INVESTIGATING INTERACTIVITY AND ITS RELATIONSHIP TO LANGUAGE USE

AND TASK VARIABLES IN L2 PEER INTERACTION

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ABSTRACT

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LAMA ALHUSAIN

Interaction has received attention in different fields of applied linguistics. In the field of Second Language Acquisition (SLA), scholars have perceived interaction as a platform where L2 learners can engage in language experimentation. It has been considered in light of Long's (1981) Interaction Hypothesis, which posits that negotiation of meaning is the basis of L2 learning. Researchers also examined interaction from a different perspective, where they described salient features exhibited in different patterns of peer interactions to understand the underlying construct of conversation management in the context of L2 assessment (Galaczi, 2008). Previous studies that investigated L2 interaction mostly used qualitative methods over small datasets. The present study adopted a quantitative approach to understand the construct of interaction. To do so, L2 pair interaction was measured by creating a composite score of interactivity level to understand the relationship between students' degree of interactivity and their use of lexico-grammatical features as well as their L2 fluency. The study also examined the effect of tasks on L2 pair interactivity level. Pearson's correlation tests, as well as Spearman's rank correlation tests, showed that interactivity is associated with discourse particles, response forms, *wh*-questions, and second-person pronouns, while it was negatively associated with nominal forms (i.e., all instances of nouns, common nouns, and the length of the word) and hesitators. Furthermore, the results showed that interactivity was associated with more fluent L2 talk, where students of higher interactivity

levels tended to produce faster speech rates and fewer silent pauses. Additionally, an ANOVA test showed a large effect of task on L2 interactivity. Further analyses suggested that the general communicative purpose of task has a limited effect on L2 pair interactivity. However, the task prompt showed patterns that relate the type of information (e.g., lists of sentences, scientific graphs, words/phrases, images) provided to students in the prompt to patterns of L2 interactivity levels. The study provides insightful information for scholars interested in L2 interaction in oral assessment and L2 dialogic tasks.

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Dedication

My heartfelt thanks go to my family for their encouragement and belief in my abilities. Thank you, Abdulaziz, my husband and my number one supporter since the start of my academic journey. In the most difficult moments, you were the greatest source of strength and encouragement. Thanks for your tireless efforts, understanding, and willingness to lend a helping hand in every aspect of this journey. I dedicate this dissertation to you.

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1. Chapter 1- Introduction

L2 peer interaction has received attention in the field of second language acquisition (SLA). It has been viewed as a forum for L2 users to experiment with language, and it has been regarded with considerations to Long's Interaction Hypothesis which suggests that negotiation of meaning is the basis of language learning (Long, 1981). Scholars in applied linguistics also investigated interaction taking a different perspective where they describe salient features exhibited in different patterns of peer interactions to understand the underlying construct of conversation management in the context of L2 assessment (Galaczi, 2008; Storch, 2002). However, these studies mostly used qualitative methods over a small data set. Even with the case where interactions have been investigated quantitatively (i.e., Crawford et al., 2019), the study focused solely on the collaborative aspect of interaction, demonstrating that behaviors of collaboration incorporated features typical of spoken discourse in highly interactive and personally engaged situations (e.g., first/second person pronouns, *wh*-questions). The present project investigated interaction as an overarching construct over a large data set. Previous studies have shown that high turn count and short turn length are reflective of interaction (e.g., Alquraishi & Crawford, 2021; Csomay, 2012). Therefore, the present project used these two features in addition to raters' judgments of collaboration to create a composite score of interactivity level for ESL pairs to investigate the extent to which the pairs' level of interactivity is associated with certain linguistic features use.

Furthermore, to my knowledge, L2 peer interactivity and its relationship to L2 fluency has not yet been investigated. Most studies have focused on exploring L2 fluency in monologic tasks, while a few studies explored the impact of task modality (i.e., monologic vs. dialogic) on L2 performance showing that the interactive contexts (i.e., dialogic tasks) resulted in more fluent speech (Michel, 2011; Peltonen, 2017; Sato, 2014; Tavakoli, 2016; Witton-Davies, 2014).

Therefore, it would be of interest to investigate whether high interactivity (as opposite to low interactivity) would result in more fluent talk in L2 peer conversations. Describing peer interactivity phonologically and in terms of lexico-grammatical feature use, as mentioned in the first paragraph, are part of the first goal of the project.

To expand our knowledge of peer interaction, the second goal of the current project is to explore how interactivity could be impacted by task. Task designs and their effect on L2 performance have been the focus of Task Based Language Teaching (TBLT) research (e.g., Robinson, 2001) in which predetermined CALF measures (i.e., complexity, accuracy, lexical variety, and fluency) have been used. Studies reported that task topic affected L2 learners' performances as measured by CALF (e.g., Leaper & Riazi, 2014; Levkina & Gilabert, 2012; Michel et al., 2007; O'Loughlin & Wigglesworth, 2007; Skehan et al., 2012; Skehan & Foster, 2008; Tavakoli & Foster, 2008). The effect of task prompt (topic) has also been observed in research conducted using corpus methods (Alquraishi, 2020), where the results showed that the nature, content, and requirement of task affected L2 dyads' linguistic choices in task performance. Therefore, the present project investigated the possible impact of task on pairs' interactivity focusing on situational variables (Crawford & Zhang, 2021), including the general communicative purpose of task and the presence or absence of information (±Information) provided to students, as well as whether students were required to adopt a perspective (± Opinion).

2. Chapter 2- Literature Review

This chapter motivates the goals of the current project using previous literature. It first surveys L2 interaction in different areas of applied linguistics, including conversational analysis, second language acquisition, and corpus linguistics. Then, building upon the insights of previous research, the second section introduces the construct of L2 interaction in the current project and describes how it is measured (L2 interactivity metric). Following that, the background of L2 peer interaction assessment is provided. Next, since the study adopts a quantitative method to explore L2 interactivity, the third section reviews previous literature that implemented a quantitative approach to investigate L2 interaction. The subsequent sections then survey and rationalize the variables considered in the project, including the lexico-grammatical features selected for the study, L2 fluency in interactive (dialogic) tasks, the fluency features used in the study, and describe the task-related variables (i.e., individual task, the communicative purpose of task) that were explored in the project. At the end of the literature review, the questions that guide the project are provided.

2.1. Interaction in Applied Linguistics

In its broad definition, interaction has been defined in terms of communication where an output of one system serves as an input to another separate, independent system (Arundale, 2006). In a narrower definition, it has been described as a talk that is directed from one person to another and it has the potential for affecting the other person (Schiffrin, 1994). Interaction has been explored in different areas of applied linguistics (i.e., conversational analysis, second language acquisition, corpus linguistics) with varying aims to understand conversations either between native speakers, nonnative speakers, or both.

Interaction has been explored in conversational analysis (CA) research with a main focus on turn taking (e.g., turn allocation, floor gaining) which is considered the basic form of organization (Sacks et al., 1974). CA seeks to identify recurrent patterns or sequences of interaction (Wooffitt, 2005) and to identify the normative expectations that underpin such actions. Attention has also been paid to the analysis of the techniques and the system of turn taking (Sacks et al., 1974) as well as to different components (e.g., overlapping, repair) that occur in conversations (Schegloff, 2000). Research in CA also investigated the different functions of interactional moves such as the use of minimal responses (e.g., backchannelling)(Gardner, 1997).

The goal of research in CA is to understand how interaction is usually organized in naturally occurring conversations and to understand actions participants implement in conversational sequences (Schegloff, 2007). Using a CA model developed by Sack et al. (1974), studies investigated the systematic organization of turn taking in different contexts (e.g., professional communication, jurors' discussions) (Lenz, 1988; Manzo, 1996) and languages (e.g., Indonesian language; Caribbean Creole English, Ghanaian Pidgin English)(Ewusi, 2015; Maharani & Suratno, 2019; Sidnell, 2001). CA research has also focused on L2 learning to understand how language use and language learning are interconnected (e.g., Firth & Wanger, 2007; Markee & Kasper, 2004) such as studying repair practices and how lack of mutual understanding could hinder L2 learning (Rusk & Pörn, 2019; Seedhouse, 2004). While the CA research provides refined and in-depth investigations of the pattern of interaction in the spoken discourse, it mostly uses qualitative analysis over small datasets.

Research in second language acquisition (SLA) explores interaction with considerations to the Interaction Hypothesis (Long, 1981) which proposes that negotiation of meaning between L2 learners or between learners and L1 speakers promotes language development. In SLA, interaction

has been studied with regards to different interactive moves such as clarification requests, confirmation checks, and comprehension checks to understand how interaction can affect L2 comprehension (e.g., Long, 1981; Pica et al., 1987) and how negotiation of meaning, which includes use of these moves, can facilitate language acquisition and learning (e.g., Gass & Mackey, 2014). Scholars in SLA have also adopted sociocultural theoretical perspective to understand how L2 learners' use of language in interaction can be a source of second language learning such as investigating collaborative work (e.g., Storch's 2002 patterns of interaction) and peer feedback (Swain et al., 2002; Swain & Lapkin, 1998; Wigglesworth & Storch, 2012). In both strands of research, the aim is centered around how learners benefit from (and perform in) interactional environments with less interest in the effect of the degree of interactivity on language performance.

In the field of corpus linguistics, the interactive discourse has been studied in the academic context (e.g., academic lectures) of native English speakers taking class sessions in a variety of disciplines (e.g., business, education) and different levels of college instruction (e.g., freshmen, sophomore, graduate level). Generally, degrees of interactivity have been used as one of the parameters that distinguish among the spoken registers where they are classified into three degrees of interactivity (e.g., low, medium, and high) (Barbieri, 2015; Biber, 2006; Csomay, 2002; Kia, 2018). These studies (e.g., Barbieri, 2015; Csomay, 2002; Kia, 2018) mainly used the TOEFL 2000 Spoken and Written Academic Language (T2K-SWAL) corpus (Biber et al., 2004). Furthermore, Barbieri (2015) viewed interactivity as reflective of student participation in classrooms, using patterns of turn taking between teachers and students.

In corpus linguistics, the degree of interactivity has been measured using different operationalizations including the number of turns per total words (Biber, 2006), discourse mode (Simpson et al., 2003), and the number of interventions in classroom contexts (Morell, 2004). First,

interactivity has been operationalized as the number of turns per the number of words (Biber, 2006) which was further divided into threefold classification including low, medium, and high interactivity. Lectures of 10 turns per one thousand words were labeled with low interactivity. Lectures containing more than 25 turns per one thousand words were classified as highly interactive lectures, while lectures between 10 and 25 turns were considered medium in their interactivity. Second, interaction has been operationalized as the discourse mode in which the speech event is characterized based on the predominant type of discourse including monologic, mixed, and interactive discourse (Simpson et al., 2003). Simpson et al. defined interactivity by turns; however no cut off number of turns per one speech event has been specified for each type of discourse. Third, Morell (2004) measured interactivity by the number of interventions made by students in academic lectures in the EFL context in which they compared interpersonal discursive features produced in lectures with most (i.e., 30 interventions per three 50 minutes lectures) versus least (i.e., few interventions per three 50 minutes lectures) students' interventions. However, Morell operationalization was not very precise or detailed in the paper.

Furthermore, in the directions for future studies, Csomay (2002) pointed that classifying interactivity based on turn count may not be adequate suggesting that incorporating turn length is of relevance as well. Interactivity with lower mean turn length should be considered as more interactive than those with longer average turn length. Additionally, interactivity with larger standard deviations in turn length should be considered as less interactive. Larger standard deviations reflect situations where turns are very long while other turns are very short (Csomay, 2002).

Even though CA research employed turn-taking as the fundamental unit in their analysis, scholars in corpus linguistics adopted a quantitative approach to measure the levels of interactivity.

Building upon these corpus linguistic methods, the current project employed the count of turns and the length of turns to measure the interactivity of each text/conversation in the CCOT. Additionally, a third variable was introduced: raters' evaluation of collaboration, which will be further explained in the dissertation. The following section offers a detailed description of interaction as a construct and interactivity as a measure of that construct. It also outlines how the project measured interactivity using these three variables, while also justifying the inclusion of collaboration ratings in the measurement.

2.2. Defining the Construct of Interaction and the Interactivity Metric

The current project differentiates between two terms: interaction and interactivity. Interaction is a general term that refers to the context of verbal communication between L2 dyadic peers using the English language to complete a particular task that was assigned to them. The term interactivity, however, has a quantitative aspect to understand the quantity (degree) of interaction, where two people (L2 pair) could exhibit more, or less, interactivity (higher levels versus lower levels of interactivity) in their interaction. To measure pairs' interactivity, three variables were used including turn count, turn length, and raters' judgment of collaboration. The following paragraphs justify the inclusion of raters' judgment of collaboration to measure interactivity.

Utilizing solely objective variables, such as turn count (Biber, 2006) and turn length (Csomay, 2002), would provide a partial means of measuring interaction, as defined in this dissertation (i.e., the interaction of L2 dyads working together to accomplish an assigned task). Turn length and turn count may not always demonstrate that the interactional behaviors work toward serving the topic of the task. Even though scholars have shown that high turn count and short turn length are reflective of interaction (Alquraishi & Crawford, 2021; Csomay, 2002), they do not completely measure interaction as defined in this project. Example 1 is a mock conversation

that might be regarded as highly interactive (indicating high interactivity) based on its turn count

and turn length. The normalized turn count for this conversation is 500 turns per 1000 words, and

the turn length is two words per turn (thus suggesting high interactivity) (see Table 2-1). However,

this conversation would likely receive a very low interactivity score in relation to interaction over

the assigned topic (i.e., the task *Choosing a Patient*) because the pair chose not to adhere to the

task requirement (i.e., discuss and decide on one patient to be admitted in their clinic) (see

Appendix A for the complete task prompt).

Example 1.

1 A: hello
2 B: hi
3 A: I do not like this task
4 B: It's about obesity
5 A: I know
6 B: do you want to preform?
7 A: no
8 B: ok
10 A: bye
11 B: bye

Table 2-1

Example 1 interactivity information

Measurement	Value
Total words	22
Total turns	11
Normalized turn count	500
Turn length	2

Note. Normalized turn count= turn count/total words*1000; turn length= total words/turns.

To address this issue, utilizing raters' judgments is maybe essential, as they assess pairs'

performance (collaboration) in relation to the task topic. Ratings for performances in the CCOT

are determined by raters based on three components: task completion, style, and collaboration. The

collaboration component involves evaluating collaborative behaviors, such as expecting pairs to incorporate each other's ideas in their performances, working together, providing feedback, and responding to each other. Utilizing the collaboration score along with the pair's turn count and turn length may improve the validity of the measurement of interactivity, as students' collaborative actions may not be possible without the occurrence of turns.

For instance, students collaborating by engaging in each other's ideas or offering feedback may not be possible without some level of interactivity (i.e., taking more than one turn). See, for example, Crawford et al., (2019) which reported that high collaboration pairs produced significantly more turns than pairs of low collaboration. This means that individuals who incorporate more collaborative actions in their performance are supposedly more interactive than those who incorporate a few. However, the opposite may not be true; a pair that is highly interactive may not always show collaborative actions (as shown in our earlier example where they appear to be highly interactive; however, they do not seem to collaborate to complete the task). The following table (Table 2-2) provides a summary of the terms interaction and interactivity. Additionally, a detailed description of the interactivity measure that incorporates the three variables (i.e., turn count, turn length, and collaboration) is provided in the Methods section of the current project.

Table 2-2

Summary of the terms interaction and interactivity

Interaction (construct)	Interactivity (metric)
Refers to the context of verbal communication between L2 dyadic peers who use the English language to accomplish a specific assigned task.	It measures the level of interaction using turn count, turn length, and collaboration ratings. The three measures are combined to create a composite score of interactivity for each conversation between pairs.

Note. The interactivity metric is described in detail in the Methods section

2.3. Peer Interaction Assessment

As mentioned earlier, research in SLA viewed interaction as a means for language development in which students interact to learn and acquire L2 through certain interactional moves and negotiation of meaning (Del Pilar et al., 2000; McDonough, 2004; Philp et al., 2014; Sato & Ballinger, 2016; Sato & Lyster, 2007). However, scholars in another strand of research were more interested in analyzing and understanding the nature of collaboration (a process that could be incorporated in interaction) in the context of L2 assessment. These studies used qualitative coding (Galaczi, 2008; Storch, 2002) and analytic rubrics (Ahmadi & Sadeghi, 2016; Bonk & Ockey, 2003; Van Moere, 2006; Winke, 2013). In light of demonstrating the difficulty of assessing paired oral performance, McNamara, (1997) highlights the need for a better understanding of the co-constructed speech. For example, how can language examiners rate test candidates' collaboration where both interlocutors might affect how the conversation goes. To understand the nature of peer conversations in oral assessments, Galaczi (2008) proposed four main patterns of pair talk including collaborative, parallel, asymmetric, and blended interaction. Identification of each pattern lies on the extent to which mutuality (i.e., the level of speakers' engagement with each other's contributions) (Damon & Phelps, 1989) and equality (i.e., demonstrating equal degree of control over the direction of the task) (Van Lier, 1996) are evident in pairs' conversations. The collaborative pattern of interaction is characterized with high equality and high mutuality in which L2 partners take the opportunity to introduce topics and extend on their interlocutor's ideas. The parallel pattern of interaction, in contrast, is characterized with high equality and low mutuality in which partners initiate topics but are not likely to respond to or develop on each other's topics. In this pattern of interaction, speakers are more concerned with extending on their own contributions. Asymmetric interactional pattern involves a dominant speaker and a passive speaker. The

dominant partner contributes more to their task performance while the passive partner demonstrates a reactive role which results in low equality. The fourth interactional pattern is termed blended interaction which includes discourse features of two patterns of interaction. Another attempt to understand the collaborative patterns of interaction is Storch's (2002) work which proposed four distinct patterns including collaborative, dominant/dominant, novice/expert, and dominant/passive; however, his focus was on dyadic interaction in the context of performing different L2 writing tasks, not speaking assessment.

