Wesche, & Barfurth, 2005). Text chat was assigned as homework and learners communicated with their partners in small groups and collaborated on various assigned tasks. L2 vocabulary was evaluated before and after the set of chat activities, and in all cases, students demonstrated gains in vocabulary knowledge. The analysis of 44 transcripts of chat sessions revealed that participants were able to teach and learn appropriate linguistic and cultural behaviors. Specifically, the authors provide examples of how students took on the roles of language expert and novice in the interaction and scaffolded each other's learning by providing vocabulary meanings or guiding comprehension. However, an exhaustive coding of the transcripts was not completed to show how often this type of interaction occurred.

Shekary and Tahririan (2006) have applied insights from both interactionist and sociocultural approaches to SLA to identify and analyze LREs in chat transcripts. They took a closer look at transcripts to identify LREs that indicated a target linguistic item which was being noticed during the text chat interaction. Their study included 16 English as a foreign language students who participated in dictogloss, jigsaw, and free discussion text chat tasks in mixed-proficiency pairs. LREs could be either reactive, which occurred "in response to a student error" or preemptive, which occurred when "the learner raises a query" about a linguistic item (p. 562). The researchers identified 718 LREs, which were coded along additional dimensions, and then constructed individualized post-tests for the participants based on the linguistic items that triggered a discussion. Results of the post-tests revealed that learners "were able to remember the targeted linguistic items almost 70.3% of the time on the immediate post-tests and 56.7% on the delayed post-tests" (p. 567). The analysis also suggested that explicit uptake of the targeted items, defined as when learners incorporated the targeted linguistic items during the chat, may support greater learning. The researchers concluded that online learning in text chat can promote noticing of linguistic items without disrupting the meaningful interaction that is occurring.

Kitade (2000) used a conversation analysis methodology to examine 24 text chat sessions engaged in by intermediate and advanced Japanese as a foreign language students. Kitade discussed unique elements of text chat conversational contexts such as the lack of turn-taking competition that occurs in face-to-face interaction and the limited ability to rework and revise an utterance before sending it compared to asynchronous writing. In addition, the study involved an examination of how text chat can be effective for L2 learning. One key factor was that the continuous chat transcript allowed students to notice their own errors and engage in monitoring and self-correction. Kitade also found that students requested meanings from each other and collaborated, possibly as a result of feeling less pressure or imposition in asking for help. This qualitative analysis of chat transcripts shows that the types of interactions supportive of learning do occur but the study does not provide quantitative information about the rate at which they occur.

Research Question

Studies that have discussed the linguistic benefits of chat compared to other kinds of interaction consistently have found positive effects for language learners engaging in text chat. The language learning processes that underlie this kind of communication have been examined through different views: the interactionist perspective that considers NfM to be the driving force for successful acquisition and the sociocultural perspective that aims to describe the roles of peer assistance and collaboration that occur through language use. In this study, we make use of both perspectives in order to investigate the salient characteristics of interaction that might support L2 learning. While we know that the students interacting through text chat in Tare et al. (2014) made greater language gains than those working without a partner, we do not know what aspects of the interaction led to the gains, as the previous study did not include an analysis of the chat transcripts. Thus, in the present study, we analyzed the transcripts to explore the following question: What types of interactions occurred during text chat that could have led to greater language gains?

Method

Participants

Students enrolled in an intermediate-level Russian class at an intensive language training institution participated in this study. The participants were 25 students (19 males; 6 females; mean age of 22.3 years; mean education of 1 year of college).

Materials

The activities assigned for the chat homework were designed by near-native speakers of Russian to complement the standard course materials used for the class. They covered the topics that would be taught over the course of the study: weather and nature, transportation, housing, hobbies and free time, health, military, and post office. Each activity also had a glossary listing possible new vocabulary so that students could understand the information presented and discuss it.

The activities were designed to be task-based in that each one included a specific goal that learners needed to accomplish (Long, 2015). They were also designed for dyads, rather than groups, in order to encourage interaction (Tudini, 2010). All text chat activities included information-, reasoning-, or opinion-gaps that learners needed to fill in order to complete the task (Pica, Kanagy, & Falodun, 1993; Prabhu, 1987; for a full list of activities used in this study, see Appendix A).[1]

Procedures

The chat activities were assigned as homework three times per week over a 6-week period. The materials included partner assignments, instructions for chatting using the site, and the tasks with any supporting files (e.g., maps or pictures) required for completing the activity. Participants were assigned a new chat partner each of the six weeks to ensure a variety of interactions and encourage NfM (Shekary & Tahririan, 2006). The instructions for the chat encouraged participants to use their partner as a resource but did not explicitly ask them to correct each other or themselves or follow-up to clarify if they were confused.

Coding

Chat transcripts were coded using ATLAS.ti, a qualitative data analysis software program. Each chat session was saved in ATLAS.ti as a primary document for a total of 257 primary documents from which 88 were excluded due to one of the following reasons: (a) one or both chat partners did not consent to use of their transcripts in the study; (b) one partner did not show up for the session and the other partner completed the task alone; and (c) partners chatted for a while, but did not start the assigned task. The remaining 169 transcripts were tagged according to the 18 activities created for this study (e.g., post office, weather, health, free time, etc.), allowing documents on the same topics to be reviewed and analyzed together.