A second approach used to understand and evaluate collaboration is via using analytical rubric which has been utilized to evaluate the validity and reliability of peer oral assessments (e.g., Ahmadi & Sadeghi, 2016; Bonk & Ockey, 2003; Van Moere, 2006; Winke, 2013). For instance, Winke (2013) administered oral tests where L2 test takers performed two communicative tasks in small groups. Each test taker's performance was evaluated based on a rubric that followed the American Council on the Teaching of Foreign Languages (ACTFL) guidelines. The rubric also included criteria for communication taken from the Common European Framework of Reference (CEFR). The communicative element used a five-point Likert scale that included descriptors associated with collaboration such as asking an interlocutor to elicit an elaborated response and making appropriate responses to others' ideas or opinions. Likewise, Ahmadi and Sadeghi (2016) assessed pair and group oral performances using the CEFR analytic rubric. The rubric included an item related to collaborative behaviors such initiating discourse, facilitating discussion, and picking up turns using non-verbal and interactional cues.

In sum, scholars have explored the nature of collaboration in L2 oral assessment through the identification of qualitative interactional patterns or analytical rubric scoring. These studies predominantly concentrated on collaboration, allocating less emphasis to students' interactivity.

Also, they described collaboration linguistically using qualitative methods. An exception is made for Crawford et al. (2019) which described interaction quantitatively focusing on the collaborative aspect. They concluded that high levels of collaboration between dyads were associated with certain interactive feature use (e.g., first/second person pronouns, *wh*-questions).

In order to add to the contribution of the previous studies, the current project quantitatively explored the extent to which levels of interaction (regarded as a monolithic construct that is measured by turn count, turn length, and collaboration score) were associated with certain linguistic features (i.e., lexico-grammatical features and fluency features). A relevant question is the extent to which interactivity, varying in degrees, incorporates the utilization of distinct lexico-grammatical features that may or may not manifest in collaborative interactions. For this project, the Corpus of Collaborative Oral Task (CCOT) (Crawford & McDonough, 2021) was employed due to its inclusion of 776 paired interactions of students conducting oral tasks within the L2 assessment context.

2.4. Quantitative Descriptions of the L2 Interactive Discourse

As previously mentioned, only a few studies have quantitatively described interaction in L2 assessment. However, several studies have investigated the interactive discourse in different contexts (Biber, 1988, 2004; Friginal, 2009; Staples et al., 2017). An influential early work in this domain is Biber (1988), where linguistic characteristics of spoken and written language were explored. Biber's examination of spoken texts encompassed English conversations (e.g., face to face, telephone, interviews, debates) of native speakers. Biber's analysis of conversational discourse highlighted the prevalent use of interactive features such as first and second person pronouns, as well as *wh*-questions. Additionally, Biber reported the usage of other specific features

in conversations, including the utilization of reduced surface forms (e.g., *that* deletion and contraction).

Among the studies that quantitatively explored the interactive discourse in L2 assessment are Alquraishi & Crawford (2021) and Crawford et al. (2019). Alquraishi and Crawford (2021) described the L2 collaborative task language through identifying co-occurring linguistic features and interpreted them functionally. The study showed five dimensions in the task based interactive discourse including expression of personal thoughts and judgments, interactive vs. individual presentation, reaching agreement vs. informational discourse, narration of human experiences vs. evaluations of concepts and objects, and expression of preferences. In describing the interactive vs. individual presentation dimension, Alquraishi and Crawford (2021) showed that the positive load of this factor is reflective of interaction which included high use of turn count, the word *yes*, word count, discourse particles, and *wh*-questions. In their study, they described interaction as involving a frequent exchange of turns, often accompanied by discourse particles and *wh*-questions. These elements serve to manage interaction and to prompt responses from interlocutors. Additionally, the interactive part of this dimension was described as having frequent exchanges of short turns which resulted in a relatively high overall word count.

Another study that quantitatively described one aspect of interaction is Crawford et al. (2019). The study concentrated on collaboration, which is one of the interactional processes that can be incorporated into conversations (Jacoby & Ochs, 1995). In their study, Crawford et al. (2019) demonstrated how collaborative levels (high versus low) can be distinguished based on the lexico-grammatical features used by L2 speakers in dyadic conversations. The study included 80 ESL students who conducted paired oral tests, and their performances were assessed using an analytic rubric that included a collaboration rating component. Transcripts of the students' interactions

were analyzed using the Biber Tagger (Biber, 1988), and the results revealed that high collaboration was associated with first and second person pronouns, *wh*-questions, *that* deletion, and subordinate conjunctions, while low collaboration was characterized by nominal forms.

The previous quantitative studies provided valuable insights into the field to enlighten our understanding of the interactive discourse, however, none of them have described pairs' interactivity levels. For instance, Biber's (1988) study was focused on register variations (i.e., spoken versus written) in native speaker contexts while Alquraishi and Crawford (2021) focused on linguistic variations in L2 task performances. The only study that described one aspect of interaction was Crawford et al. (2019) which focused more on the collaborative part of interaction using raters' judgments. In the present project, the construct of interaction was measured using interactivity scores which included objective variables (i.e., turn count, length of turn) and a subjective variable (i.e., raters' judgment). The validity of the objective measurements can be supported by Alquraishi and Crawford's (2021) and Csomay's (2002) studies which demonstrated that high turn count and short turn length are reflective of interaction.

2.5. Lexico-grammatical Features in the Current Project

Previous research provided a broad set of conversational and interactional features (Biber, 1988; Biber et al., 1999). While including these interactional features is important since they are likely to be used by highly interactive dyads, it is also pertinent to include other features that are not necessarily described as interactional. Based on Alquraishi and Crawford (2021), a multidimensional analysis on the CCOT showed that dimension two (interactive vs. individual presentation) included two poles, one is interactional, and the other is related to an informational style of presentation. In the interactive side of this dimension, pairs used interactional features (e.g., *wh*-questions, response forms such as *yes*, discourse particles), while in the individual

presentation side of the dimension, pairs used the information given to them in the task prompts where they used longer words and turns. Furthermore, even though the CCOT is a corpus of dyads interacting with each other, Alquraishi and Crawford (2021) showed that in the negative pole of the third dimension (e.g., reaching agreement vs. informational discourse), students used linguistic features related to nouns and lexical density (e.g., place nouns, pre-modifying nouns, nominalizations). In this dimension, pairs used pre-modifying nouns, place nouns, and nominalizations to condense and pack information in their informational style of interaction. Therefore, it is necessary to include not only the features that have been reported to be highly interactional but also a wider range of features (e.g., informational). See the Methods section for the background of the selected features and Table 3-8 in the Methods for their list.

2.6. L2 Fluency in Dialogic Tasks

Fluency has been used to evaluate L2 proficiency (Peters & Guitar, 1991), and it has been considered as an indicator of second language proficiency (De Jong, 2018; Housen et al., 2012). Previous studies used different definitions of fluency. Some studies refer to fluency as the speakers' ability to generate L2 speech automatically (Filmore, 1979) and their ability to communicate thoughts accurately and rapidly (Lennon, 1990). Other studies, however, use this construct as an overarching term for several pronunciation features that can be objectively measured (e.g., pause duration, speech rate) which have been further classified into three categories: breakdown fluency, speed fluency, and repair fluency (Tavakoli & Skehan, 2005). Repair fluency refers to the frequency of utterance reformulation, word and phrase repetition, and false starts. Breakdown fluency includes pauses and silences occurring in produced speech while speed fluency refers to the speed of language produced by speakers, usually measured using speech rate (Kormos & Dénes, 2004) and mean length of run.

The majority of studies investigating L2 speaking fluency have been conducted on speech produced in monologic oral tasks, while few studies looked into such construct in dialogic tasks. These few studies investigated the effect of task modality (monologic vs. dialogic) and reported that L2 speakers tended to exhibit higher levels of fluency (e.g., higher speech rate) in dialogic tasks (Michel, 2011; Peltonen, 2017; Sato, 2014; Tavakoli, 2016; Witton-Davies, 2014). Furthermore, Choi et al., (2021) and Ghanem (2021) investigated L2 in dialogic tasks specifically looking at the effect of task-related features (i.e., communicative purpose) on L2 fluency. They showed that the communicative purpose of task affected some fluency features. Choi et al. (2021) compared three types of communicative purposes of L2 dialogic tasks including making a decision, persuasion, and selecting from alternatives. The findings showed that the communicative purpose of task significantly affected speech rate with L2 produced during selecting from alternatives tasks showing higher levels of speaking rate compared to L2 produced during persuasion tasks and decision making. Similarly, based on descriptive information, Ghanem (2021) showed trends of speech rate being higher in a selecting from alternatives task (named informative task in the study) compared to a persuasion task (labeled opinion based task in the study). Ghanem also reported that the persuasion task showed better fluency features in which L2 participants produced fewer and shorter silent pauses, longer runs, and wider pitch range. In contrast, participants in the selecting from alternative task produced longer and higher numbers of silent pauses. Previous research has shown that the communicative goal of the task affected L2 fluency. The current project explored a different angle to further explore L2 fluency in the interactive context by investigating the impact of interactivity level on L2 fluency. Since it has been found that dialogic tasks (which involved interactive L2 production) exhibited an increased

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L2 fluency (compared to monologic tasks) as mentioned earlier, it is possible that higher degrees of interactivity would be associated with more fluent L2.

2.7. Fluency Measures

Fluency features have frequently been explored within the framework of L2 oral assessment. Among the commonly studied features are speech rate, silent pauses, length of silent pauses, and filled pauses (e.g., um) (Staples, 2021). The fluency features incorporated into the current project were selected based on two criteria: utilizing common measures and incorporating features that have been identified as indicative of L2 fluency. Previous studies have reported that the operationalizations (measurements) of fluency (among other constructs) are inconsistent throughout the literature which is a serious challenge in task-based language teaching (TBLT) research (Lambert & Kormos, 2014; Plonsky & Kim, 2016). This can be problematic when it comes to comparing the findings of studies. The same claim has been reported by Blake (2006) who compiled a comprehensive list of the fluency measures used in the literature, encompassing more than 45 different measurements. The author emphasized the importance of focusing on a set of measurements that can be employed across various studies for the sake of the advancement of the field. Based on Blake, the most commonly used measures of fluency are speech rate and pause.

Moreover, a preliminary pilot study was conducted to explore the extent to which studies in Task-Based Language Teaching (TBLT) utilized fluency measures, along with other variables. The results showed that a significant portion of the studies employed speech rate, measured by the number of syllables per minute. Additionally, pauses and filled pauses per minute were frequently utilized. Therefore, the project implemented these measurements.

The appropriate threshold for pause length remains a subject of ongoing debate, as a consensus has not yet been reached regarding the specific pause duration that can effectively

capture meaningful distinctions between speakers (Towell et al., 1996). Nevertheless, for this project, a cut-off point of .25 was utilized. This choice stems from its reported efficacy in measuring L2 fluency (De Jong & Bosker, 2013). Besides being widely used in studies, both speech rate and pauses have been recognized as robust indicators of fluency (Kormos & Dénes, 2004; Lennon, 1990; Riazantseva, 2001). Research has also shown that speech rate increases with English speakers of higher proficiency (Kang, 2013; Kang & Johnson, 2018), where they produced longer mean length of run (MLR)(Kang & Johnson, 2018). Furthermore, MLR has been established as a good indicator of fluency(Kormos & Dénes, 2004; Towell et al., 1996). See the Methods section (Table 3.12) for the description of the fluency features included in the study.

2.8. The Effect of Task on L2 Performance

In task-based language teaching (TBLT) research, task has been used as an instrument to elicit L2 language. Some studies used tasks and the L2 produced to complete them as treatments or interventions to understand the effect of task manipulation (e.g., task features, situational and contextual variables, participant variables) on L2 development and how task design and conditions affect language learning (Kim, 2012; Kim & Tracy-Ventura, 2013; Révész, 2009). Other studies are interested in investigating theoretical claims by testing hypotheses related to task design (e.g., task complexity). Studies in this area are also interested in testing task implementation (e.g., task planning, task repetition) and learners characteristics during task performance (see Plonsky and Kim (2016) for a comprehensive review). Two of the main theories that have been tested are the Cognition Hypothesis (Robinson, 2001) and the Limited Attentional Capacity (LAC) (Skehan, 2009) which are centered around the effect of task complexity on L2 performance and interactional competence (see Jackson and Suethanapornkul (2013) for a review).

The LAC hypothesis views the working memory, or attention, as a limited resource. Therefore, L2 performers must prioritize where they allocate their attention. It proposes that a complex task (i.e., task that requires a lot of cognitive attention to its content) will increase the load on the cognitive resources leading to less attention available to be devoted to language forms. In contrast, simple tasks will reduce the load on the cognitive resources making task performers pay more attention to language forms. An equally well-known theory is the Cognition Hypothesis which proposes a triadic framework. The framework includes elements in which tasks can be described in relation to the demands that are placed on the L2 task performer. The framework describes the complexity of task in terms of three dimensions including 1) the complexity of the task, 2) the conditions in which the task is preformed, and 3) the difficulty of the task. The first component, the complexity of the task, can be further described through two dimensions including resource dispersing features (e.g., planning time, prior knowledge) and resource directing feature (e.g., few versus many elements, casual versus spatial reasoning). Resource directing features of a complex task are believed to direct attentional resources to the production of more accurate, more complex, and less fluent L2. Resource directing features include using topics that require performers to deal with information related to here and now situations (as opposite to there and then topics) as well as situations in which certain types of reasoning (e.g., spatial vs casual reasoning) are required. The presence of spatial reasoning demands as well as there and then situations in tasks are assumed to direct learners' cognitive resources to attend to the reasoning and linguistic demands. The absence of these requirements is believed to free the cognitive resources, making task performers attend to other areas of task (Robinson, 2015). Both of Robinson's and Skehan's hypotheses highlight the potential effect of task topic on L2 performance.

Several studies have investigated the effect of task topic, or prompt, on L2 learners' performance as measured by different CALF constructs (i.e., complexity, accuracy, lexical variety and fluency). These studies explored the impact of topic familiarity (e.g., Leaper & Riazi, 2014; Skehan et al., 2012; Skehan & Foster, 2008) and the information provided in task prompts (e.g., Levkina & Gilabert, 2012; Michel et al., 2007; O'Loughlin & Wigglesworth, 2007; Robinson, 2001; Tavakoli & Foster, 2008) on L2 performance using CALF measures. These two strands of research have shown that topic familiarity and task prompt information affected L2 performance. For example, in a review by Skehan and Foster (2008) on the impact of familiar topics (i.e., using personal information to complete tasks) on CALF measures, results showed that familiar topics led to more accurate and fluent L2 performance but led to less complex language production. Furthermore, Robinson (2001) examined task prompt information (i.e., using small and simple map versus larger and more complicated map) and found that complex map task resulted in more lexical variety while simple map task resulted in more words per C-units. Although it did not reach statistical significance, the complex map condition showed trends toward more accurate L2 production. Generally, previous research has shown that task prompt affected L2 performance as measured by certain CALF measures.

In a more recent study that focused specifically on L2 interaction, Alquraishi (2020) investigated the impact of task topic on L2 performance using corpus methods. The study applied multi-dimensional analysis (MDA) on the CCOT corpus which resulted in five linguistics dimensions (i.e., expression of personal thoughts and judgments, interactive vs. individual presentation, reaching agreement vs. informational discourse, narration of human experiences vs. evaluations of concepts and objects, and expression of preferences). Alquraishi explored the extent to which task related variables (i.e., communicative purpose, planning time, completion time, and

task topic) impacted the scores of the five dimensions. The finding showed that there was limited or no effect of communicative purpose, planning time, and completion time on dimension scores while task topic showed large effect sizes.

Alquraishi suggested that the nature of the task affected students' linguistic choices. For example, students avoided personal stance (i.e., *I think*) in tasks on advertisement, making assertive and convincing statements to advertise their products, while they tended to use personal stance in other tasks where there is more room for argument. The results also suggested that task prompt requirements affected students' language use. For instance, dyads produced more interactional behaviors of eliciting and reaching an agreement (e.g., *do you agree with me?*) in tasks that require reaching an agreement. Other task elements that impacted L2 performance included the language and the content used in the task prompt. For instance, prompts that involved use of *want to* and *like to* exhibited greater use of these structures in the interactants' performances.

The same observation of task effect on L2 performance has also been reported in a previous pilot study that was conducted to explore explicit disagreement phrases produced by dyads. The study originally aimed to investigate the impact of gender matching (i.e., male-male, female-female, male-female) on dyads' production of explicit disagreements including weak and strong disagreements using a total of 80 texts taken from the CCOT corpus. The study concluded that gender matching did not affect disagreement production. However, a post hoc analysis was conducted to examine the effect of task on disagreement production. The analysis was applied on a subset of the data (i.e., 65 texts) that included three tasks: *Investing in Science Funding* (n=18), *Opening a Barbershop* (n=23), and *Choosing a Patient* (n=24). These three tasks shared the same communicative purpose (i.e., selecting from alternatives). The results revealed that the impact of

task topic was statistically significant where dyads produced less disagreement phrases in the *Choosing a Patient* task.

To sum up the point of this section, hypotheses in the TBLT field and previous research highlighted the possible impact of task on L2 performance. Although the TBLT research has been criticized for using inconsistent CALF measures across the field (Plonsky & Kim, 2016), the studies showed that task elements affected L2 speakers' performance as measured by these constructs. Such effect of task has been observed in research conducted using corpus methods as well. Therefore, it would be of interest to explore the impact of task-related variables on pairs' interactivity (i.e., individual task, task situational variables).

Previous studies have analyzed interaction in L2 assessment mostly qualitatively, with a focus on its collaborative aspect, while giving less consideration to the degree of interactivity among participants. Therefore, the project explores the impact of interactivity on L2 language use (lexico-grammatical features and fluency features). Additionally, the potential influence of the individual task on L2 students' interactivity levels remains unexplored.

The study holds significance for researchers in the field of applied linguistics. Scholars have emphasized the importance of understanding the nature of interaction within the framework of peer oral assessment (Galaczi, 2008; McNamara, 1997). Thus, the current project employed quantitative methods to enhance our understanding of the linguistic features that are distinctive in interactive performances compared to less interactive ones. The project is also relevant to TBLT researchers and practitioners, as they can gain insights into the task characteristics that are likely to encourage higher levels of interactivity. The study's framework revolves around three key questions:

1- What is the relationship between pairs' interactivity (interactivity composite score) and their use of lexico-grammatical features?

2- What is the relationship between pairs' interactivity (interactivity composite score) and their L2 fluency?

3- To what extent do individual task and task situational variable (i.e., communicative purpose) affect L2 pairs' interactivity (interactivity composite score)?

3. Chapter 3- Methods

In this chapter, the unit of analysis, which is applied to all three questions, is briefly described. Next, in section 3.2 (which discusses variables considered in the interactivity level metric), the justifications for including certain variables in the measurement of interactivity are provided, along with explanations for why others (i.e., turn count per 1000 words) are not included. This discussion is followed by three main sections that describe the methods of the three questions of the dissertation, including the relationships between students' interactivity and linguistic features, the relationships between students' interactivity and fluency, and the effect of task on pairs' interactivity level. Each section provides descriptions of (1) the data set taken from the CCOT, (2) the independent variables of the question, and (3) the statistical tools utilized to answer the question. It should be noted that the variable of interactivity level (the interactivity composite scores) (described in detail in the method of the first question) was used for the second and third research questions as well.

3.1. Unit of Analysis

Previous studies in corpus linguistics have explored interaction using text without separating speakers' contributions (Biber, 2006; Csomay, 2002). For example, Biber (2006) categorized variations of interactivity using three turn count cut off points—low, medium, and high interactivity—for individual texts. Similarly, the current project evaluates the level of interactivity per one text (conversation), not per speaker. Because one of the project's goals is to explore the effect of tasks on interactivity, it would not be informative to separate the conversations per one speaker, as tasks are performed by two L2 speakers in the CCOT. The measurement of the interactivity level of each text is described in section 3.3.2, where the interactivity score is calculated based on three variables: turn count, turn length, and collaboration ratings.

3.2. Variables Considered in Interactivity Measurement

Previous studies showed that turn count and turn length is indicative of interactivity (e.g., Alquraishi & Crawford, 2021; Biber, 2006; Csomay, 2002). Therefore, these two measures were utilized in the current project to measure pairs' interactivity. Also, to improve the interactivity metric, raters' judgments of pairs' collaboration were utilized as well. This section demonstrates how including the collaboration rating could improve the measurement of interactivity in relation to the construct of interaction introduced in the study using authentic data from the CCOT corpus. Additionally, this section suggests that accounting for the duration of the conversation could also be helpful to measure interactivity. It is important to note, however, that this measure of interactivity is exploratory and requires validation in future studies. Please refer to Chapter Seven (Section 7.6) for limitations and future suggestions regarding the interactivity measure.

To illustrate that the collaboration ratings might be needed to measure pairs' interactivity, interactivity as measured only by turn count and turn length is applied to two texts extracted from the CCOT corpus (Examples 1 and 2 below). These conversations were conducted by two intermediate pairs who participated in a task named *Choosing a Patient*. When relying solely on the measurements of turn count and turn length, Example 2 should be considered more interactive (normed turn count=51.14; normed turn length=19.5) than Example 3 (normed turn count=34.4; normed turn length=29.1) (See Table 3-1), due to its higher turn count and shorter turn length. However, upon closer examination of Example 2, the conversation does not appear inherently more interactive than Example 3. Further justification is provided in the next paragraph.

Table 3-1

Turn count per 1000 words and turn length of Examples 2 and 3

	Example 2	Example 3
Normalized turns (per 1000 words)	51.14 per 1000 words	34.40 per 1000 words
Turn length	19.50	29.10
Total turns	9.00	11.00
Total words	176.00	320.00

Example 2.

1 A: Uh, the student Melia is a university freshman uh she think uh –she think that she is too fat and she wants to lose…lose 15 pounds and she uh because her clothes doesn't fit she don –she don't want to buy many new clothes. Uh she is very busy to –for her her study work. She must studies at library until 12:00a.m. **(Silence for more than ten seconds)** Uh, she is in class from 8:00 am until 7:00 pm uh because he –she is so busy so uh she's – she didn't eat meals and just buy some snacks at the library. Uh, this is the reason why she is uh so fat uh…. **(silence for ten seconds)**. Uh uh Melia want to lose weight so she go to the hospital and ask the… doctor to give her some some recommend – recommendations about how she can best lose weight uh what…uh...(silence for more than ten seconds) uh
2 B: Is he a freshman in the university?
3 A: Mm?
4 B: Is he a freshman in the university?
5 A: Yeah.
6 B: Ah ha.
7 A: I don't know.
9 B: Uh, for most time he is in the class.
(End of the conversation)

Example 3.

1 B: Actually uh I want to talk about uh my patients Jack. He has uh some problem a big problem he's sleep just a little about uh four hours a day.
2 A: And uh for me, I will talk about Cindy. It has uh obese uh parents because they don't have any exercise in his uh day.
3 B: Mm, I see your points. But Jack uh he has another problem (clear throat) he eats –ate McDonalds a lot uh you know McDonalds it's not healthy it effect uh his –his health a lot.
4 A: Uh, Ok. But uh Cindy uh she works uh a long hours uh in his day and she can't d-do the exercise or uh help herself.
5 B: Mm-hmm I see. Uh but but Jack has…big problem with hearts. Has heart problem in his family and it's big problem for Jack he's u-unhealth –unhealthful for Jack.
6 A: Yeah, that's problem. Uh the…the Cindy uh she has gained twenty pounds uh in her body. And we uh I think we should uh…help her.
7 B: Why not we can but uh you know about the Jack is uh he's can't he's can't do anything he just he's like computer and he sits at desk all day because he can't

move sometime he has some problem. For that I think Jack he has a lot of problem. And what do you think?

8 A: Uh, Cindy uh she uh eats junk food all day and other hand uh she has uh a a big uh a big uh gained in her body. But I think we should help y-uh help Jack because it has a heart problem that is a big problem for uh uh Jack.

9 B: That's fine, thank you very much. That's uh I think Jack really has problem. What do you think professor?

10 A: I think uh I agree about Jack and I agree about you.

11 B: Ah that's fine. Thank you very much.

(End of the conversation)

As can be seen in the first turn in Example 2, participant A is clearly not engaging in interactive behavior, where the student is dumping information onto the listener. Additionally, prolonged silent pauses lasting over ten seconds are noticeable (the silent pauses are in bold), indicating a lack of interactivity. During these extended silences, participant B could have contributed to the conversation, but due to the absence of interactivity (here, caused by speaker B), a long turn was produced by participant A. The rest of the turns do not seem to be significantly contributing to the task where the pair is exchanging short turns that do not successfully add to their task performance.

In fact, Example 3 is much more interactive (based on the definition of the construct of interaction which is pair interacting to accomplish a specific task) than Example 2 despite having longer turns and a lower normalized turn count (using turn count and turn length as the only measures). Both L2 speakers actively produce relevant contributions to the task, and (unlike speaker A in Example 2) they relatively do not appear to exchange extensive chunks of information with each other.

To address the issue of interactivity measurement raised in the previous paragraph, it would be useful to normalize the turn count to 60 seconds rather than 1000 words. This means that time is now taken into consideration. Table 3-2 shows the turn count of each conversation (Examples 2

and 3) as normalized to 60 seconds (turn count/total time*60). With this revised turn count measurement, Example 3 (turn count = 3.6 per 60s) is now deemed more interactive than Example 2 (turn count = 2.9 per 60s). This measurement is appropriate because the pair in Example 3 not only engaged in an effective interaction that allows them to accomplish the assigned task but also received higher collaboration scores from two trained evaluators (see Table 3-2). Also, this measurement accounts for the time of the conversation, leading to a better measurement (specifically in conversations where pairs produce prolonged silent pauses). In the following paragraph, the third variable (i.e., raters' judgment of collaboration) that was used to measure the interactivity scores in the current study is discussed.

Table 3-2

Turn count as measured per 60 seconds and raters' judgment for Examples 2 & 3

	Example 2	Example 3
Collaboration	1 (out of 4)	3 (out of 4)
Total turns	9	11
Total time in seconds	184.00	182.00
Normed turn count /60s	2.90	3.60

Performances in the CCOT were scored by raters who considered pairs' interactions in their ratings of three components including task completion, style, and collaboration. The collaboration component included evaluations of interactional behaviors with raters expecting pairs to engage each other's ideas in their performances, work together, offer feedback, and respond to each other. As can be seen in Table 3-2 above, raters assigned a notably lower collaboration score to Example 2 compared to Example 3, even though the initial measurement (based on turn count per 1000 words and turn length) suggested that Example 2 was more interactive. Hence, utilizing the collaboration score alongside the pair's turn count per 60 seconds and turn length may improve the measurement of interactivity.

The following table (Table 3-3) shows the interactivity scores of Examples 2 and 3 with the three variables (collaboration scores, turn count per 60 seconds, and turn length) considered in the interactivity measurement. Example 2 received a very low score (averaged composite value = -1.01) compared to Example 3 (averaged composite value = -0.23). As evident, Example 2 is four times lower than Example 3 in their interactivity. Thus, it appears that this composite score provides a reasonably effective measure of interactivity.

Please note that the detailed calculation of the interactivity composite score using the three variables (collaboration scores, turn count per 60 seconds, and turn length) is provided in section 3.3.2.

Table 3-3

Interactivity composite score of Examples 2 and 3

	Turn/60s	Turn length	Collaboration	Composite	Ave. composite
Example 2	-0.72	0.52	-2.83	-3.03	-1.01
Example 3	-0.54	0.09	-0.25	-0.70	-0.23

Note. Detailed description of the composite interactivity score calculation is provided in section 3.3.2.

3.3. The Relationships between Students' Interactivity and Lexico-grammatical Features (First Question)

3.3.1. The Corpus of Collaborative Oral Tasks (CCOT)

The project focuses on a spoken interactive domain. Therefore, the first question encompassed the entire collection of the Corpus of Collaborative Oral Tasks (CCOT) (Crawford & McDonough, 2021). The CCOT corpus comprises 776 texts (totaling 268,324 words), consisting of conversations (paired oral tests used for formative assessment purposes) conducted by English language students in an ESL setting. Students in the corpus engaged in 24 different tasks. Although these tasks varied in content, they shared the task characteristics identified by Ellis, (2003, 2012),

which include: 'a) tasks primarily focus on meaning (as opposed to form); b) tasks involve a functional need to use language and contain some type of 'gap'; c) tasks allow learners to utilize their own linguistic resources to complete the task; and d) tasks have a clearly defined outcome' (Crawford & McDonough, 2021, p.9). The 24 different tasks include three general communicative purposes: four persuasion tasks, eight decision-making tasks, and twelve selecting from alternatives tasks (see Table 3-4 below for the overview of the CCOT tasks). Even though these different tasks included different communicative purposes, all of them were categorized as two-way, open-ended convergent tasks based on Pica et al. (1993) categorization. Each text in the corpus was generated by a pair of students who belonged to the same English proficiency level (i.e., class in the program). A total of 313 texts were produced by students in level 1, amounting to 93,181 words. These students received in-house proficiency scores equivalent to 32 to 44 on the TOEFL iBT. Additionally, 372 texts were performed by students in level 2, totaling 138,705 words, and their proficiency scores ranged from 45 to 56 on the TOEFL iBT. Furthermore, 90 texts were generated by students in level 3, with a combined word count of 36,438, and their proficiency scores ranged from 57 to 69 on the TOEFL iBT. An overview of the tasks is provided in Table 3-4 below.

Table 3-4

An overview of the CCOT tasks

Communicative purpose	Topic	English proficiency level	Number of texts	Number of words	Mean words per text
Persuasion	*Advertisement*	1	73	19, 641	269
	Cancer advice	3	14	5614	401
	Avoid an extreme sport	1	16	5750	359
	Workplace monitoring	3	15	6687	446
Selecting from alternatives	*Choosing a patient*	2	104	35, 675	343
	Crime statistics	3	17	52, 56	309
	Election	2	37	13, 779	372
	Hiring	2	16	5024	314
	Choosing an extreme sport	1	17	4532	267
	Investing in a famous entrepreneur	2	21	7510	358
	Investing in science funding	2	37	14,799	400
	Opening a barbershop	2	47	19,902	423
	Awarding a scholarship	1	16	6556	410
	Sleep clinic	2	21	8493	404
	Selecting a store to open	2	46	18,975	413
	Crime and economy	3	13	5459	420
Decision making	*Chen problem*	1	56	13,855	247
	Matt test score	1	18	4187	233
	Music and vocabulary	3	13	4880	375
	Non-verbal communication	3	18	8542	475
	Presentation on healthy food	2	27	9016	334
	Presentation on immigration	2	16	5532	346
	Spanking	1	39	13,557	348
	Voluntary simplicity	1	78	25,103	322

3.3.2. *The Composition of the Interactivity Scores*

The composite scores of interactivity include objective variables (turn count and turn length) and a subjective variable based on an averaged raters' judgments of pairs' collaborations. The turn count was measured by dividing the number of turns of the text by the total length of time of the text and then was normalized to 60 seconds (i.e., (turn count of text/total time of text) *60s). Turn length was measured by dividing the total words spoken during the pair's interaction by the total turn count (i.e., total words/turn count). The coding of turn count and turn length were taken from the data of a previous study (i.e., Alquraishi, 2020). The turn counts of the entire corpus were also coded again manually by the researcher. The time of each conversation was manually extracted from the texts where the duration of the conversations were reported by the transcribers of the CCOT corpus. The collaboration score is the average of two scores provided by two trained raters based on a rubric of collaboration (See Table 3-5 for the summary of the variables of the composite score and see Appendix A for the rubrics of the collaboration scores). Inter-rater reliability of the raters' rating of collaboration was computed and the results showed a high coefficient alpha value of ($\alpha = .91$).

Table 3-5

Measurements used to create the composite scores of interactivity

Independent variables	Measurement
Turn count	(Turns/total length of conversation in seconds)*60s
Turn length	Total words of text/turn count
Collaboration score	The average score of two rater judgments

Note. These variables were combined for the composite interactivity score

The variables were combined to produce one interactivity score. To do so, the values of each variable were standardized using Z-scores. The Z-score of interactivity (whether turn count, turn length, or collaboration score) of one text indicates the position of that text's level of interactivity

relative to the population's (texts) mean level of interactivity. The Z-scores were produced using SPSS for each variable then these scores were combined to generate one interactivity score for each text. Since shorter turns reflect higher interactivity (Alquraishi, 2020), the Z-scores of the turn length variable were reversed by multiplying them by minus one. In other words, the composite score of interactivity for each text was calculated as follows: (Z score of turn count + (Z score of turn length*-1) + Z score of collaboration)/3. The composite score was averaged (i.e., divided by 3). The score was averaged to allow us to have a standard deviation (SD) of one unit (instead of the three units of SD of each variable added together). It should be noted that whether the composite score was averaged or not, such calculation does not affect the results of the statistical analyses of the study. It was only averaged to have an easier interpretation of the scores. See Table 3-6 for the descriptive information of the composite scores of the CCOT files.

Table 3-6

Descriptive information of the CCOT data using the composite score of interactivity

N	Min	Max	Mean	Med	SD
769	-4.25	2.29	0.00	.063	0.79

Note. Seven texts in the CCOT were not included as either the text or the collaboration scores were not available.

To ensure that these three variables are internally consistent, a Cronbach's Alpha test was conducted and the items (i.e., turn count, turn length, and collaboration scores) received an acceptable value of consistency (α =.70). Also, Pearson's correlation coefficient tests showed that the three variables had significant weak to strong relationships (see Table 3-7). Turn count and turn length showed a strong association because they shared one element (i.e., turn count) in their calculation. Although turn count and turn length exhibited strong association (r=.652), they are not measuring the same thing; turn length measures the average length of turn in each text, while turn

count measures the number of turns produced while accounting for the duration (time) of the conversation. Therefore, both variables tell us about interactivity, however, they measure different elements in the conversation.

Furthermore, to ensure that such calculation of the interactivity composite score appropriately reflect levels of interactivity, a general inspection of the data (texts) was conducted. The inspection showed that texts with very low interactivity scores (e.g., -2.90) often produced turn counts that tended to be notably low (e.g., two turns) and produced very long turn. On the other hand, texts that received high interactivity scores (e.g., 1.59) displayed an active exchange of turns and meaningful interaction related to the topic of the task.