The starting point for determining the codes was the development of a concept map, which incorporated elements based on relevant findings from the SLA literature on L2 interaction. From the interactionist perspective, we incorporated the concept of NfM regarded as crucial in successful interaction because it promotes noticing, which in turn facilitates learning (Long, 1996; Schmidt, 1990). From the sociocultural perspective, we took the notion of scaffolding which is also viewed as facilitative for learning (Aljaafreh & Lantolf, 1994; Nassaji & Swain, 2000). This map served as the basis for conceptualizing peer interactions and developing initial codes. Next, researchers familiarized themselves with the transcripts through several close readings and identified additional possibilities for codes (e.g., the encouragement codes and some partner-as-resource codes were added as a result of this process). Then, two team members coded four chat transcripts together by assigning codes to the selected quotations[2] and adjusted any code definitions as needed. The whole team participated in discussions about the codes and refining their definitions. The concept map (see Figure 1) was modified during this process and its elements were further grouped into language-related assistance moves (self-corrections, partner-corrections, and NfMs), partner-as-resource moves (clarifying instructions, modeling language use, helping with technical problems and unknown vocabulary), and showing-encouragement moves (helping with task completion, eliciting, providing positive affect).

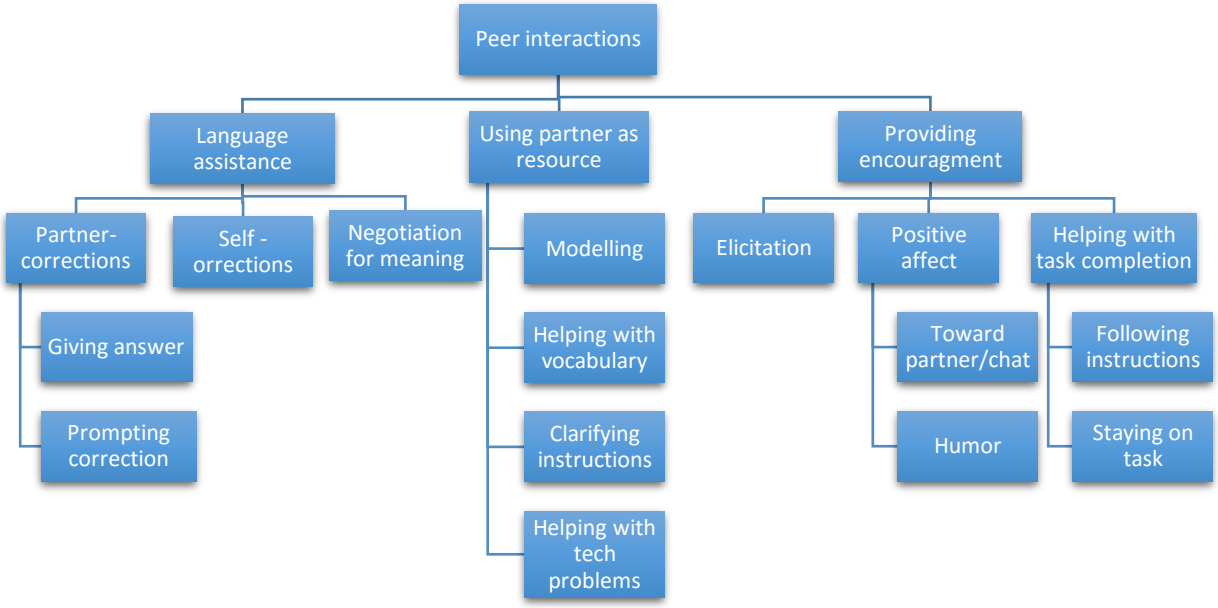

Figure 1. Concept map for types of peer interactions during text chat sessions.

Then, the two researchers separately coded four more transcripts and met to discuss the discrepancies, and consequently, adjusted the coding scheme (see Appendix B for a list of codes and their definitions). Once agreement was reached on the codes and their definitions, one researcher coded all of the transcripts, checking reliability after every 20 transcripts. These self-checks yielded a reliability of 95%. The detailed analysis and results for each type of code will be described in the following sections.

Results

Language-Related Assistance

Three types of language-related assistance moves were identified in the chat transcripts: NfM, self-corrections, and partner-corrections.

Negotiation for Meaning

NfM is defined in this study as the collaborative work among chat partners to achieve mutual understanding through comprehension checks, confirmation checks, and requests for clarification. Following Pica (1987), we define comprehension checks as moves in which one speaker determines whether the other person understood the message, for example, *Do you understand?* Confirmation checks are moves by which one speaker seeks confirmation that he or she understood the other person's message. Clarification requests are moves by which one speaker seeks assistance in understanding the other speaker's message (Pica, 1987).

NfM was coded by identifying the following three steps, in this order:

1. Look for a signal that communication has broken down (e.g., clarification request, confirmation check, or comprehension check).
2. Trace back to identify the trigger (e.g., lexical, morphosyntactic, spelling, or contextual).
3. Look ahead to find the resolution (e.g., uptake).

Thus, all instances of NfM were marked for (1) the request for clarification or comprehension or confirmation check, (2) the trigger, and (3) the resolution. They all represented instances where there was evidence of a signal that communication had broken down. Moves that had the same shape as NfMs, that is, they had a trigger, they had either a clarification request or a comprehension or confirmation check, and they had a resolution, but that had functions other than NfM, were not included in this category (Foster & Ohta, 2005). If the uptake was present, it was included in the quotation to determine whether or not the NfM was successful. Table 1 shows characteristics of the 21 instances of NfM found in our dataset with respect to the type of strategy used (i.e., clarification request, confirmation check, or comprehension check) and the degree of success.