Table 3-7

Correlations between the interactivity variables

	Turn length	Turn count/60s	Collaboration score
Turn length	-	-.652**	-.380**
Turn count/60s		-	.279**
Collaboration score			-

Note. **Correlation is significant at the .001 level (two-tailed)

3.3.3. *Lexico-grammatical Features*

As mentioned earlier in the literature review, the study encompasses a wide range of linguistic features. Since the study explores the construct of interaction, the selected features encompass those that have been associated with the interactive context. Additionally, this project treats interactivity as a continuum, where the extremes are deemed as most interactive and least interactive, respectively. Drawing from previous literature, the following outlines the primary linguistic features chosen for the project and identifies which of these are more closely linked to interactive contexts, as opposed to features that have been linked to less interactive or more informational contexts.

Pronouns. Many studies have considered pronouns to be relevant in the context of interaction (Alquraishi, 2020; Biber, 1988, 2004; Crawford et al., 2019; Csomay, 2004; Morell, 2004). Specifically, first and second person pronouns are frequently used in the interactive discourse (Biber, 2004; Morell, 2004) to refer to both the speaker and the listener within an ongoing conversation (Biber, 1988). Pronouns (including first, second, and third person pronouns, pronoun *it*, and demonstrative pronouns), among other features, have been described as involved, interactional, and reduced in form, with a non-informational focus (Biber, 1988). In university classroom discussions, pronouns, particularly first and second person pronouns, have been described as actively engaging participants in interactive dialogues (Biber, 1988; Csomay, 2004). Third person pronouns, however, have been associated more with the narrative function (Alquraishi, 2020; Biber, 1998; Csomay, 2004), discussing elements outside the immediate physical space within the context of the interaction (Csomay, 2004). Furthermore, Crawford et al. (2019) specifically investigated two tasks from the CCOT corpus and found that pronouns played a distinctive role in collaboration. First person pronouns were utilized as tools to offer comments, while second person pronouns were employed to respond to a partner's input, either through agreement, offering compliments, or expressing politeness (e.g., thank you) (Crawford et al., 2019).

Wh-questions. *Wh*-questions have been shown to be used to exhibit interactive behaviors (Alquraishi, 2020; Biber, 1988, 2006; Biber et al., 1999; Crawford et al., 2019; Morell, 2004). Questions, in general, are considered interpersonal since they signal a wish for mutual dialogue (Morell, 2004). It has been reported that different forms of questions were present in classroom sessions that adopted interactive styles (Morell, 2004). Questions are among the features that speakers use to engage their audience (Biber, 2006). Moreover, *wh*-questions are described as

occurring in contexts with interactive styles (Alquraishi, 2020; Biber, 1988; Biber et al., 1999) and are indicative of personal involvement, commonly occurring with pronouns (first and second person pronouns). In a study conducted on students performing the collaborative tasks of the CCOT corpus, Alquraishi (2020) described *wh*-questions as tools used by participants to elicit contributions, and they co-occurred with a frequent exchange of turns. Additionally, Crawford et al. (2019) found that *wh*-questions served a collaborative function between ESL pairs to engage their partners' ideas, where they used *wh*-questions in conjunction with pronouns.

Contractions, That deletion, and Mental Verbs. Contractions (e.g., it's, I'd) have been commonly reported in interactive contexts (Alquraishi, 2020; Biber, 1988; Csomay, 2004; Friginal, 2009; Staples et al., 2017). For example, Biber (1988) reports that they co-occur with pronouns and *wh*-questions (among other features) where the content of the conversation is presented in a generalized and fragmented way. Furthermore, *that* deletion, along with contractions, is among the features that serve the function of personal involvement, where unnecessary elements are dropped from the discourse. *That* deletion has also been reported to co-occur with mental verbs (Alquraishi, 2020; Biber, 1988; Csomay, 2004). The combination of these features is employed as a framework to articulate personal thoughts and feelings. Although these two features tend to occur in conversations, Alquraishi (2020) and Csomay (2004) did not report them in dimensions that were specifically labeled as interactive. Also, Crawford et al. (2019) described *that* deletion as one of the features that are indicative of collaborative interaction; however, they argue that *that* deletion is difficult to link to collaborative functions and suggest that it is reflective of spoken language involvement in general, rather than collaboration.

Verbs. Biber (1998) describes private verbs and present tense forms as interactive or involved. Present tense verbs refer to actions taking place within the direct context of interaction

(Biber, 1988), and denote actions taking place within the direct context of interaction (Biber, 1998; Csomay, 2004). Additionally, Csomay (2004) suggests that non-past tense verbs indicate the immediate space shared between participants. Csomay (2004) reports that using activity verbs (e.g., lets) and directive verbs (also called action verbs) is linked to the directive orientation in classroom discussions, while mental verbs (e.g., think, prefer) are used to express personal thoughts and feelings (Alquraishi, 2020; Biber, 2004; Csomay, 2004).

On the other hand, perfect aspect verbs and past verbs are not necessarily described as involved or interactive, but rather they mark narrative actions where past events are described (Biber, 1988; Friginal, 2009). Furthermore, Csomay (2004) lists past tense verbs among the features that indicate dense informational discourse, and they have been reported to be related to both a personalized narrative tone (when coming with third-person pronouns) and a dense informational focus (Csomay, 2004). Generally, studies have reported that past tense verbs tend to occur with third-person pronouns to form oral narratives (Csomay, 2004; Staples, 2017).

Furthermore, Alquraishi (2020), which investigated the CCOT using MDA, does not include verbs in the dimension that was labeled as interactive; however, mental verbs, private verbs, past tense verbs, perfect aspect, public verbs, present verbs, communication verbs, and attitude verbs were present in the interactive discourse of the study. Speakers made use of mental verbs and private verbs to articulate their ideas and arguments, aligning them with the task goals at hand, mostly using the phrase *I think*. They were also used to challenge their interlocutor's viewpoints. Furthermore, attitudinal verbs (e.g., agree, accept, worry), public verbs (mostly using agree), and present tense verbs were used by pairs to reach an agreement as they perform their tasks.

Modals. Modals have been shown to be present in spoken and interactive contexts (Biber, 1988; Csomay, 2004; Friginal, 2009; Staples et al., 2017). Prediction modals (e.g., *will*), necessity

modals (e.g., *should*), and possibility modals (e.g., *can, might*) are used to mark persuasion, where the speaker exhibits personal evaluation of likelihood or advisability. In studies that specifically investigated interactive discourse, modals are used to allow speakers to discuss possible future plans and provide suggestions and advice (Stables et al., 2017), and they are used to form a directive orientation in classroom discussions (Csomay, 2004). Modals (including possibility and obligation modals) are also used in the interactive context to provide sufficient information and detailed explanations (Friginal, 2009).

Adverbs. Adverbs are present in spoken discourse (Biber, 1988) and interactive contexts (Biber et al., 1999; Friginal, 2009; Staples, 2015; Staples et al., 2017). Adverbs function as instruments for context-specific reference related to the shared context of the spoken register (Biber, 1988), where they convey actions and attitudes (Biber et al., 1999). The adverbs that have been reported in the interactive discourse are likelihood adverbs, certainty adverbs, temporal adverbs, and time and place adverbs (Friginal, 2009; Staples et al., 2017). Likelihood adverbs (e.g., *maybe*) and certainty adverbs (e.g., *only*) have been shown to be used to express certainty in student-teacher office-hour interactions (Staples et al., 2017). Additionally, temporal adverbs (e.g., *next, then*) and time and place adverbs are commonly used in call center interactions (Friginal, 2009).

Subordination Complement Clauses. Subordination features like *that*-complement clauses, *to*-complement clauses, and *that*-relative clauses are relevant to the spoken discourse (Biber, 1988, 2004; Csomay, 2004; Staples et al., 2017). These features are utilized in interactive contexts (e.g., interviews) to elaborate on information within strict real-time constraints, resulting in a fragmented presentation of information achieved by adding additional dependent clauses using such features (Biber, 1988). Furthermore, in the interactive context, *to*-complement clauses are associated with

expressions of desire and necessity (e.g., *I want to*) (Staples et al., 2017), and *that*-complement clauses are used for oral narration (Biber, 2004; Staples et al., 2017) and to express stance (e.g., Biber, 2004; Csomay, 2004). These features have also been reported to be used by L2 pairs in the CCOT corpus. *That*-complement clauses controlling verbs of stance and likelihood (e.g., *I think, I believe, I mean*) were used to express stance about beliefs. Furthermore, *to*-complement clauses were used to express preference (mostly using *want to*), which was also used to achieve task goals that require task participants to convey their own preferences or others' preferences in the task (Alquraishi, 2020). Although these features have not been reported as directly interactive, it would be of interest to include them in the analysis since they are present in both spoken and interactive discourse.

Nouns, Nominalizations, Adjectives, and Prepositions. Nominalizations, nouns, abstract nouns, attributed adjectives, prepositions, and articles have been described as features related to elaborated noun phrases and information density (Biber, 1988, 2004; Csomay, 2004). According to Biber (2004), spoken conversational contexts tend to have interactive features on one pole of a dimension and an opposing pole that is information focused and less interactive. The abovementioned features typically appear on the opposing side of the interactive dimensions and are often labeled as information-focused, as seen in Biber (2004) and Csomay (2004). Furthermore, place nouns, pre-modifying nouns, and nominalizations are frequently used, in the CCOT, to serve the informational focus in ESL peer interaction (Alquraishi, 2020), and they have been associated with low collaborative interactions. Also, types of nouns and adjectives including human nouns, quantity nouns, abstract nouns, attitudinal adjectives, attributive adjectives, evaluative adjectives, and common nouns were not listed in the information-focused dimension, however, they were used by pairs to satisfy task-related requirements. The abovementioned

features could be related to less interactivity as measured in the present project, therefore, they should be included in the project.

Discourse Particles and Response Forms. Discourse particles (e.g., *ok, well, oh*) help maintain textual coherence in spoken and conversational contexts including telephone conversations and face-to-face interactions (Biber, 1988), student office hours, and study groups (Biber, 2006). These particles mark interactive, dialogic discourse and are associated with features of short, one-word turns (Csomay, 2004). A similar observation has been reported by Alquraishi (2020), where discourse particles are present in the interactive dimension of their study and co-occur with shorter word and turn lengths. Furthermore, response forms in conversation are described as lacking complete syntactic articulation because interlocutors rely on the context provided in the preceding turn (Biber et al., 1999). Response forms like *yes* and *yeah* have been shown to be interactive in Alquraishi (2020). Therefore, response forms (e.g., *ok, alright, yes, and no*) are included in the project.

Hesitations. In conversations, hesitations (filled pauses) are used to signal that the speaker has not finished their turn, discouraging the listeners from taking the floor, and they provide planning time for what to say next (Biber et al., 1999). In studies that investigate L2, whether in monologic speech or interactive speech, hesitations (filled pauses) are treated as disfluency features where it is related to lower proficiency levels of English (Choi et al., 2021; De Jong, 2018; Ghanem, 2021; Staples, 2021). In conversations, hesitations are used to signal that the speaker has not finished their turn, discouraging the listeners from taking the floor, and they provide planning time for what to say next (Biber et al., 1999). It would be of interest to understand the extent to which hesitation is related to interactivity; therefore, it has been included in the project.

Subordinations. Subordinations, especially causative and conditional, are reported to be common in the spoken interactive register (Biber, 1988; Crawford et al., 2019; Friginal, 2009; Staples et al., 2017). They are considered markers of stance (justifications for actions and beliefs) or markers for conditions of actions and beliefs (Biber, 1988). They are associated with a less structured way of presenting information due to time constraints of the spoken register. These features are utilized to convey affective functions related to the elaboration of personal attitudes or feelings (Biber, 1988). Biber (2006) reports that subordinations (especially causative) are common in the interactive discourse (i.e., students in study groups; office hours encounters). Causative subordinations are used among L2 test takers in test interviews, and it is reported to be among the features that indicate self-centered speech (Staples et al., 2017). Also, they are utilized to provide explanations in call center encounters (i.e., customers and service providers) (Friginal, 2009). Even though it is used in an interactive context, Friginal (2009) found this feature to co-occur with features associated with informational density (e.g., nominalizations) in call center interactions. Although previous studies showed associations between subordination and the production of dense information (Friginal, 2009) and self-centered speech (Staples et al., 2017) in interactive contexts, subordination has also been reported as indicative of highly collaborative interactions among L2 pairs in a study conducted on a sub-corpus of the CCOT (Crawford et al., 2019). Therefore, it would be of interest to see how subordinations are related to the construct of interaction (as measured in the current project) in the CCOT corpus (Crawford et al., 2019).

The selected features are presented in the following table (Table 3-8). They were coded using the Biber Tagger (1988) except for hesitator *uh*, response forms, and backchannelling which were coded using a specific program in Alquraishi (2020). The tagging of the features will be described next.

Table 3-8

Linguistic features included in the project

Selected features	Categories and examples
Pronouns	First-person pronouns (e.g., *me, we, us, my, our, myself, ourselves*)
	Second-person pronouns (e.g., *you, your, yourself, yourselves*)
	Demonstrative pronouns (e.g., *this is ridiculous*)
	Third-person pronouns (e.g., *she, they*)
	Pronoun *it*
Subordinators	Causative adverbial subordinator (e.g., *because*)
	Conditional adverbial subordinators (e.g., *if, unless*)
Discourse particles	(e.g., well, now, anyway)
Modals	Possibility modals (e.g., *can, may, might, could*)
	Necessity modals (e.g., *must*)
	Prediction Modal (e.g., *will*)
	Pronoun *it* (e.g., *it is great*)
Verbs	Private verbs (e.g., *assume, believe, know*)
	Present tense (e.g., *he goes home*)
	Mental verbs (e.g., I think it looks great)
	Past tense (e.g. *said*)
	Perfect aspect (e.g., *has gained*)
	Public verbs (e.g., *say*)
	Mental verbs (e.g., *I think*)
	Communication verbs (e.g., *suggest*)
	Activity verbs (e.g., *open, smile*)
Subordination	*That* complement clauses
complement clauses	*To* complement clauses
	That relative clauses
Contractions	(E.g., aren't, isn't)
That deletion	(E.g., *I think [that] he went home*)
Discourse particles	(E.g., *well*)
WH-questions	(E.g., *what do you mean?)*
Adverbs	Amplifiers (e.g., *very*)
	Emphatics (e.g., for sure, a lot, such a)
Response form	(E.g., *yes, no, ok, alright*)
Backchannelling	(E.g., *uh-huh*)
Adjectives	Attributive Adjective (e.g., *the big horse*)
	Predicative Adjective (e.g., *she is smart*)
	Predicative attitudinal adjective
	Attitudinal adjective
	Epistemic adjectives
	Evaluative Adjective (e.g., *important, simple*)
Infinitives	(E.g., *want to*)
Prepositional phrases	(E.g., *to, of, for*)
Nouns	Place nouns
	Proper nouns

	Human nouns
	Common nouns
	Pre-modifying nouns
Nominalizations	(E.g., *education*)
Hesitations	(E.g.., *uh*)

3.3.4. Tagging Accuracy

The CCOT texts has gone through different steps that resulted in a precise and reliable tagged information. The data tagging process started with the Biber Tagger (1988) which provides a good foundation for accurate tagging. Then a randomly selected subset (5%) of the CCOT data were assessed by two independent reviewers showed highly accurate tagging for most features, with only a limited number of features requiring revisions. Consequently, a comprehensive manual review, conducted in Alquraishi (2021), of the entire dataset was undertaken to correct grammatical tags that exhibited recurring errors. The features that showed tagging errors included nouns, nominalization, attributive adjectives, verbs, *wh*-questions, and *that*-deletion. The process of tagging error correction included reading the tagged files line by line and replacing the tagging errors with the correct tagging codes. After correcting the tags, a randomly selected sub-sample from the corpus was reviewed to check the extent to which these features (which showed tagging errors) were accurately tagged. The results showed high precision rates that ranged from 84% to 100%. For a more detailed description of the tag checking process, refer to Alquraishi (2021). Generally, the CCOT files has gone through a rigorous inspection which showed no concerning patterns of tagging errors and fixing some of the tagging errors resulted in highly accurate numbers.

3.3.5. Statistical Analyses

To address the first question, (i.e., the relationship between interactivity and lexico-grammatical features), relationship tests including both Pearson's and Spearman's tests were

conducted between students' interactivity (interactivity scores) and each linguistic feature. The interactivity composite scores and linguistic features were treated as continuous variables. Based on a Shapiro-Wilk test, the interactivity score data was not normally distributed, and the data included cases of extreme outliers. Also, all lexico-grammatical features did not show normal distributions except for the features all nouns and all pronouns. Therefore, Spearman's was used to calculate the significance *P* values and Pearson's was used to interpret the strength of association between the pairs' interactivity score and the different linguistic features included in the study. The interpretations of the results were based on the effect sizes (Pearson's *r* correlation) and R-squared (i.e., r²). The interpretations of the coefficient *r* values followed the conventions for examining the relationship between variables in the field of applied linguistics (Plonsky & Oswald, 2014), which state that *r* values close to .25 maybe be considered small, values close to .40 are medium, and values close to .60 are large.

3.4. The Relationships between Students' Interactivity and Fluency Features (Second Question)

The second aim of the project was to explore the relationship between pairs' fluency and students' interactivity. This section presents the methods, including the dataset of the CCOT, the coding of the variables (i.e., phonological features), and the statistical tools used to address the question.

3.4.1.   The CCOT Data Set

Although including the entire corpus would offer a more comprehensive representation of the CCOT population, in the present study, only 127 texts were included due to the time-consuming nature of the phonological coding process. While corpus linguistics generally advocates for the data to be representative of the original corpus through randomized or stratified

sampling methods (Egbert et al., 2022), when examining L2 phonological features, it may be more appropriate to control for various variables. For instance, factors such as the communicative purpose of tasks (Choi et al., 2021; Ghanem, 2021), the participants' L1 background (Derwing et al., 2007), and their L1 fluency behaviors (Duran-Karaoz & Tavakoli, 2020) could potentially affect L2 fluency.

While L1 should be controlled for, an initial investigation suggested that simultaneously controlling for the communicative purpose, level of English proficiency, and L1 background is not possible. Therefore, since there is evidence based on previous studies on the CCOT data that the communicative purpose has an effect on fluency, controlling for the communicative purpose and English proficiency level were prioritized. The corpus included two tasks from each communicative purpose. Fifty-seven texts were taken from level one students, 28 texts from level 2, and 42 texts from level 3. Only 28 texts were extracted from level 2 students because students at this level did not perform persuasion tasks (see Table 3-9). The sample was randomly selected from each chosen task, except for *Music and Vocabulary* and *Cancer Advice* which had only a limited number of texts.

Table 3-9

Texts selection for the second research question

Task CP	Number of tasks	Number of texts & task name (level 1)	Number of texts & task name (level 2)	Number of texts & task name (level 3)	Total Texts
Persuasion	2	26 *Advertisement*	---	14 *Cancer Advice*	40
Selecting from alternatives	3	15 *Choosing an Extreme sport*	14 *Opening a Barbershop*	15 *Crime Statistics*	44
Decision making	3	16 *Chen problem*	14 *Presentation on Immigration*	13 *Music and Vocabulary*	43
Total	8	57	28	42	127

Note. CP= communicative purpose.

3.4.2. *The Interactivity Scores Used for the Second Question*

As mentioned earlier in section 3.3.2, the interactivity score of each file (text) consists of three variables including turn length, turn count, and collaboration rating. The interactivity scores have already been computed for the first question of the project, which means that the three items have been standardized and composed only one time (in section 3.3.2 for the first question). The interactivity scores of the CCOT data used in the first question were also used for the subset data of the second question of the project. The descriptive information of the composite scores for the sub-set is provided in the Results of section 5-2.

3.4.3. *Phonological Features*

Ten percent of the selected data were coded by the two phonologically trained researchers (the main researcher and a second coder). The two coders met three times to discuss and practice the coding of the speech files. Two files, taken from the CCOT data subset, were used for the training phase. Additionally, a coding instruction file was used by the coders for instructions reference. The file of the coding instructions included information and demonstrations of how to deal with Praat (e.g., merging TextGrid files with auto silence files, setting the auto silence to .25 seconds, the location of speaker A and B in Praat tiers). The coding instructions file also included detailed information on the phonological features coding.

After the training phase, the second coder was provided with additional 13 files (10% of the data). Six features were examined in the reliability test including the number of runs, the number of pauses, the number of filled pauses, the average run duration, the average pause duration, and the filled pause duration of each file. To ensure high accuracy in inter-rater reliability (IRR) coding, each file was separated by the speaker (speaker A and speaker B). The reliability test

showed high inter-rater reliability of (α >.90). See Table 3-10 for the Cronbach's alpha values of each feature.

Table 3-10

Cronbach's alpha table for Inter-rater reliability

Feature	α	Feature	α	Feature	α
Ave. run duration	.918	Ave. pause duration	.960	All variables	.996
Filled pause number	.980	Pause number	.984		
Run number	.985	Filled pause ave. duration	.950		

After conducting the inter-rater reliability test, the data was distributed between the two coders (43 by the research assistant and 84 files by the main researcher). A second interrater reliability test was also conducted on another thirteen speech files (10% of the files) that were selected from the 127 files using random sampling. The second reliability test aimed to confirm that the high outcome of the initial reliability test was not influenced by the attention given during the coding of the files. The second coder was not informed which of the files would be selected for the reliability test during the coding process. The research assistant coded six additional files, while the main researcher coded seven additional files. This means that the additional files were coded twice, once by the main researcher and once by the assistant. The results showed high inter-rater reliability of (α >.90). see Table 3-11 for the details of the results.

Table 3-11

Cronbach's alpha table for the second inter-rater reliability

Feature	α	Feature	α
Ave. run duration	.96	Ave. pause duration	.98
Filled pause number	.97	Pause number	.99
Run number	.98	Filled Ave duration	.95

3.4.4. *Detailed Description of the Phonological Data Coding*

As mentioned earlier, Praat was used to code the phonological features. The process included creating seven tiers where the coders coded: A pause, A filled pause, A run, B pause, B filled pause, B run, and between speakers. The silence before and after the speech was excluded from the coding. The silent pauses that occur between turns (e.g., B stops speaking creating a silent pause then A speaks) were labeled *between speakers* and were excluded from the analysis as it was not clear which speaker was the cause of that particular pause. Excluding it ensures a more accurate fluency measurement. See Table 3-12 below for the measurements of the phonological features and their descriptions.

After coding the data using Praat, the information was extracted by tabulating the Praat Text Grids and then saving them as tap- separated files that can be opened by Microsoft Excel. The number of filled pauses, runs, and silent pauses were counted automatically using Excel equations. To ensure that the information (e.g., number of filled pauses per speaker) extracted automatically using Excel were accurate, around 3 to 4 files per one task were examined to see if calculation problems would occur. The calculations were mostly accurate except for one problem which is related to the way the second coder labeled one of the tiers (i.e., B pause). The problem was fixed, and the calculations seemed to be accurate. The data were also inspected a second time to ensure that the information was precise.

Speech Rate. Speech rate is the average number of syllables generated per minute for each text. It was measured by calculating the number of syllables per minute. The number of syllables of each text was generated using an online website (WordCalc). The total speech time was calculated by combining speaker A's and speaker B's runs and pauses of each text which means that the between turns silent pauses were excluded from the total speaking time analysis as it was

expected that the outside distractions (e.g., a speaker fixing the microphone, the effect of background noises) might negatively affect the preciseness of the analysis. The speech rate was measured by dividing the number of syllables of each text by the total speaking time of the text then it was normalized to sixty seconds (i.e., (total number of syllables/total speaking time) *60).

Average Run Duration (ARD). Average run duration refers to the amount of time the text was spoken by both speakers, A and B, and it is the speaking time between two pauses equal to or greater than .25 second. It is measured by dividing the total amount of speaking time (i.e., speakers A and B runs) by the number of runs produced by the speakers.

Silent Pauses. Silent pause is the sum number of silent pauses per one text. Random non-articulation sounds produced by the speakers (like sighs) that did not seem to be part of the word vocalization process were considered as silent pauses as well. Silent pauses were only considered if they last for .25 seconds or longer. To measure this fluency feature, the total number of silent pauses from speakers A and B was divided by the total speaking time (i.e., pauses and runs of A and B combined) and then normalized to a 60-second interval.

Mean Pause Length. Mean pause length is the silent pauses mean length produced by speakers A and B in the conversation/text. It is the mean duration of silent pauses for each text, and it was calculated by dividing the total pause length by the number of pauses produced in each text.

Filled Pause. Filled pause is the sum number of filled pauses produced by speakers A and B in the text. During the data coding stage, if a student pronounced one word slowly (e.g., pronouncing 'to' while spending longer time than expected/usual on the vowel 'uː'), it was not considered as a filled pause because it is part of the word, not a filled pause (e.g., *uh*). Back channelings such as 'mm' 'uh-huh' were not treated as filled pause. Measuring filled pauses

included dividing the total number of filled pauses produced by speakers A and B by the total time

of speaking then was normalized to 60 seconds (see Table 3-12 for the descriptions of the

phonological measurements of the study).

Table 3-12

Descriptions of the phonological measurements

Feature	Description	Measurement
Speech rate	The average number of syllables generated per minute for each text.	Measured by calculating the number of syllables per minute. (Total number of syllables/total speaking time)*60
Average run duration	Average run duration is the speaking time of the text.	It was calculated as any speaking time between two pauses equal or greater than .25 seconds. (Total run duration/total number of runs)
Silent pauses	Silent pause is the sum number of silent pauses per one text.	It is the total number of silent pauses per text. The silent pause should be greater than .25 seconds. (Total number of silent pauses/total time)*60
Mean pause length	Mean pause length is the silent pauses mean length per text.	It is the average length of silent pauses for each text. It is calculated by dividing the total pause length by the number of pauses produced in each text.
Filled pauses	Filled pause is the sum of filled pauses per text.	It is the total number of filled pauses per one text such as using *uh* and *um*. (Total number of filled pauses/total time)*60

3.4.5. Statistical Analyses

To answer the second question, Pearson's correlation tests were conducted to investigate the

relationship between L2 pair interactivity and three fluency features including silent pause, speech

rate, and filled pause. The variables (i.e., interactivity composite score, phonological features

values) were treated as continuous. The effect sizes (Pearson's *r* correlation) and r^2 were

considered to interpret the results. Furthermore, average run duration and average pause duration

did not have normal distributions based on Shapiro-Wilk tests. Thus, Spearman's rank correlation

tests were conducted to investigate the relationships between these features (average run duration

and average pause duration) and L2 pair interactivity scores. To interpret the results, *r* values close

to .25 were considered small, values close to .40 were medium, and values close to .60 were large (Plonsky & Oswald, 2014) .

3.5. The Effect of Task Prompt on Students' Interactivity (Third Question)

The third aim of the project sought to explore the effect of individual task prompt on pairs' interactivity level. The effect of the general communicative purpose classification of the tasks on interactivity was also investigated to be able to understand how this situational variable might affect interactivity. Furthermore, other situational variables (i.e., ± Information, ± Opinion) were also used as a reference to understand how task could be related to L2 pairs' interactivity level. This section provides the methods used for this question including the data set and the statistical tools used to address the question.

3.5.1. *The Data Set of the CCOT Corpus*

The entire CCOT corpus was utilized for the third question. The corpus was divided into 24 parts, each corresponding to the different 24 individual task (with different topics), to conduct the analysis of the effect of individual task on L2 interactivity.

Additionally, prior research suggested that situational variables can influence language production, with language can be interpreted in relation to these variables (Crawford & Zhang, 2021). For instance, Crawford and Zhang (2022) argued that tasks requiring participants to share information tend to elicit informational language (e.g., nouns), while tasks prompting participants to present arguments are more likely to elicit stance features and personal pronouns. Therefore, the data was divided into three parts based on the general communicative purposes. The 24 tasks within the CCOT were classified into three communicative purposes through a principled analysis (Alquraishi, 2020), involving a review of task prompts and task comparisons to identify similarities and differences.

According to Alquraishi (2020), the phrasing used in the task prompts played an essential role in determining the communicative purpose of each task. For instance, tasks with phrases like "choose a candidate" or "select a store to open" were categorized as involving selection from various options. Similarly, tasks containing words like "persuade" or "convince" were recognized as having a persuasion focus. This process also entailed forming overall judgments about the communication intent of the tasks. Alquraishi (2020) and one of the creators of the CCOT collaborated to discuss categories and review tasks in order to define the general communication purposes of each task. Consequently, three general communicative purposes were identified within the CCOT: 1) making decisions, 2) persuasion, and 3) choosing from multiple alternatives. Refer to Table 3-13 for the categorization of task according to their general communicative purposes.

It should be noted that each task of the CCOT has another layer of more specific communicative purposes. For example, while the general communicative purpose of *Advertisement* is persuasion, it also has more specific communicative purposes which are 1) describing a product and 2) persuading an audience to make a purchase of the product. However, the specific communicative purposes were not considered in the study.

Table 3-13

Tasks communicative purpose categorization and word counts of the CCOT

Communicative purpose	Topic	Number of texts	Number of words	Mean words per text
Persuasion	*Advertisement*	73	19, 641	269
	Cancer advice	14	5614	401
	Avoid an extreme sport	16	5750	359
	Workplace monitoring	15	6687	446
Selecting from alternatives	*Choosing a patient*	104	35, 675	343
	Crime statistics	17	52, 56	309
	Election	37	13, 779	372
	Hiring	16	5024	314

	Choosing an extreme sport	17	4532	267
	Investing in a famous entrepreneur	21	7510	358
	Investing in science funding	37	14,799	400
	Opening a barbershop	47	19,902	423
	Awarding a scholarship	16	6556	410
	Sleep clinic	21	8493	404
	Selecting a store to open	46	18,975	413
	Crime and economy	13	5459	420
Decision making	*Chen problem*	56	13,855	247
	Matt test score	18	4187	233
	Music and vocabulary	13	4880	375
	Non-verbal communication	18	8542	475
	Presentation on healthy food	27	9016	334
	Presentation on immigration	16	5532	346
	Spanking	39	13,557	348
	Voluntary simplicity	78	25,103	322

The tasks within the CCOT were also classified based on two situational characteristics: 1) the extent of information provided to students in the task prompt, and 2) whether students were instructed to adopt a specific perspective in their performance. This categorization was used in the project as a reference to understand how task prompts affect interactivity (the answer to the third question of the dissertation). In simpler terms, it helps us understand how interactivity patterns relate to the situational characteristics of the task, as defined by these two variables (± information, ± Opinion). For instance, in tasks yielding low interactivity outcomes, are prompts usually designed to provide lists of information for the pair to use in their performance (resulting in reduced interactivity and increased use of informational features)? More details about the two situational variables are presented in the following paragraph.

Two situational variables were considered in the categorization of tasks in the current project: the presence or absence of information (± Information) and the allocation of opinions or sides for each student to argue for (± Opinion). Firstly, for the ± Opinion variable, it involves assigning a

specific perspective to each student (e.g., *You are Student A and you support Bill in the election*).

Secondly, the ± Information variable revolves around whether the task includes informational content that students are expected to incorporate in their performance. This variable encompasses sub-categories, as information could be presented in various forms, including 1) text in the form of a list of clauses and sentences, 2) text in the form of words and phrases, 3) images, and 4) scientific graphs. Refer to Table 3-14 for the tasks and their categorizations using these two variables. Furthermore, Figure 3-1 provides a tree map illustrating the tasks' classifications based on these two variables.

Table 3-14

The categorization the CCOT tasks using ± Information and ± Opinion variables

Topic	+Opinion	+Information	List of clauses and sentences	Words and phrases	Images	Scientific graph
Advertisement	-	+	-	-	+	-
Cancer advice	+	-	-	-	-	-
Avoid an extreme sport	+	+	-	-	+	-
Workplace monitoring	+	-	-	-	-	-
Choosing a patient	+	+	+	-	-	-
Crime statistics	-	+	-	-	-	+
Election	+	+	+	-	-	-
Hiring	+	+	+	-	-	-
Choosing an extreme sport	-	+	-	+	-	-
Investing in a famous entrepreneur	+	+	+	-	-	-
Investing in science funding	+	+	+	-	-	-
Opening a barbershop	+	+	+	-	-	-
Awarding a scholarship	+		+	-	-	-
Sleep clinic	+	+	+	-	-	-
Selecting a store to open						
Crime and economy	-	+	-	-	-	+

Chen problem	-	-	-	-	-	-
Matt test score	-	-	-	-	-	-
Music and vocabulary	-	-	-	-	-	-
Non-verbal communication	-	-	-	-	-	-
Presentation on healthy food	-	+	+	-	-	-
Presentation on immigration	-	-	-	-	-	-
Spanking	+	-	+	-	-	-
Voluntary simplicity	+	-	+	-	-	-

Figure 3-1

The CCOT task topics categorized based on ± Information and ± Opinion

```
                            Convergent
                                 |
            ┌────────────────────┴────────────────────┐
        +Opinion                                   -Opinion
            |                                           |
    ┌───────┴───────┐                     ┌─────────────┴─────────────┐
+Information    -Information         + Information              - Information
```

+Information

-Information
Tasks:
1.Cancer Advice(3)
2.Spanking(21)
3.Voluntary simplicity(23)
4.Work place monitoring (24)

+ Information

- Information
Tasks:
1.Presentation on Healthy food(16)
2.Chen problem(4)
3. Matt Test Score(13)
4.Music and vocabulary(14)
5.Nonverbal communication(15)
6.Opening and selecting a store(22)

Text

Image

Text &Image

Text

Image

Text & Image

Scientific Graph/map

Pic
Tasks:
1.Avoid an extreme sport (8)

Scientific graph & Words

Scientific Graph/map

Pic
Tasks:
1.Advertisement(2)

Scientific graph & Words
Tasks:
1.Crime statistics(6)
2.Crime and economy(25)

List (clauses/sentences)
Tasks:
1.Choosing a patient(5)
2.Election(7)
3.Hiring(9)
4.investing in famous entrepreneur(11)
5.Investing in science funding(12)
6.Sleep clinic(20)
7. Opening a Barbershop (18)

Words/Phrases

List (Clauses/Sentences)
Tasks:
1. Scholarship(19)
2.Presentation on immigration (17)

Words/phrases
Tasks:
1.Choosing an extreme sport(10)

3.5.2. Statistical Analyses

To investigate the effect of individual task on interactivity, a one-way ANOVA test was conducted to understand the magnitude of the effect of task on L2 pair interactivity. Also, Kruskal-Wallis was used for the *P* value to ensure significance. Based on Shapiro-wilk tests the data of the

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tasks were not normally distributed which is why Kruskal-Wallis test was used. The independent variable was the task (prompt), and the dependent variable was L2 pair interactivity level. Furthermore, another ANOVA test was performed to understand the effect of the general communicative purpose on L2 pair interactivity. Finally, the descriptive information of other situational characteristics of the tasks (i.e., ± Information and ± Opinion) were used as a reference to understand how trends of these variables could be related to trends of L2 interactivity level.