Table 1. *Number and Characteristics of the NfM Moves*

NfM	Clarification request	Confirmation check	Comprehension check	Total
Successful	8	5	0	13
Unsuccessful	5	0	1	6
Partially successful	1	0	0	1
Unclear	1	0	0	1
Total	15	5	1	21

Of the 25 students, 7 did not engage in NfM in any way during the course of the study, that is, they did not initiate the NfM or did not produce a trigger. 13 students initiated a NfM with a partner (range = 0–4) and 12 students produced a trigger (range = 0–4). In Excerpt 1, Student 61 requested clarification to make sure he or she understood the partner's question *(Now at my house? Or what?*). The trigger was contextual (*Everything [is] all right?*) and the partner provided more context (however, with a wrong content word). Nevertheless, this NfM was successful.[3]

Excerpt 1.

Student 44: Я видел много ураганов когда я был маленкый. А ты?
Student 61: Я видел один ураган, но когда я с моей семьей были дома я видел и был в наводниний!
Student 44: Как интересно! Всё нормал
Student 44: нормально да?
Student 61: Сейчас в моим доме?
Student 61: Или что?
Student 44: Да. После урагана.

Student 61: навондний были маленкий но в моим доме всё хорошо потому что у нас было страхование!

Student 44: I saw many hurricanes when I was little. And you?
Student 61: I saw one hurricane, but when I was at home with my family I saw and was in a flood!
Student 44: How interesting! Everything all
Student 44: all right yes? *(Trigger)*
Student 61: Now at my home? *(Clarification request)*
Student 61: Or what? *(Clarification request)*
Student 44: Yes. After the hurricane. *(Clarification)*
Student 61: the flood was small but at my house everything was fine because we had insurance! *(Resolution – successful)*

Unsuccessful negotiations in this study occurred when the interlocutor did not give the clarification after it was requested and often changed the topic or simply abandoned the problematic utterance. In Excerpt 2, Student 54 requested clarification on the word for renting a car, but Student 48 did not provide enough information for Student 54 to pick up the meaning, even though there was an opportunity to do so.

Excerpt 2.

Student 54: какая марка автомобиля?
Student 48: я прокал этот автомобиля.
Student 54: ?
Student 48: это четыре двер машина.
Student 48: я прокат автомобиля
Student 54: Какого цвета?
Student 48: Эта машина - жёлтая.
Student 48: я не знаю марки
Student 54: Где ты взял машину?

Student 54: what's the make of the car?
Student 48: I rented this car.*(Trigger)*
Student 54: ? *(Clarification request)*
Student 48: this is a four door car.
Student 48: I rented this car *(Clarification attempt)*
Student 54: What color? *(No resolution, topic change – NfM unsuccessful)*
Student 48: This car is yellow.
Student 48: I don't know its make
Student 54: Where did you get the car?

The following NfM move (Excerpt 3) did not contain an uptake, thus, it was impossible to determine whether the negotiation was successful. After the trigger (*It seems like I'm in the Hunger Games*), Student 63 requested and received clarification, but ended the conversation before acknowledging the clarification.

Excerpt 3.

Student 50: Я хотел поход в лес. Кажется, что я нахожусь в Голодных Играх.
Student 50: Вот и все! До свидания!
Student 63: хаха как играх?
Student 50: Голодных! Когда один хочет есть.
Student 63: до завтра!

Student 50: I wanted to go to the forest. It seems like I'm in The Hunger Games. *(Trigger)*
Student 50: That's all! Good bye!
Student 63: haha what games? *(Clarification request)*

Student 50: Hunger! When one wants to eat. *(Clarification)*
Student 63: see you tomorrow! *(No uptake – unclear if NfM successful)*

Self-Corrections

Self-corrections are defined as instances of repairing one's own errors right after they occurred without being prompted by the partner. Therefore, all instances of self-corrections identified in this study were self-initiated and unnecessary in the sense that there was no communication breakdown because of the error. However, we consider self-corrections as a type of language-related assistance because they focused on specific forms which could hypothetically help the partner to notice these forms. Sometimes students marked self-corrections with an asterisk the way they are in the habit of doing while chatting or texting in English.

As shown in Table 2, 132 self-corrections were identified in the transcript data, and later divided into five categories: spelling, sentence-repair, grammatical, factual, and lexical. Self-corrections of spelling mistakes included corrections of typos and were predominantly accurate, that is, they replaced an incorrect form with a correct one (89%). Sentence repairs were also accurate and included added punctuation, added information, false starts, and retracings. Factual self-corrections were considered to be all accurate and they included instances of corrected information and added clarification. Students tended to mark self-corrections of spelling mistakes with either an asterisk, an emoticon depicting a happy face, or an interjection, such as *haha* (58%).

Table 2. *Number and Accuracy of Self-Corrections*

	Spelling	Grammatical	Lexical	Factual	Sentence Repair	Total
Incorrect → Correct	39	13	4	14	38	108
Incorrect → Partially Correct	1	6	0	0	0	7
Incorrect → Incorrect	3	8	0	0	0	11
Correct → Correct	1	1	2	0	0	4
Correct → Incorrect	0	2	0	0	0	2
Total	44	30	6	14	38	132

On average, participants corrected five of their own utterances over the course of the study (range = 0–15) without being prompted. Only one participant in the whole data set did not engage in any self-corrections. The following excerpts provide examples of different types of self-corrections found in this dataset. Excerpt 4 shows an example of a self-correction of a spelling mistake, where Student 44 corrected a typo and marked this correction with an asterisk.