4. Chapter 4- The Relationship between Interactivity and Lexico-grammatical Features

This chapter reports and discusses the findings of the first dissertation question. The first research question was: What are the relationships between students' interactivity and their use of lexico-grammatical features? The results section presents these findings, followed by the discussion section, where a close examination and interpretation of the results are provided.

4.1. Results

This section reports the results regarding the relationships between L2 pairs' degree of interactivity and their use of lexico-grammatical features. First, the descriptive information on the interactivity level is provided (see Table 4-1 below). As can be seen, the mean of the interactivity scores is zero, which is expected because the three variables that compose the interactivity scores were standardized to be comparable to each other. The standard deviation (SD) shows that 68% of the data (conversations) had interactivity scores (interactivity levels) that fell within the range of -0.79 to 0.79, while one third (32%) of the data received an interactivity score of approximately 0.80 and higher, or approximately -0.80 and lower. Additionally, the frequency of the texts (conversations) across interactivity levels was closely examined (see Table 4-2). As evident in the table, the number of texts that received interactivity scores higher than zero (texts = 414) was larger than the number of texts that received scores lower than zero (texts = 349). Moreover, the texts that received scores ranging from 0 to 0.79 (texts = 318) were more than those with scores between 0 and -0.79 (texts = 248). This observation explains why the mode (mode = 0.33) and the median (median = 0.063) exhibited positive numbers. Furthermore, the data exhibits extreme values of interactivity levels, including a minimum interactivity score of 4.24 and a maximum interactivity score of 2.29. These values are significantly distant from where the majority (68%) of the data or conversations are situated (within the range of -0.79 to -0.79).

Table 4-1

Descriptive information of interactivity score

Interactivity score	N	Min	Max	M	SD	Mode	Med	IQR	Skewness	Kurtosis
	769	-4.25	2.29	0.00	0.79	.32	.063	.90	-.83	2.37

Table 4-2

Frequency of texts across interactivity levels

Text position	Higher than zero (>0)	Lower than zero (<0)	Equal to zero (=0)	total
Number of texts	414	349	6	769
Text position	Between 0 and .79 (>0 to=.79)	Between 0 and -.79 (=-79 to <0)		
Number of texts	318	248		

Furthermore, Table 4-3 provides descriptive information on the lexico-grammatical features. As seen in the table, the features that exhibited the highest frequency means were all verbs, present tense verbs, all nouns, all personal pronouns, common nouns, and the hesitator *uh*, as they displayed means higher than 100 per thousand words. Additionally, many features exhibited very low frequency means in the corpus. The features that had a frequency mean of lower than 5 per thousand words were stance *to* complement clauses controlled by verbs, predicative adjectives, nominal pronouns, emphatics, predicative attitudinal adjectives, epistemic adjectives, perfect aspect verbs, and backchannelling. Also, many features exhibited vary high standard deviations

(SD) (e.g., third person pronoun, pronoun *it,* predicative adjective) which indicate that these features were highly frequent in on text and rare (or not existing) in other texts.

Table 4-3

Descriptive information of lexico-grammatical features

Feature	N	Min	Max	M	SD	Med	IQR
All verbs	769	72.60	266.70	159.26	23.90	158.60	32.40
Present tense verb	769	51.30	288.90	156.22	25.42	155.30	33.65
All nouns	769	66.10	281.30	155.73	34.26	155.30	46.65
All personal pronouns	769	25.00	247.50	135.82	37.96	136.30	51.65
Common noun	769	37.6	228.60	114.86	29.69	113.90	40.85
Hesitator *uh*	769	0.00	285.12	100.08	47.96	94.43	67.45
First person pronoun	769	5.70	167.60	59.53	24.49	56.40	33.90
Preposition	769	9.30	122.20	55.33	17.22	54.30	22.00
All adjectives	769	0.00	150.70	46.70	20.85	42.70	28.00
Mental verb	769	0.00	128.50	45.12	18.75	43.80	22.15
Third person pronoun	769	0.00	180.30	40.38	42.55	19.80	72.45
Second person pronoun	769	0.00	155.20	35.91	24.97	31.30	30.25
Definite articles	769	0.00	134.30	33.79	20.94	30.00	28.00
Private verb	769	0.00	88.10	29.52	14.98	28.40	19.85
Contraction	769	0.00	114.60	29.42	15.96	27.70	20.70
Adverb	769	0.00	76.90	29.17	12.67	27.70	16.70
Attitudinal adjective in other contexts	769	0.00	97.30	28.48	17.38	25.60	23.00
Activity verb	769	0.00	87.80	26.64	14.68	24.30	19.40
All conjunctions	769	0.00	95.20	25.67	12.57	24.60	15.80
All modals	769	0.00	84.00	25.22	14.36	23.50	19.60
Attributive adjective	769	0.00	98.20	24.46	15.79	21.80	18.70
Response forms	769	0.00	85.60	23.37	14.71	20.46	20.04
Nominalization	769	0.00	106.30	19.66	16.74	16.00	21.20
Pronoun *it*	769	0.00	108.80	18.22	17.35	13.60	20.65
Stance *that* complement clauses	769	0.00	59.30	16.67	9.70	16.10	13.15
Stance *that* complement clauses controlled by verbs	769	0.00	59.30	16.54	9.70	16.00	12.85
Indefinite articles	769	0.00	51.10	15.47	10.51	13.90	14.65
Human noun	769	0.00	61.90	14.51	10.53	13.10	14.35
Proper noun	769	0.00	183.90	14.50	17.53	9.00	19.05
That deletion	769	0.00	57.60	14.44	9.05	13.70	11.85

That complement clause verb of likelihood	769	0.00	59.30	12.45	8.75	11.60	10.85
Infinitive	769	0.00	63.20	11.78	9.20	9.90	12.25
Pre-modifying noun	769	0.00	70.20	10.79	9.74	8.80	11.35
Possibility modal	769	0.00	57.60	10.37	9.91	7.60	12.50
Communication verb	769	0.00	49.60	9.71	8.13	8.00	10.30
Prediction modal	769	0.00	55.20	9.14	9.72	6.40	11.15
Coordinating conjunction	769	0.00	47.60	8.90	8.38	6.90	9.90
Subordinating conjunction - causative	769	0.00	34.10	8.28	6.53	7.20	8.15
Verb *have*	769	0.00	46.20	8.13	7.54	6.20	9.60
Place noun	769	0.00	58.00	7.67	10.96	3.20	10.90
Wh-question	769	0.00	38.50	7.57	6.67	6.20	8.85
Factive verb in other contexts	769	0.00	37.80	7.25	7.15	5.60	10.80
Amplifrier	769	0.00	58.00	6.30	7.62	4.30	9.00
Attitudinal verb in other contexts	769	0.00	53.60	6.22	7.18	4.20	8.90
Attributive Adjectives--Evaluative	769	0.00	53.60	6.17	7.93	3.60	8.40
Public verb	769	0.00	53.60	6.14	6.49	4.60	9.10
Stance adverbs	769	0.00	34.20	5.84	6.10	4.50	8.80
Necessity modal	769	0.00	61.90	5.72	8.23	2.80	8.10
Demonstrative pronoun	769	0.00	34.80	5.63	5.64	4.50	8.70
Discourse particle	769	0.00	43.30	5.56	5.97	4.30	8.60
Past tense verb	769	0.00	45.50	5.53	6.34	3.90	8.10
Stance *to* complement clauses	769	0.00	57.50	5.44	6.40	3.90	7.80
Likelihood verb in other contexts	769	0.00	36.20	5.22	5.30	4.10	7.90
Communication verb in other	769	0.00	46.70	5.16	6.32	3.30	7.90
Stance *to* complement clauses controlled by verbs	769	0.00	57.50	4.65	6.07	2.90	6.70
Predicative adjective	769	0.00	30.00	4.50	4.86	3.40	6.85
Nominal pronoun	769	0.00	26.00	3.92	4.69	2.80	6.00
Emphatic	769	0.00	46.70	3.88	5.32	2.60	5.60
Predicative attitudinal adjective	769	0.00	22.00	2.27	3.60	0.00	3.55

Epistemic adjectives in other contexts	769	0.00	33.50	2.08	3.93	0.00	3.10
Perfect aspect verb	769	0.00	18.60	1.09	2.25	0.00	2.00
Backchannelling	769	0.00	17.07	0.47	1.57	0.00	0.00
Word count	769	63.00	747.00	323.21	104.44	323.00	142.00
Word length	769	3.00	4.50	3.61	0.22	3.60	0.20
Type/token ratio	769	8.80	31.00	21.41	2.96	21.50	3.80

Note. All features were normalized to thousand words. All features are 63 excluding word length word count and token/ratio

Moreover, as can be seen in Table 4-3 above, only seven features appeared in all texts, including all verbs, present tense verbs, all nouns, all personal pronouns, common nouns, first person pronouns, prepositions, and all these seven features showed a relatively higher mean frequency (mean frequency range =55.33 to 159.26) compared to the remaining features of the study. Since most of the features did not appear in all texts, the extent to which each feature appeared in the 769 texts was examined (see Table 4-4 below). As can be seen in the table, most of the features (i.e., 45 out of 62 features) appeared at least once in more than 70 % of the texts (545 texts). Features that appeared in fewer texts (less than 42% of the texts) were predicative attitudinal adjective, epistemic adjectives, perfect aspect verb and backchannelling, with backchannelling appearing in only 88 texts of the CCOT data.

Table 4-4

The percentage of texts that included use of the lexico-grammatical features of the study

Feature	%	Feature	%	Feature	%
Present tense verb	100.00%	Stance that complement clauses	95.06%	Likelihood verb in other contexts	71.91%
First person pronoun	100.00%	Stance that complement clauses controlled by verbs	94.80%	Public verb	71.13%
All nouns	100.00%	Indefinite articles	92.85%	Demonstrative pronoun	70.87%
All personal pronouns	100.00%	*That* deletion	92.85%	Stance adverbs	69.70%
All verbs	100.00%	Human noun	91.94%	Past tense verb	68.27%

Common noun	100.00%	Nominalization	90.51%	Amplifier	68.14%
Preposition	100.00%	Infinitive	88.95%	Discourse particle	67.62%
All adjectives	99.87%	That complement clause verb of likelihood	88.56%	Stance to complement clauses	67.23%
Hesitator *uh*	99.87%	Pronoun *it*	87.65%	Predicative adjective	67.10%
mental verbs	99.61%	Subordinating conjunction - causative	86.09%	Attributive Adjectives-- Evaluative	63.07%
All conjunctions	99.35%	Pre-modifying noun	85.31%	Communication verb in other	62.81%
Adverb	99.22%	Communication verb	84.53%	Stance to complement clauses controlled by verbs	61.25%
Contraction	99.09%	Third person pronoun	81.40%	Nominal pronoun	59.95%
Activity verb	98.57%	Coordinating conjunction-clausal co	80.75%	Place noun	58.00%
Private verb	98.57%	Possibility modal	80.23%	Necessity modal	57.74%
Definite articles	98.44%	Verb have	79.97%	Emphatic	57.09%
All modals	98.31%	Wh-question	79.19%	Predicative attitudinal adjective	41.35%
Attitudinal adjective in other contexts	97.92%	Proper noun	77.63%	Epistemic adjectives in other contexts	34.20%
Response forms	97.66%	Prediction modal	76.20%	Perfect aspect verb	25.88%
Attributive adjective	97.65%	Factive verb in other contexts	73.60%	Backchannelling	11.44%
Second person pronoun	97.53%	Attitudinal verb in other contexts	72.82%		

As mentioned earlier in Chapter 3 (Section 3.3.5), in order to investigate the relationship between interactivity and lexico-grammatical features, relationship tests including both Pearson's and Spearman's tests were conducted between students' interactivity (interactivity scores) and each linguistic feature. Based on a Shapiro-Wilk test, the interactivity score data was not normally distributed, and the data included three cases of extreme outliers. Also, all lexico-grammatical features did not show normal distributions except for the features all nouns and all pronouns. Therefore, Spearman's test was used for the significance P values and Pearson's test was used to

interpret the strength of association between the pairs' interactivity score and the linguistic features included in the study.

For the results of the relationships between interactivity and grammatical features use, the Spearman's test revealed that a total of 26 features showed significant relationships with students' interactivity (the results of Spearman's and Pearson's tests are presented in Appendix B). The following two paragraphs report on the negative and positive correlations that showed significant results, respectively. It should be noted that the significant results were based on Spearman while the coefficient *r* values were based on Pearson. The *P* value of Spearman's test was used because the utilization of Pearson's test *P* value is deemed inappropriate due to the significant violations of its assumptions in the data.

There were statistically significant negative weak correlations between L2 students' interactivity scores and four linguistic features, including the hesitator *uh*, all nouns, common nouns, and word length (see Table 4-5 below), with *r* values ranging from .26 to .32. This means that as the level of pairs' interactivity increased, their use of the hesitator *uh*, all nouns, common nouns, and word length tended to decrease. Pairs' interactivity level explained 6.97%, 7.67%, 9.18%, and 9.92%, of the variance in common nouns, the hesitator, all nouns, and word length, respectively. Furthermore, there were statistically significant (p< .01) negligible correlations between students' interactivity scores and nine linguistic features including, prepositions, third person pronouns, verb perfect aspect, nominalizations, infinitive, definite articles, pre-modifying nouns, human nouns, and place nouns (See table 4-5 for the coefficient *r* values). This means that as L2 pairs' interactivity increased, their use of these features tended to decrease. Based on their coefficient *r* values, the pairs' interactivity level explained approximately 0.92% to 2.56% of the

variability in these features (Refer to Appendix C for scatter plots illustrating the negative relationships between the lexico- grammatical features and pairs' interactivity levels).

Table 4-5

Pearson coefficient r of the relationship between the interactivity score and the linguistic features showing negative correlations

Feature	r	Feature	r
All nouns	-.315**	Hesitator *uh*	-.277**
Word length	-.303**	Common nouns	-.264**
Infinitive	-.160**	Definite articles	-.140**
Preposition	-.103**	Pre-modifying noun	-.152**
3rd person pronoun	-.172**	Human nouns	-.134**
Verb perfect aspect	-.123**	Place nouns	-.107**
Nominalization	-.096**		

Note. The associations were significant based on both Spearman's and Pearson's tests

Furthermore, the Pearson's tests showed week to moderate positive relationships between L2 pairs' interactivity scores and four linguistic features including response forms, second person pronouns, discourse particles, and *wh*-questions (see Table 4-6 below for the coefficient *r* values). This means that when the L2 pairs' interactivity increased, their use of these features tended to increase as well. Pairs' interactivity level explained 27.35% of the variability in response forms, 16.00% of the variability in *wh*-questions, 9.18% of the variability in discourse particles, and 9.30% of the variability in second person pronouns. Also, Pearson's test showed negligible positive relationships between the interactivity scores and nine linguistic features including backchannelling, contractions, demonstrative pronouns, first person pronouns, pronoun *it*, attitudinal adjectives, epistemic adjectives, word count, and private verbs (see Table 4-6). This means that when the level of pairs' interactivity increased, their use of these features tended to increase as well. Pairs' interactivity level explained approximately 0.55% to 3.7% of the variability

in these features (Refer to Appendix C for scatter plots illustrating the positive relationships between the lexico- grammatical features and pairs' interactivity).

Table 4-6

Pearson coefficient r of the relationship between the interactivity score and the linguistic features with positive relationships

Feature	r	Feature	r
Response form	.523**	Discourse particles	.303**
2nd Person pronoun	.305**	*Wh*-questions	.400**
Contractions	.153**	Backchanneling	.192**
Demonstrative pronouns	.135**	Pronoun *it*	.170**
1st Person pronouns	.158**	Attitudinal adjective	.143**
Private verbs	.098**	Epistemic adjectives	.120**
Word count	.136**		

Note. The associations were significant based on both Spearman's and Pearson's tests

4.2. Discussion

The first research question aimed to explore the possible associations between pairs' interactivity level in dyadic task performance and their use of lexico-grammatical features. The descriptive information showed that seven features appeared in all texts including all verbs, present tense verb, all nouns, common nouns, all pronouns, first person pronouns, and prepositions. However, further examination showed that most of the features (45 feature) appeared in more than 70% of the CCOT data, with 20 features appearing in more than 90% of the texts.

As per the interactivity scores (levels), the majority of the data (around 68%) received interactivity scores that ranged from around -0.79 to 0.79, while the remaining texts exhibited either higher or lower levels of interactivity. This observation provides perspective on which scores should be considered indicative of very high or very low interactivity levels. Examples 4

and 5 below provide an idea of what the data falling within the -0.79 to 0.79 range look like. Example 4 received a low interactivity score of -0.78 (towards the negative end of the -0.79 to 0.79 range) compared to Example 5, which received a higher interactivity score of 0.77 (towards the positive end). Example 4 produced speech in long turns and exchanged only a few turns, which explains why they received lower scores in collaboration (Coll=-0.25), turn length (TL=-1.08), and turn count (TC=-1.00), ultimately resulting in a reduced overall interactivity score.