Excerpt 4.

Student 44: я люблю юг больше чем северо, но я хочу увидеть етот большой штат
Student 44: этот*

Student 44: I like south more than north, but I want to see this *(Misspelled)* big state
Student 44: this* *(Corrected)*

Self-corrections of grammatical errors included incorrect pronoun–noun agreement, noun–adjective agreement, pronoun–verb agreement, use of prepositions, word order, and so forth. 47% of self-corrections of grammatical errors replaced an incorrect utterance with a correct one, 20% of such self-corrections were partially accurate, and 33% of these corrections included inaccurate modifications. Excerpt 5 illustrates a self-correction of a grammatical error, where Student 45 corrected a case ending of a personal pronoun after realizing that the verb *to like* takes a dative case in Russian.

Excerpt 5.

Student 45: я думаю, что я понравится этот фильм
Student 45: мне

Student 45: I think I *(Incorrect case ending)* will like this movie
Student 45: I *(Case ending corrected)*

Self-corrections of grammatical errors sometimes included multiple attempts, as shown in the following example (Excerpt 6). While the error was not corrected during these attempts, both partners must have noticed the grammatical feature Student 66 struggled with (i.e., the use of a possessive pronoun).

Excerpt 6.

Student 49: Какая буква находится в начале вашего штата?
Student 66: Н!
Student 66: а вы?
Student 66: а ваш...
Student 66: а вот?
Student 66: а вам?
Student 49: т!!!!

Student 49: What letter does your state begin with?
Student 66: N!
Student 66: and you? *(Incorrect pronoun)*
Student 66: and yours... *(Correct pronoun, incorrect case ending)*
Student 66: and here? *(Incorrect part of speech)*
Student 66: and [to] you? *(Incorrect pronoun)*
Student 49: t!!!!

Self-corrections of factual errors included instances of modifications in which a learner corrected some information where he or she either (a) misunderstood or misspoke or (b) added clarification to the previous utterance. In Excerpt 7, Student 71 repaired his or her own misunderstanding of the partner's statement and apologized for the incorrect statement.

Excerpt 7.

Student 54: Мне не нравится снег
Student 54: А вы?
Student 71: Да, Я Люблю снег тоже!
Student 71: извини я люблю снег! Вы не!

Student 54: I don't like snow
Student 54: And you?
Student 71: Yes, I also like snow!
Student 71: sorry I like snow! You don't!

There were only 6 self-corrections of lexical errors and they were all accurate, that is, they either replaced an incorrect utterance with a correct one or a correct one with another correct, but more appropriate, one. An example of the former is provided in Excerpt 8, where Student 44 replaces a lexically incorrect verb *to know* with the correct one *to like*.

Excerpt 8.

Student 44: Я люблю окулы. Ты знаешь есть окулы?
Student 44: Ты любишь есть окулы?

Student 44: I like sharks. Do you know *(Wrong verb)* to eat sharks?
Student 44: Do you like *(Corrected verb)* to eat sharks?

The sentence repair category included various kinds of corrections to a sentence structure. Out of 38 instances of sentence repair, 20 involved adding punctuation to an already completed utterance, most likely after realizing that the utterance could have been misunderstood without a punctuation mark. In Excerpt 9, Student 43 may have realized that his utterance could be understood as a statement without the question mark.

Excerpt 9.

Student 43: готов
Student 43: ?

Student 43: ready
Student 43: ?

Among sentence repairs, there were also clear instances of false starts when a student either pressed the enter key too quickly or realized there was a mistake after pressing it, as seen in Excerpt 10.

Excerpt 10.

Student 41: Я не зна
Student 41: Я не знаю если они малчики или девочки.

Student 41: I don't kn
Student 41: I don't know if they are boys or girls.

Finally, we found a small number of retracings that were syntactic modifications to an utterance in which learners began an utterance one way and then either decided to articulate their thoughts differently or realized that they could not proceed the way they started. For example, they realized that the verb they were about to use required a pronoun in a different case and modified the rest of the utterance. Excerpt 11 illustrates this type of self-repair in Russian, in which Student 40 started the sentence with a personal pronoun in a nominative case, but, after realizing that the verb *to need* required a dative case, corrected the case ending of the pronoun into dative (the English translation could not convey this notion).

Excerpt 11.

Student 40: Я мне надо аптека чтобы купит таблетки?

Student 40: I *(Nominative case)* [do I (*Dative case to agree with the verb "need"*] need a pharmacy to buy the pills?

Partner-Corrections

Corrections of partner's errors are defined as repairs of grammatical, lexical, spelling, or factual errors by a conversation partner. Following Ferreira, Moore, and Mellish (2007), we categorized feedback on error into strategies in which the learner is given the correct answer (recasts and explicit corrections) versus strategies in which the learner is prompted to self-correct (clarification requests and elicitations). Table 3 shows a distribution of 73 partner-corrections identified in our dataset. On average, students corrected their partner's errors three times over the course of the study (range = 0–7). Out of 25 students, only one student did not engage in any partner corrections.