On the other hand, the pair in Example 5 had frequent turns (16 turns) and exhibited relatively short turn lengths where they respond to each other and generate more questions as they perform the task. Consequently, the dyads in Example 5 received higher scores in collaboration (Coll=1.05), turn length (TL=0.69), and turn count (TC=0.58) than Example 4. The rest of the discussion section provides detailed description of texts that demonstrate high interactivity levels and those that exhibit low interactivity levels, illustrating how interactivity is related to specific lexico-grammatical features.

Example 4.

1 A: Uh I have uh one client uh who who she is uh Melia. She is a university freshman and she has gained fifteen pounds. Her clothes don't fit. She is in classroom eight until seven p.m. she study at the library unt—until twelve a.m. She buys snacks at the library. Uh I think in my uh in my opinion uh she have she have to uh she uh sh sh she shouldn't uh eat the snacks from the library sh-she should to take uh a healthy food uh and uh she she gonna to she—she gonna to… she gonna… do uh she gonna do… correct this problem and what's your problem with your client?
2 B: My name client is Joe. Is uh graduate student since he was a a boy he has always been at least twenty five pounds ov-uh-overweight uh and uh runs in his family. He is uh very very fat. Uh he is uh uh uh you need uh uh more uh little the exercise because uh uh the health food and programs uh go to doctor uh and eat uh the the vegetables and fruit more nature eating and uh you need uh more sport uh and uh y-uh and… uh faster uh to doctor because write the programs.
3 A: Yeah uh I think uh your clients have uh a big problem with uh losing weight. Uh I think uh it's dangerous problem and uh he he have to s-someone to give him advices uh and come to your client.

4 B: Yeah I agree with you. Uh this Joe more more fat uh you need uh faster the doctor. Thank you.
5 A: Thank you. Goodbye.

(ID: 05134&05372_a.txt, Task: *Sleep Clinic*, Level 2, Interactivity score= -0.78, collaboration score=-0.25, turn length=-1.08, turn count = -1.00)

Example 5.

1 A: Hello B.
2 B: Hello.
3 A: Today in uh the healthy centre at afternoon I have a patient she's names Cindy. I think she want to lose weight.
4 B: Mmhmm.
5 A: Because she ga-she gained twenty pou-pounds.
6 B: Oh yeah I have a patient like her. Uh he's a professor. His name is Lou and he sleeps only four hours a night.
7 A: Oh maybe she-she's work at-in the Bank. Uh she's work from seven until five p.m. What about you?
8 B: My patient he sits at his desk for long uh hours every day.
9 A: I think my patients uh she has a problem. She she has a disease obesity runs in her family what about your patient?
10 B: Yeah my patient also uh he has uh uh cardiovascular disease runs in his family.
11 A: Uh you know my patient she eats uh uh in the all all the time in the the vending mach-machine every day and uh she's gonna gain twenty pounds for this.
12 B: Uh uh my patient is worried about his health. Uh he eats a lot of fast food he eats at McDonald's three times a week.
13 A: I think your patient they need to to you're your patient n-need to help you to lose weight so I agree with your patient.
14 B: Yeah I agree too. I think he has to get a new diet and work for it.
15 A: And I think he need uh healthy food and uh exerci-more exercise in the week.
15 B: Yeah.
16 A: Thank you.

(ID: 05520&05065, Task: *Sleep Clinic*, Level 2, Interactivity score = 0.77, collaboration score=1.05, turn length= 0.69, turn count = .58)

The first research question of the project sought to examine the relationship between pairs'

interactivity level and their use of lexico-grammatical features. The results revealed that thirteen

linguistic features exhibited positive relationships with pairs' interactivity scores, with correlation

strengths ranging from negligible to moderate. This positive relationships indicated that as pairs' level of interactivity increased, their use of these features tended to increase as well. These features included response forms, discourse particles, *wh*-questions, second person pronouns, backchannelling, contractions, pronoun *it*, first person pronouns, attitudinal adjectives, word count, demonstrative pronouns, predicative epistemic expressions, and private verbs.

Furthermore, the results showed that thirteen features (i.e., hesitator *uh*, all nouns, common nouns, word length, prepositions, third person pronouns, perfect aspect, nominalizations, infinitives, definite articles, pre-modifying nouns, human nouns, and place nouns) exhibited significant negative relationships, with correlation strengths ranging from negligible to weak. These negative relationships indicated that as pairs' interactivity scores increased, their use of these thirteen features tended to decrease. In the following two sections, the features that exhibited positive relationships are discussed, followed by a discussion of the features that showed negative relationships.

4.2.1. Features Exhibiting Positive Relationships with L2 Pair Interactivity

As mentioned earlier, thirteen features showed positive associations. However, the features that showed stronger associations were response forms, *wh*-questions, second person pronouns, and discourse particles. The remaining features exhibited negligible associations; therefore, attention was given to the features with stronger relationships.

It should be emphasized that each of these features is associated with interactivity, and these features do not necessarily co-occur in texts. That being said, it is possible to encounter some texts that exhibit a number of features occurring in one text (e.g., use of *wh*-questions and second person pronouns in one conversation). Therefore, it was attempted to demonstrate the association between interactivity and each feature using one example that contains the targeted features.

Among the features that showed positive associations with interactivity are discourse particles, response forms, and backchanneling. Response forms explained 27.35% of the variability in pairs' interactivity, while discourse particles explained 9.18% of the variability in pairs' interactivity. Example 6 below presents a conversation with high interactivity (score= 1.6), taken from a task titled *Hiring* which was performed by intermediate students (level two). As can be seen, speakers used response forms (e.g., *yeah, yes, okay*) as they interact mostly to signal responses to previously stated questions and statements. It was also used to support their partners' statements (e.g., ***Yeah** actually, uh he has the ability to to work with...*). Furthermore, discourse particles (e.g., *oh, well*) showed positive association with interactivity. Response forms and discourse particles have been reported to be commonly used in the interactive context (Biber, 2006; Biber et al., 1999). Additionally, discourse particles facilitate interaction in L2 dialogic tasks (Alquraishi, 2020) and reflect high interaction (Csomay, 2007). The current study shows that increased use of these features is associated with increased interactivity. Such associations could

be attributed to the incorporation of response forms and discourse particles, as they tend to be used in short turns, like *yes* and *yeah* in turns 9 and 17, respectively, and the discourse particle *well* in turn 27. Furthermore, backchannelling tended to increase when pairs' interactivity increased, but with weaker relationship compared to the former two features. Utilizing such a feature reflects the speaker's attention to the ongoing discussion, and, like response forms and discourse particles, they tend to be used in short turns (e.g., *uh-huh* in turn 22) which explains their association with interactivity.

Example 6.

1 A: Hi B.
2 B: Hi.
3 A: Uh… I have Sam's uh profile.
4 B: Uh **okay** and I have Greg b—uh profile. Wha—what is the advantage of uh Sam?
5 A: **Well** I think he's a good uh to fit in the job and--
6 B: **Okay**
7 A: And take it, because uh… he ability to finish task
8 B: He has the ability to finish his task?
9 A: **Yes**
10 B: **Oh**, **okay**. What else?
11 A: What what about—uh and uh he has a good communication skills to talk with people
12 B: **Wow**, that's great, that's great uh uh
13 A: What about uh Greg?
14 B: Uh actually I have Greg, uh I think he's uh very be—he will be very good worker
15 A: **Ah** good!
16 B: uh and he is he he care about uh people and uh animal—animals very well. Uh
17 A: **Yeah.**
18 B: Actually he can speak—uh he has a public speaking experience uh and he can speak very well with other people, uh--
19 A: --So this is what we need.
20 B: **Yeah** actually, uh he has the ability to to work with many kinds of people and he doesn't care about the culture and the religion and uh other countries, he can work with any—anyone. How about you?
21 A: **Well** uh he like sense of humor, he's not to be serious all the time,
22 B: Uh-huh okay.
23 A: He's kind of funny guy

24 B: **Okay**
25 A: And that's maybe help him to work… good in the… job
26 B: Actually both of them is very very good worker, but actually we need just one, wha—what should we do now?
27 A: **Well**--
28 B: --What do you think? Actually I I like Greg very well, I think he's very very—he will be very good. Sa—Sam is okay, do you think he's okay?
29 A: But I think Greg more than can take this job.
30 B: **Okay**, uh actually uh, I prefer to go with Greg.
31 A: **Okay**
32 B: Okay?
33 A: **Okay**, thank you B.

(ID: 09154&09151, Task: *Hiring*, Level 2, Interactivity score=1.6)

On the other hand, conversations that included no use of the three abovementioned features tended to have lower interactivity scores (e.g., -2.81, -1.77, -1.55, -.81), where the speakers did not exchange frequent turns and tended to use informational features. See Example 7, where the pair performed the same task (i.e., *Hiring*). Their conversation included almost no use of response forms, discourse particles, or backchanneling, and they tended to exhibit an individual presentation style (Alquraishi, 2020) rather than exhibiting an interactive presentation style. They also tended to use more informational features (e.g., common nouns, definite articles, prepositions) (Biber, 1988) and hesitators (i.e., *uh*) compared to Example 6. A more detailed description of the informational features and hesitators, along with their associations with decreased interactivity, is provided in the next section of the discussion (Section 4.2.2).

Example 7.

1 A: So… uh we are talking about uh… the job… uh… for…. uh uh… and make a decision about who to hire. Uh so, first I want to talk about Sam. Uh Sam is—I think Sam is good—a good fit for the job because has ability to finish task, and I think the task is the important part of the job. So uh it's… very fitted for the job. Uh and Sam has also good communication skills. He can talk about he can… talk a-about something with some people, and uh it's very helpful for his job. Uh and uh also, Sam has… attention to details and a sense of humor that will be also helpful for his job. What do you think, B?

2 B: So I think in my opinion, I think that Greg is a better choice, because uh as I know he's very compassionate. That means that he he knows animals' feeling, I think it's a very important part of this uh of this job, uh he can know the animals' feeling very well, he can do well in this job. And he has uh another… uh a-another good point-good point, that is uh assertive. I think we need we need a kind of this people, uh it's very assertive, is uh good for our jobs, and as I know he's also publi—uh he has uh experience of public uh speaking. Hmm, uh although I don't think uh it's uh ver—uh very useful for this job, but it's sometimes it's uh is used. Uh and he has uh uh, he has a good ability to work with many kinds of peoples, you know uh we need to… uh we need to pro—protect uh the wildlife's animals, so maybe uh we uh we need to work with many kinds of peoples, so I think uh we better to choose uh Greg to fire him—to hire him.
3 A: Uh but… but the task uh is more important of the work. Sometimes you are single people, so I think Sam is more fitted … agree agree agree
4 B: So I agree with you.

(ID: 09560&09444, Task: *Hiring*, Level 2, Interactivity score= -1.77)

It should be noted that the complete absence of response forms, discourse particles, and backchannelling in a text does not necessarily indicate lower interactivity. Pairs may also employ other interactional features, such as *wh*-questions and second person pronouns. Further details on these two features are provided in the following paragraph.

Among the features that showed moderate and weak positive relationship with interactivity are *wh*-questions and second person pronouns, with each feature explaining 16.00% and 9.30% of the variability in interactivity, respectively. When the interactivity of pairs increased, dyads' use of *wh*- questions and second person pronouns tended to increase. *Wh*-questions are used by students in the CCOT to elicit contributions from their partners. Example 8 is a conversation of beginners (level 1) performing a task titled *Choosing Extreme Sport*. In this example, the speakers ask questions (e.g., *where are you going to go? what about you?)* to prompt task-related responses from their partners. Additionally, students used *wh*-questions to initiate their conversations with a polite exchange of typical greetings (e.g., *how are you? fine how about you?).* Generally, utilizing *wh*-questions prompts partners to contribute to the task which encourages a dynamic atmosphere

of interactivity where students exchange turns of asking and responding. Furthermore, second person pronouns increase when interactivity increases, and they tend to occur in conjunction with *wh-* questions, as can be seen in Example 8. Upon closer examination of the data, second person pronouns in high interactivity conversations tend to appear with different types of questions (e.g., yes-no questions) such as (e.g., *can **you** show me? Do **you** know by the car **you** causes the pollution to the air? Are **you** okay, A? Are **you** smoker?*) and provide recommendations (e.g., ***You** must go to the hospital*) and comments (e.g., *It can help **you** to breathe*) in relatively short turn lengths. They also occur with response forms (e.g., *Yeah **you** can take a picture from far away, Yeah it's not expensive for **you**, man*) in turn lengths that are not extensive. Generally, the use of the second person pronouns is positively associated with interactivity, as it often appears in questions where speakers engage their partners by addressing them directly using *you*. The findings suggest that *wh*-questions and second person pronouns are not only indicative of highly collaborative performance between L2 interactants, as reported in Crawford et al. (2019), but also indicative of high interactivity in L2 peer conversations.

Example 8.

1 A: Hi B.
2 B: Hi A.
3 A: How are you?
4 B: Fine. **How** about **you**?
5 A: I'm good. **Where** are **you** gonna do the **where** are **you** gonna to go this summer?
6 B: Maybe I will stay in Arizona and do some stuff and
7 A: Uh are **you**--
8 B: Extreme sport.
9 A: Oh extreme.
10 B: Extreme sport yeah. I will try it.
11 A: **What** kind of ext –extreme sport **you**
12 B: I uh I think I will try the deep sea diving. **You** know it or?
13 A: Yeah a little bit. **What** uh
14 B: It's uh to go to the sea or ocean and uh d –do some diving in uh in the sea and explore uh…explore the the ocean and sea and

15 A: Oh nice
16 B: A lot of kind of fishes and--
17 A: Yeah.
18 B: **You** know try something different.
19 A: Are there any dangerous of this extreme sport?
20 B: Yeah maybe, in the ocean we will have the a lot of sharks.
21 A: Ah yeah.
22 B: It's very dangerous but it's very fun you know?
23 A: Yeah.
24 B: And **what** about **you**. Have anything to go?
25 A: I I gonna do uh do it uh river river rafting.
26 B: River rafting oh!
27 A: Yeah it's uh very exciting uh … uh it's extreme sport and uh it --
28 B: **Where? You** tried it?
29 A: very very interesting. Yeah. I try it.
30 B: How was that?

(ID: 10172&01229, Task: *Choosing Extreme Sport*, Level 1, Interactivity score= 2.29)

Tasks in *Choosing Extreme Sports* almost always received high interactivity scores (above the mean of the interactivity scores of the CCOT, Mean= 0), and pairs performing this task incorporated these two features (*wh*-questions and second person pronouns). However, texts from other tasks tended to have relatively low interactivity scores when these two features were absent. Consider, for instance, Example 9 (where level one students performed a task titled *Scholarship*) which does not contain any use of second person pronouns or *wh*- questions. It includes more use of hesitators (i.e., *uh*), informational features (e.g., all nouns, common nouns, and prepositions), and third person pronouns compared to Example 8. These features and how they tend to occur in low-interactivity conversations will be discussed in the next section of the discussion (Section 4.2.2).

Example 9.

1 A: I'm A, uh I will talk about uh Tom. Uh Tom uh uh will uh going to uh Turkish uh because uh the Turkish uh have uh a lot of uh old uh building uh and uh is uh is uh and it is uh very interesting, and uh Tom uh will uh buy uh many

75

sorven—s-souveniters (struggling to say "souvenirs") uh like uh old stuff and uh old uh carpet because this uh uh tradition for uh Turkish and uh he want uh meet uh uh uh local people because uh he want uh uh he want uh them uh tradition. And uh he will go went to uh Saudi Arabia, uh because Saudi Arabia have uh a big uh Sahara, uh uh it is very interesting, and uh he want uh buy uh many s-souve-souvenirs uh like uh some stuff uh tradition for uh Saudi Arabia, and uh he want to make u—he want meet uh /---/ (sounds like he was trying to say "local") uh people, because he want uh know uh know uh the know uh them uh tradition

2 B: I'm B, I'm student B, I'm talking about uh—thinking about… two reason… Sarah wants to go to two place, they are Japan and China. At first I'm I'm going to talk about Japan. Sarah wants to learn about new countries. If Sarah go to Japan, she can learn about Japanese culture like manner and uh traditional building, and she want to visit controversial tourist attraction, in Japan there are a lot of con-controversial touri-tourist attraction like about war. Then she wants to visit a well-preserved areas. Maybe most tourist…hmm save that save to clean clean to the area… it's good idea. Secondly I'm talking about China. If she go to China, she can learn about Chi-Chinese culture… there are a lot of people… there are a lot of people in China then… a lot of different culture… then she wants to visit controversial tourist attractions o… she should go to place where she can learn about Chinese world. And she wants to visit a well-preserved areas, I think… I think… most tourist save to clean the area. Same same reason. Okay I'm uh s-that's all then we are going to

3 A: Stop stop stop

(ID: 19163&19524, Task: *Scholarship*, Level 1, Interactivity score= -3.15)

Pronoun *it*, contractions, and demonstrative pronouns showed weaker associations (compared to the features discussed earlier) with L2 pair interactivity, explaining approximately 3%, 2.4%, and 1.82% of the variability in interactivity, respectively. These features can be characterized as having brief forms. Previous studies have shown that these features are evident in the interactive context (Biber, 1988; Biber et al., 1999). The findings of the current study demonstrate that increased use of these features is associated with an increase in pairs' interactivity. One possible explanation for such associations could be attributed to the convenience of using short or reduced forms. Example 10 is a high interactivity conversation (score=.96), conducted by beginners (level 1) performing a task titled *Choosing Extreme Sports*. In their conversation, they utilized the pronoun *it* to refer to nouns (e.g., *skateboarding, rock climbing*),

and they used contracted forms (e.g., *it's, that's, didn't*) instead of incorporating the complete forms of these phrases. Also, demonstrative pronouns (i.e., *this*) were used by pairs to refer to the idea of simple life living, as demonstrated in Example 11 (in pairs performing a task titled *Voluntary Simplicity* task). Students engaged in high interactivity might have used these three features to reduce speech length, allowing for quick responses while maintaining the flow of their increased interactivity. Although these features showed a positive association with interactivity, the strength of the relationship is weak, and there are some examples where pairs exhibited high interactivity and did not incorporate a frequent use of these features.