Table 3. *Distribution of partner corrections*

	Spelling	Grammatical	Lexical	Factual	Total
Recasts	9	18	3	2	32
Explicit corrections	1	4	1	22	28
Clarification requests	1	0	0	5	6
Elicitation	0	0	0	7	7
Total	11	22	4	36	73

Recasts are defined as reformulating a part of the partner's answer, providing the target form. Because recasts in this study were provided by chat partners who were fellow students and not teachers, it is impossible to determine whether or not the recasts were intentional, that is, whether the learner deliberately wanted to correct his or her partner's errors, as is typically done by a teacher. Regardless of intentionality, these partner corrections function as recasts. A total of 32 recasts were identified in the chat transcripts, including 18 recasts of grammatical errors, 9 of spelling errors, 3 of lexical errors, and 2 of factual errors.

In the example of a grammatical recast below (Excerpt 12), Student 43 recasted a partner's phrase, putting *second* in the correct case, but did not explicitly state that the partner's grammar was incorrect.

Excerpt 12.

Student 58: да, и я хочу комнату на второй этаже
Student 43: да мы оба хотим купить комнату на втором этаже.

Student 58: Yes, and I want an apartment on the second *(Wrong case)* floor.
Student 43: Yes, we both want to buy a room on the second *(Case corrected)* floor.

The key element of any recast is learner uptake, that is, the way the learner responded to receiving a correction. Learner uptake usually comes right after the correction and constitutes observable evidence that the learner noticed the correction and responded to it in some way.[4] If the uptake is absent, as in Excerpt 12 above, it is impossible to determine whether or not the learner noticed the correction, based just on the chat transcript. In our data, only 6 out of the 32 recasts included evidence of uptake. In Excerpt 13, the recast is followed by learner uptake showing that Student 41 likely noticed the correct forms provided by the partner and incorporated the same construction correctly in the following question.

Excerpt 13.

Student 41: У вас штата есть много гор?
Student 58: да, в моем штате много гор, в центре
Student 41: Какие команды играют в етом штате?

Student 41: Are there lots of mountains in your state? *(Wrong preposition, wrong case in the pronoun and noun)*
Student 58: yes, in my state *(Correct preposition, correct case in the pronoun and noun)* there are lots of mountains, in the center
Student 41: What teams play in this state? *(Correct preposition, correct case in the pronoun and noun)*

Another type of a giving-answer correction found in chat transcripts was an explicit correction. A total of 28 explicit corrections were identified, the majority of which (22) were factual. Half of the factual corrections were related to the content of the activity and the other half were related to understanding or following instructions. Unlike recasts, the majority of explicit correction moves (23 out of 28) included learner uptake as illustrated in Excerpt 14, where Student 52 acknowledged his partner's explicit correction of the prepositional phrase and repeated the preposition in the following utterance.

Excerpt 14.

Student 52: вакцина на алкоголиза

Student 66: от алкоголиза
Student 52: да, от

Student 52: vaccine on *(Wrong proposition)* alcoholism
Student 66: from *(Corrected preposition)* alcoholism
Student 52: yes, from *(Acknowledgment)*

Prompting-answer partner corrections included clarification prompts that involved either requesting clarification (defined as moves in which one partner seeks assistance in understanding the other partner's utterance), providing clarification (defined as moves in which one partner adds clarification to his or her own utterance after realizing that another partner misunderstood it), or pointing out an error. The difference between clarification requests in this category and those used in NfM is that unlike in the NfM, here there is no breakdown in communication. Excerpt 15 and Excerpt 16 exemplify prompting-answer corrections containing a clarification request and pointing out an error, respectively.

Excerpt 15.

Student 41: У меня тоже карт <Воспален Ие Легких>
Student 71: Воспаление легких?
Student 41: Да, я глупый. Воспаление легких

Student 41: I also have a card <Pne Um Onia>
Student 71: Pneumonia? *(Clarification request)*
Student 41: Yes, I'm stupid. Pneumonia

Excerpt 16.

Student 48: Может быть что это штат Сиэтл?
Student 48: *этот
Student 65: Штат есть города Сиэтл.
Student 48: Извините, этот штат - Вашингтон.

Student 48: Maybe this state is Seattle?
Student 48: *this
Student 65: Seattle is a city not a state. *(Error pointed out; loose translation)*
Student 48: Sorry, this state is – Washington.

Sometimes partners explicitly discussed errors and the reasons for them, as seen in Excerpt 17. After confirming that the partner is a girl, Student 41 asked why she is using masculine forms.

Excerpt 17.

Student 69: Да я прочитал это, и я готов.
Student 41: Хорошо, я почти готов. Хмм.. Ты девушка да? Почему ты сказал (Прочитал и готов)?
Student 69: Да, я девушка, но уже поздно, и я готова ко спать. Простите несколько ошибок lol

Student 69: Yes, I've read (Masculine form) it, and I'm ready. (Masculine form)
Student 41: Good, I'm almost ready. Hmm… You are a girl right? Why did you say (Read (Masculine) and ready (Masculine))?
Student 69: Yes, I'm a girl, but it's already late, and I'm ready to go to bed. Sorry about a few mistakes lol

Using Partners as a Resource

Participants in this study were asked to limit their use of resources such as dictionaries or the Internet; instead, they were asked to use their partners as a resource. The *partner as resource* code was utilized to mark moves in which partners took initiative and requested help or helped each other to complete the tasks. Moves in which instructions clearly stated that partners needed to find out specific information from each other were not coded using the partner as resource code. In other words, the partner as resource code was used to mark those moves in which learners spontaneously requested or offered some assistance in the target language that would help their partners complete the task. Examples include clarifying instructions, assisting partners with technical issues, modeling language use, helping partners understand the content, helping others with vocabulary, and helping others to complete a task without needed materials. 45 moves were coded with the partner as resource code.

Participants used their partner as resource most often (21 times) to clarify instructions and figure out the assignment (see Excerpt 18). Importantly, these conversations took place in Russian. They also used their partner to get assistance when they experienced some technical issues, such as problems locating the maps or photographs that were the part of the assignment or changing the keyboard from English to Russian. In situations when one partner could not find the needed materials, both partners figured out a strategy on what to do in this new circumstance and worked together to complete the task. For example, when one partner could not access the photographs of a summer house, the other student described the photographs to the partner. The partner asked questions and commented on the student's descriptions. It turned out to be a very lively session with increased interaction (see Excerpt 19). In a few other situations, one partner could not access the map and the other partner provided directions.

Excerpt 18.

Student 71: Что мы должныы делать?
Student 40: будем решать кто делает что?
Student 40: надо решить кто будет звонить хозяну, брать ключи, переежать и так далее

Student 71: What are we supposed to do?
Student 40: we will decide who does what?
Student 40: we have to decide who will call the landlord, pick up the keys, move and so on

Excerpt 19.

Student 40: у вас есть фотографие?
Student 69: нет
Student 40: мне говорит что я вижу?
Student 69: и я буду описывать, что я думаю, что происходит на даче
Student 40: хорошо. я вижу девушку. она ест ягоды и улыбается

Student 40: do you have the photographs?
Student 69: no
Student 40: should I tell what I see?
Student 69: and I will be describing what I think is going on at the dacha
Student 40: okay. I see a girl. she is eating berries and is smiling

Other categories in the partner as resource code included helping each other with vocabulary, either by checking the meaning of the words from the activity (e.g., *tonsillitis*, *throat*) or spontaneously offering English translation for more difficult words (e.g., *claws*, *mansion*), and modeling, defined as repeating a construction used by a partner and adding to it.

Providing Encouragement

In addition to providing language-related assistance and using partner as resource, students also provided

each other with different kinds of encouragement while completing the tasks. For example, partners helped each other to stay on task when one partner trailed off topic and the other one turned the conversation back on topic (see Excerpt 20). Very often, partners helped each other to follow instructions by reminding each other to finish all of the elements of assignment and to speak Russian only. Students also helped each other to keep track of time and informed their partner who wanted to end the session that they still had a few minutes left to finish the task. They sometimes kept discussing the topic even though one person started closing the session.

Excerpt 20.

Student 57: я ем бурито сейчац
Student 57: сейчас
Student 40: Хорошо. А какая у вас последная фотография?

Student 57: I'm eating a burrito now
Student 57: now
Student 40: Good. But what's on your last picture?

Students used multiple strategies to elicit speech from their partners. Through these moves, students made sure that they were completing the tasks and that the conversation was progressing smoothly. Examples of elicitation moves include: *What's on your second picture?*; W*hat's on your third picture?*; *What else did people say?*; *Now you ask me some questions.*; *Ask me about my state.*; *I like cold weather, how about you?*; *Why do you think this is a famous place?*; or *What's your opinion?* Students were always very responsive to these questions and provided the requested information, which kept the conversation going, helped partners to complete tasks, and made learners produce more language. These questions were usually spontaneous, as in real-life conversations, when a person follows up on an utterance to find out more about what the interlocutor just said.

Another way to provide encouragement for the partner throughout the sessions was through some kind of positive affect (282 instances found).[5] Students expressed positive affect toward the chat session (9 times) and the content of a chat task (30). They also showed markers of courtesy and friendship (59), apology (22), and humor (46), as well as markers of approval, affirmation, and enthusiasm toward their partner (16). Finally, students were quite generous with expressing positive emotions through conventional messaging markers such as *hahaha* (in English or Russian), *lol*, interjections, punctuation (!!, all caps), and multiple emoticons such as *:)* or *:-D* (for examples of positive affect expressed in the chat sessions, see Table 4). All of these positive expressions possibly made the sessions more pleasant for students who often chatted late at night when tired. They also represent a more casual use of the language, which may encourage students to be more comfortable and less anxious when conversing.

Table 4. *Examples of Positive Affect Expressed during Chat Sessions*

Type of positive affect	**Count**	**Examples**
Positive comments about chat session	9	Мне нравился это упражнение. I like this exercise. Я узнал много. I learned a lot.
Positive comments about content of chat task	30	Как интересно! How interesting! О ла ла! Я люблю романтическое кино! Oh la la, I like romantic movies!

Courtesy and friendship toward partner	59	Приятного вечера мой друг. Have a nice evening, my friend. Я рада помочь тебе. I'm glad to help you.
Approval, affirmation, enthusiasm toward partner	16	Молодец! Good job! Отличная идея! Great idea!
Apology	22	Простите, у меия есть плохо интернета сегодня. Sorry, my internet is slow today. Извините, я не могу писать быстро на компьютере. Sorry, I can't type fast on a computer.
Humor	46	Student 40: это вакцина от чего? Student 50: От алкоголизма! Я говорю, оставить пиво. Student 40: What is this vaccine from? Student 50: From alcoholism! I'm telling you, drop the beer.
Popular messaging markers	80	Хахаха; лол Haha; lol
Emoticons	20	:) :D -_- <333333

Discussion

In this study, we explored the characteristics of text chat between intermediate learners of Russian. Specifically, we looked for characteristics hypothesized to be present in spoken interaction, such as NfM and instances of linguistic feedback, as well as examples of collaboration and encouragement while performing assigned tasks. Overall, the qualitative coding analysis highlighted three main types of characteristics: providing language-related assistance, using partners as a resource, and providing encouragement.

The types of language-related assistance illustrate how text chat may contribute to linguistic gains. The examples provided showed learners negotiating for meaning and correcting both themselves and each other. NfM in interaction is hypothesized to be vital for successful language acquisition, as it promotes noticing of language features (Schmidt, 1990). However, in this study, the learners did not engage in as much NfM as they did in error correction, which is similar to what Foster and Ohta (2005) found in their analysis of spoken interactions between peers. This is likely due to the fact that the participants in this study, as in the study by Foster and Ohta, were of similar proficiency levels and part of intact classes. Learners of mixed proficiency pairs have been found to engage in greater NfM (Shekary & Tahririan, 2006; Iwashita, 2001). Regarding error correction, learners were found to correct both their own and their partners' errors on different linguistic aspects (e.g., lexical or morphosyntactic errors) in ways that have been found, in SLA research, to be effective in learning (Li, 2010). They provided recasts nearly as often as explicit error correction. The visual nature of text chat may also be especially amenable to learners' self-correcting because they immediately see a mistake on the screen, in contrast to face-to-face interaction (Blake, 2009; Razagifard, 2013). Taken together, the kinds of linguistic assistance noted in these interactions could have contributed to linguistic gains after six weeks of chatting.

Other salient aspects of the interactions also illustrate the full picture of interactive text chat sessions. For example, under the broad category of partner as resource, learners communicated with each other in the target language to clarify the goal of the task and help each other with vocabulary or technical problems.

While the learners in this study were of similar proficiency levels, they naturally displayed expert and novice roles, or teacher–student roles, as illustrated when learners helped their partners stay on topic or reminded their partners to speak only Russian. This kind of cooperative assistance could also be labeled under the broader category of scaffolding. In part, the goal-centered nature of the tasks may have also ensured that learners engaged in this kind of cooperative discourse. Task-based lessons have been noted to generate more negotiations in chat than open-ended conversation (Tudini, 2010). Similar examples of the kinds of encouragement found in this article were also noted in the analysis of spoken interaction by Foster and Ohta (2005), including expressions of interest and encouragement. Many other benefits of collaborative pair work for language learning have been found, including the pooling of ideas and resources, feedback for language development, and affective support for sustaining task engagement and rapport (Nguyen, 2013). This cooperative assistance may have also contributed to the chatting students' greater target language output in the chat task compared to those working independently, as found in Tare et al. (2014). The high presence of positive affect markers may also be indicative of an environment that facilitates learner self- and partner-corrections, as they were one of the most salient characteristics of the chat transcripts.

Conclusions

Overall, this study highlights how the nature of task-based text chat might foster linguistic gains and development, both through learners engaging in linguistic assistance and through incorporating a cooperative, supportive approach to a task. Interaction that took place during the completion of the assigned tasks allowed for different forms of scaffolding that benefited the learners at least in three ways. First, learners provided linguistic assistance to each other by offering corrections and negotiating for meaning, both of which could have led to noticing linguistic features and consequently acquiring them. Second, learners spontaneously used their partners as a resource and received needed assistance in the target language, which potentially created an effective way to quickly gather information or receive help when needed. Third, learners often encouraged each other by creating a positive atmosphere, demonstrating positive affect through humor and helping each other to stay focused on the task and produce more. This encouragement could motivate the partner to carry on with the task and successfully complete it. These findings suggest that task-based text chat has the potential to stimulate learners to negotiate for meaning, collaborate with peers, and encourage them, all of which may contribute to creating desirable conditions for language acquisition. Further, the optimal types of tasks to be used in text chat activities may be those containing various types of gaps because conversational partners need each other to complete them. Finally, students can be encouraged to assist each other in the target language and to provide feedback when appropriate if they notice their partner repeatedly making errors. They should also be encouraged to follow up with comprehension checks if they do not understand something their partner writes, in order to promote more careful and accurate use of the language.

Though not an explicit research question in this study, the results are illustrative of the kinds of characteristics of collaborative interaction that may improve language acquisition. While we cannot determine a causal relationship with these data, the three main aspects of interaction explored in the present study (language-related assistance, partner as resource, and encouragement) are plausible reasons why learners who participated in interactive chat in the Tare et al. (2014) study outperformed learners who completed similar tasks individually. Future work could control for different characteristics of collaborative interaction such as those found in this data. For example, if students were encouraged to provide different types of feedback, it would inform which characteristics of interaction led to language acquisition. This exploratory study lays the groundwork for more in-depth analysis of the pedagogical applications of text chat.

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Notes

1. In the information-gap tasks, each learner received only part of the relevant information, and they needed to work together to transfer information from one to another. For example, in a role-play scenario, participants received information for the characters they played (e.g., victim or policeman) and needed to gather information from their partner (e.g., take a police report about an incident). In the reasoning-gap tasks, learners needed to use forms of reasoning, such as deduction or inference, to derive new information from information that was given to them. For example, learners discussed potential solutions to problems such as traffic jams in Moscow. In the opinion-gap tasks, learners were asked to express their personal preference, opinion, or feeling regarding a given issue. For example, they were asked to express their opinions about a controversial medical treatment.
2. The main unit of analysis in ATLAS.ti is a quotation, that is, any continuous stretch of text to which a code is assigned.
3. All examples in Russian are original excerpts from the chat transcripts and include original spelling and punctuation. No errors were corrected and only those relevant to the discussion at hand were pointed out.
4. We made accommodations for the non-sequential nature of CMC and inspected several utterances after the trigger to look for uptake.
5. Data were also coded for negative affect, which yielded 18 instances of negative affect either toward the chat session, task, or partner in the dataset.

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Appendix A. Activities Used in the Current Study

Activity	Description of Interactive Activity	Gap Type
Weather-related situations	Students had different sets of weather-related pictures to discuss, caption, and match.	Information
Guess the state	Students each thought of a state which the other had to ask questions to reveal.	Information, Reasoning
Out of the sky	Students had different sets of reactions to the February 2013 meteorite crash in Russia and had to exchange the information and summarize witnesses' reactions.	Information
Stuck in traffic	Students read about Moscow's traffic problems and had to discuss and rank potential solutions.	Reasoning
How to get to Café Margarita?	Students were given street and Metro maps of Moscow and had to plan a trip together from the University to Café Margarita.	Reasoning
Car problems	Students were given a role-play scenario where one played the victim of a car break-in and the other played the policeman taking the report.	Information
Apartment hunting	Students were given different sets of apartment rental ads, a budget, and a set of desired criteria and had to discuss and decide on an apartment.	Information, Reasoning
Preparing to move	Students were given a moving scenario and a to-do list of errands to discuss and decide who will do what.	Reasoning
Trading places	Students were given a vacation apartment trade scenario where they had to describe and ask questions about each other's apartments.	Information
Role play "At the doctor's"	Students were given a role-play scenario where one played the role of a patient who describes his symptoms and the other played the doctor who diagnosed them.	Information
Alcoholism vaccine	Students were given slightly different information about a new medical treatment and had to fill in the details and discuss their opinions on the treatment.	Information, Opinion
Mixed up notes	Students were given different sets of illness "flashcards" and had to discuss to match the symptoms to the diagnoses.	Information
Free time	Students were given ads for movies, shows, and museum exhibits in Moscow and different personal preferences and had to decide which activity to attend and how to get there.	Reasoning, Opinion
Summer house	Students were given pictures of a typical Russian "dacha" summer home and were asked to discuss what they think the family members were doing on the day the pictures were taken.	Opinion

Helping a sick friend	Students were given a scenario where one felt sick and needed to find an open Russian pharmacy on a Saturday and the other knew how this system works.	Information
Footloose in new uniforms	Students read about new Russian military uniforms and had to discuss the pros and cons and their opinion of the change.	Reasoning, Opinion
Military ranks	Students were given different information about the Russian military ranks and had to discuss to fill in the missing rank titles.	Information
Post-office comparison	Students were given different lists of services offered by USPS and Russian Post and humorous statements about Russian Post and were asked to discuss and consider what these statements imply.	Information, Reasoning, Opinion

Appendix B. List of Codes and Their Definitions

Code	Sub-categories	Definition
Negotiation for meaning	Clarification request, confirmation check, comprehension check	A signal that communication has broken down (e.g., *What?*; *I don't understand.*; *Please repeat.*; Repetition of an utterance, etc.) Find a trigger that caused this break down. Mark from the trigger till the end of the exchange (including uptake, if relevant).
Partner correction	Giving answer strategies (recasts, explicit corrections); prompting self-correction strategies (clarifications, elicitations)	Denotes instances of correcting a partner's errors (grammatical, lexical, content, etc.). Includes correcting of information, recasts, prompts, metalinguistic explanations, and overt corrections.
Self-correction	Spelling, grammatical, lexical, factual, sentence-repair (added information, punctuation, false start, retracing)	Denotes corrections of own errors or mistakes using either correct or incorrect form.
Partner as resource	Clarify instructions, model, help with vocabulary, help with tech problems	Partners help each other with vocabulary, clarify instructions, deal with technical problems, and so forth. Also includes modeling (when one partner uses a word and the other one uses it after).
Positive affect	Expressed toward chat session, task content, partner (courtesy, politeness, apology, friendship); through humor, message markers, emoticons	Participant expresses likes or positive emotions towards the task, content, course, or partner. Shows courtesy, politeness towards partner, apology, or humor.
Helping with task completion	Stay on task, follow instructions	Participant brings the conversation back on task or makes sure that the task is completed properly. Partners make sure that instructions are followed properly.
Elicitation	N/A	Includes attempts to elicit speech on topic from the partner. Includes additional questions related to topic.

About the Authors

Ewa M. Golonka is a research scientist at the University of Maryland Center for Advanced Study of Language. She has taught Russian, linguistics, and SLA at various universities. Her research interests include instructed second and third language acquisition, technology for foreign language learning and teaching, and language immersion.

E-mail: egolonka@casl.umd.edu

Medha Tare is a research scientist at the University of Maryland Center for Advanced Study of Language. Her research interests include instructed SLA, cognitive aptitude, bilingual acquisition, and technology for foreign language learning.

E-mail: mtare@casl.umd.edu

Carrie Bonilla is term assistant professor of Hispanic Linguistics at George Mason University. Her current research focuses on second and third language acquisition, particularly pedagogical practices as related to the acquisition of syntax and morphology and individual differences such as cognitive aptitude. Her research has focused on questions of language learning in various learning environments, including online learning, classroom learning, and study abroad.

E-mail: cbonill7@gmu.edu