Example 10.

1 A: Ah I like skate –actually I like skateboarding because they have uh uh advantage and uh and uh they have more fun and uh good for health I think **it's** very
2 B: Oh really?
3 A: Yeah.
4 B: **It's** good for health?
5 A: Yeah **it's** good for health and uh very very fun e-every-everyone use **it** that--
6 B: Oh my god.
7 A: Yeah and my friend they use **it** that talk uh talk with me he talk with me--
8 B: Oh really?
9 A: **It's** really good.
10 B: Your friends they are talking and they told me **it** has uh **it** has **it** has more fun and good for health.
11 A: Yeah, **it's** good for health--
12 B: Oh **that's** amazing.
13 A: And **that's** very good very good. I like **it** that yeah.
14 B: But I would I would like to say something to you. I think rock climbing is more better than skateboarding.
15 A: Oh really?
16 B: Yeah, now you will now you will see.
17 A: No I I I **don't** –I **don't** know.
18 B: So because uh skateboarding **it** has no **it** has no advantage.
19 A: You are sure?
20 B: Yeah, **it** has no advantage rock climbing **it** has more-
21 A: Oh

(ID: 08158&08149, Task: *Choosing Extreme Sports*, Level 1, Interactivity score=.96)

Example 11.

5   A: Uh I'm gonna tell you something that I believe uh do you know that live in simple life is the best thing happen to me. I help the environment by doing **this**, what do you think B?

6   B: I believe uh living modern life is better than living simple life because the simple life they doesn't have electronic and cars.

7   A: But you know by doing **this** we help the environment we save money.

8   B: Yeah I know but **this** is hard life.

9   A: I think you will be happier if you do **this**.

10   B: No I think--

11   A: You can teach your kids some stuff you can make your own food.

12   B: Ah ha but… you doesn't have high school for teaching your children and…

13   A: But they're gonna teach uh by doing **this** stuffs--

14   B: How?

15   A: I'm gonna teach there's school for these people.

16   B: No they doesn't have--

17   A: Ok for example do you know?

(ID: 23061&23200, Task: *Voluntary Simplicity*, Level 1, Interactivity score=1.46)

Based on a general inspection, the remaining features (i.e., first person pronouns, word count, attitudinal adjectives) occur alongside other interactive features. For instance, in example 12 below, the high interactivity pair (score= 2.07) used first person pronouns, and attitudinal adjectives, and had a high word count (621 words). As evident, the pair incorporated interactive features discussed earlier including response forms, discourse particles, backchanneling, second person pronouns, and *wh*-questions. Speakers made their contributions using first person pronouns (e.g., *I have many kinds of sushi that's **my** strength*) and attitudinal adjectives (e.g., *great, bad*) in relatively short turn lengths. It could be argued that using first person pronouns and attitudinal adjectives while incorporating interactional features (e.g., *wh*-questions) could have resulted in

conversations with higher interactivity, where students tend to produce relatively shorter turns and high turn counts. Furthermore, Example 12 included a total of 70 turns where students produced a high word count. Alquraishi (2020) reported that frequent turn exchanges in an L2 conversation could result in a high overall word count. This could also explain the positive association between word count and pair interactivity scores in the current study, as the calculation of interactivity scores involved the number of turns per 60 seconds. It is important to note, however, that the associations of each of these three features (i.e., first person pronoun, attitudinal adjective, and word count) with interactivity are very weak, explaining less than 2.5% of the variability of interactivity. Additionally, it should be noted that less frequent use of these features does not necessarily indicate that the conversation is not interactive, as other interactive features could be utilized (e.g., *wh*-questions, response forms).

Lastly, epistemic adjectives and private verbs showed negligible associations and were not considered in the discussion.

Example 12.

1 A: Hi B how are you?
2 B: **I**'m good what about you, my friend?
3 A: **I-I**'m fine, very **well**. B **I** come t-h-here for presentation about my restaurant and **I** want see your restaurant--
4 B: **I-I**'m listening to you no problem.
5 A: Because you are interviewing me and then **I**'m interviewing you.
6 B: Me too.
7 A: First **I-I** have the restaurant about seafood.
8 B: Uh-huh.
9 A: And my strength **I** have many strength. Fir-uh-first one is many many employees /---/ and e-everyone help each other and **I** get a **good** location because many p-people will be come.
10 B: Uh-huh.
11 A: And can **I** see your strength and what your uh
12 B: Okay **I** have uh m-many SWOT analyzes like strengths, weakness, opportunities, threats. First **I** will talk about strengths. Strengths uh my food is very **delicious** a lot people uh uh like it it's the sushi bar all the people know about sushi bar uh

13 A: Yes sure

14 B: **I** have many kinds of sushi that's my strength-uh strengths

15 A: Uh-huh

16 B: And is very very **delicious** uh and we have the sushi you can put it with the seafood. You can put it with the **sweet** and **sour** chicken

17 A: Oh

18 B: We have many kinds--

19 A: **Great**

(ID: 22232&22231, Task: *Selecting a Store to Open*, Level 2, Interactivity score= 2.07

4.2.2. Features Exhibiting Negative Relationships with L2 Pair Interactivity

Thirteen features showed significant negative associations with interactivity, indicating that when interactivity decreased, the use of such features tended to increase. Some of these linguistic markers had or shared general characteristics. The first characteristic involves informational features (Biber, 1988), encompassing all nouns, common nouns, nominalizations, definite articles, pre-modifying nouns, human nouns, place nouns, longer words, and prepositions. The second characteristic involves narrative features including perfect aspect, infinitive, and third person pronouns. The third characteristic is a disfluency feature, namely, the hesitator *uh*.

As explained in the first section of the discussion, it is possible to find texts that exhibit use of several features occurring within a single text (e.g., common nouns and prepositions in the same text). Therefore, attempts were made to provide an example or excerpt that included multiple features (rather than providing a different example for each feature) to demonstrate how features correlate with interactivity. Also, the emphasis of the discussion is on the features with stronger associations.

Of the features that could be characterized as informational, three exhibited the strongest association with interactivity including all nouns, word length, and common nouns, with each explaining 9.18%, 9.92%, and 6.97% of the variability in interactivity, respectively. The remaining informational features (i.e., nominalizations, definite articles, pre-modifying nouns, human nouns, place nouns, and prepositions) had weaker associations, each explaining less than 2% of the variability in interactivity. As explained earlier, when the level of interactivity decreased, L2 pairs' use of informational features tended to increase.

Example 13 below demonstrates the use of informational features in a text with low interactivity. The conversation was conducted by an intermediate (level 2) L2 pair, performing a

task titled *Investing in Science Funding*, where the pair had to decide on different scientific project ideas. The pair received a low interactivity score of -1.06, producing only four turns in the entire conversation. The conversation had an average word length of 4.2, a noun count of 220 per 1000 words, a definite article count of 55.2 per 1000 words, a common noun count of 183 per 1000 words, a proposition count of 75.6 per 1000 words, and a nominalization count of 20.30 per 1000 words. All these frequency counts were much higher than the mean frequencies of the CCOT corpus, except for the nominalization count, which was higher but close to the mean of the corpus (M=19.66) (See Table 4-8).

Table 4-8

Frequency counts of the informational features in example 13 and the CCOT mean

Feature	Word length	All nouns	Definite article	Common noun	Proposition	Nominalization
Example 1	4.20	220.00	55.20	183.00	75.60	20.30
Mean of the CCOT corpus	3.61	155.00	33.79	114.86	55.30	19.66

Note. All frequency counts per 1000 words, except for word length which is the average word length of text.

The excerpt of Example 13 presents around 280 words of the conversation (not the entire text). In this example, the low interactivity pair used nominal elements presented to them in the prompt (see Appendix A for the prompt). This excerpt exhibits frequent use of all nouns (in bold), definite articles (i.e., *the*), common nouns (e.g., *money, people, space*) pre-modifying nouns (e.g., *space telescope, space junk*), nominalizations (e.g., *mission, experiment, possibility*), and prepositions (e.g.., *by, for, to*):

Example 13.

1 A: My **name** is A and **Level** 2B. I I'm **student** A. Uh, I think… uh **the money** would best be spent by creating a **man—manned mission** to **Mars**. Uh, **mane—manned mission** to **Mars** have the… negative negative… uh, **factors**, uh for **example**, **space travel** is dangerous, and uh it's… it's hard to plan for everything for **astronomers**, and uh and also nobody knows how m—h—in **fact** n—how many **peoples** are …in **fact**. However, it it have many positive uh uh **fact**. And for **example people** will be able to conduct new **experiment** based on what they discovered on **Mars**. The… and **the the astronauts** can monitor how **space** affects **living organisms** and also, uh we… we have the **possibility** to discover the uh, the new—new things.
2 B: Uh, I think the **money** would be best spent by creating a gen—ge—gigan—ge—gigantic **space telescope**. Uh they have many positive **spec—aspects**. Uh uh first, the **tec—telescope** can be remotely operate from **Earth**, forty **hours**—twenty four **hours** a **day**. And in **addition**, it's it's uh, three hundred **times** more powerful than any **space tecle—telescope** ever made before. Furthermore, I think we can get the most **knowledge**, uh by using **telescope**, powerful **telescope** to look into the farthest **corner of the universe**. And uh as as everything it has uh negative **pas—pas—uh, aspects**. Uh first because of its **size**, the **telescope** must be fully assem—assembled in **space**, which requires several **trips** by **astronauts**. And uh the **telescope** could easily be damaged by **comets, meteors uh or space junk**. Furthermore, it will spend a lot of **money** to create a gen—gigantic **space telescope**. And uh... so… which one you want to create?
3 A: Uh I guess you… your **opinion** is right, but however, I think the… the manned **mission to Mars** is more creative than the**… s—telescope**. So… what do you think? (laughs)
4 B: I don't know but, I I like your… y—the… your **idea** because the **astronauts** can monitor how **space** affects **living organisms** (sounds like "organizer") because it's…

(ID:12488&12529, Task: *Investing in Science Funding*, Level 2, Interactivity score= -1.06)

The high frequency of nominal features indicates a high density of information (Biber, 1988). The pair also adopted an individual presentational style (Alquraishi, 2020), where they focused more on providing the information presented to them in the prompt to their partner without frequently implementing interactive features (e.g., *wh*-questions, second person pronouns, response forms). Furthermore, prepositions were used by students to connect the nouns; however, most of the prepositions were also provided in the prompt along with the nouns. For example,

many of the propositions used by the pair were taken from the task prompt (e.g., *mission **to** Mars; operate **from** Earth, **corner** **of** the universe, **by** comets, meteors or space junk*) (see Appendix A for the prompt). Other prepositions were accompanied by gerunds in the prompts (e.g., **by** *creating, **by** sending, **by** using*), and they were used by the pair in their conversation. Also, the frequent use of definite articles was accompanied by the frequent use of nouns (e.g., ***the** astronauts, **the** telescope, **the** universe*). Finally, the average length of words was longer possibly because of the frequent use of nouns in this conversation.

Previous studies have shown that nominal structures are indicative of informational language rather than language that involves personal engagement (Biber, 1988). They are also more commonly found in written discourse rather than oral discourse (Biber et al., 1999; Biber & Conrad, 2009). The findings of the current study suggest that low interactivity pairs tend to present a high density of information using nominal structures that could be accompanied by prepositions and definite articles. This observation could stem from the pairs' reliance on individually presenting the information provided in the task prompt rather than incorporating interactional behaviors to accomplish the task.

On the other hand, pairs that used nominal structures less frequently in their performance of the same task (i.e., *Investing in Science Funding*) exhibited higher interactivity. For instance, consider Example 14 below where the pair had less frequent use of nominal forms, definite articles, and prepositions, and had a relatively short word length of 3.6. Also, the pair received a high interactivity score of 0.56. Although the pair in Example 14 still used nominal forms, as they are necessary to accomplish the task, the frequencies of these features are lower than in Example 13.

In the 280-long excerpt, Example 14 used only 19 nouns while Example 1 used more than 40 nouns in the same length excerpt. Also, Example 14 had around 13 instances of prepositions while

Example 13 used around 22 of them. See Table 4-9 below for the summary of frequency counts

of each feature used in the two examples. Furthermore, although both Examples include equal use

of nominalizations (four in each excerpt), it is interesting to see that two of the nominalizations

used in the higher interactivity pair (Example 14) were not taken from the task prompt. These were

question and *suggestion* which are words that could be related to interactional behaviors such as

in "*May I ask you a question?*" used by A in turn seven.

Example 14.

1A: Hello B how you doing?
2B: I'm fine thank you, how you doing?
3A: I'm good. Uh did you hear about that the the government that give us five billion dollars to explore the space?
4B: Yes. I heard about it.
5A: And uh what do you think about it?
6B: Well I think it's a good idea you know … to … well there's a two side of it like uh we have many positive and negative--
7A: May I ask you a *question*?
8B: Yes, sure.
9A: What do you suggest for this uh five billion dollars where do you want to spend this uh money?
10B: Well I'm thinking to buy uh a huge telescope you know to discover many new planets. And what about you?
11A: Look, actually, I think the money would best be spent by creating a manned mission to Mars.
12B: Well, I disagree for sure I disagree with you uh because maybe *it* will cost us more than five million.
13A: I don't think so be-uh I think if we uh calculate it, it would be five billion dollars but we can look at the positive side for this uh for this uh suggest that uh the people would be able to conduct new experiments.
13B: Well--
14A: And wha-what do you have uh positive side for your uh %suggest%?
15B: %Well my positive% is that the telescope can you know like you can open it any time and you can and see from the earth to any planets uh twenty-four uh seven days every we-every we-and everywhere.
16A: Yeah I see it but let me say say another thing to you the another positive thing for my *suggestion* is that the astronauts can measure how space affects living organisms.
17B: Well uh could you repeat that please? In other word?
18A: Sure

(ID: 12492&12506, Task: *Investing in Science Funding*, Level 2, Interactivity score=.56)

Table 4-9

Summary of frequency counts of nominal features used in examples 13 and 14

	All nouns	Prepositions	Definite articles	Common nouns	Pre-modifying noun	Nominalizations	Turn length
Example 13	46.00	22.00	20.00	43.00	3.00	4.00	4.20
Example 14	19.00	13.00	10.00	18.00	0.00	4.00	3.60

Note. The frequency of features in the excerpts are per 280 words

Instead of repeatedly using nouns that are mentioned in the prompt, Example 14 employs the pronoun *it* to refer to the scientific project ideas provided to them in the task. For instance, B (in turn 12) uses the pronoun *it* to refer to the project idea *manned mission* mentioned previously in their interaction. Furthermore, rather than relying solely on an individual presentation style to convey the information from the task prompt, they exhibit an interactive style (Alquraishi, 2020) by frequently asking questions, responding to each other (e.g., *yes, yeah, sure*), and using discourse particles (e.g., *well*). In general, students in Example 14 appear to be primarily focused on their partner where they use interactive features to foster communication as they accomplish the task.

For the remaining features that negatively correlated with interactivity (i.e., third person pronouns, infinitives, perfect aspect), the relationships were vey weak, explaining less than 3% of the variability in pairs' interactivity level. The focus of the following paragraph will be on third-person pronouns and infinitives since they had stronger associations compared to present perfect.

As explained earlier, when the interactivity of pairs decreased, their use of third-person pronouns tended to increase. Example 15 is a conversation conducted by intermediate students, level 2. They performed a task named *Choosing a Patient* in which they pretended to be nutritionists deciding on one patient to be admitted to their clinic. This conversation received a

low interactivity score of -1.18. As evident in the example, both speakers frequently use third person pronouns to describe their respective patients. For instance, speaker A describes her patient, Melia, by employing this feature (e.g., *she is a student, she gained fifteen pounds*). Third person pronouns have been reported in the literature as indicative of narrative discourse (usually occurring in conjunction with the present perfect aspect and past tense) (Csomay, 2004; Stables, 2017). Alquraishi (2020) also reported that third person pronoun is among the features that showed a narrative function where students describe human experiences. Additionally, infinitives are utilized by the pair to describe actions related to the patient (e.g., *she don't have time **to eat***).

Therefore, it could be concluded that low interactivity pairs may exhibit a narrative style in which each speaker is primarily focused on narration, using third-person pronouns and infinitives, while paying less attention to employing interactive behaviors (e.g., asking questions and using response forms).

Example 15.

1 A: Yeah I'm gonna **to talk** about Melia. **She** is a student in uh university I uh think **she** is a good student she has a lot of things **to do**. So uh **she** don't have she don't have time **to eat** uh healthy food uh **sh-she** gained fifteen pound uh so her clothes don't **her** clothes don't fit **her** uh **she** start class-classes from eight until seven p.m. then **she** study at the li-the library uh **she she** buy snacks from the library uh **she** don't have any time **to make** uh healthy food because of that the **she she** gain fifteen pounds.
2 B: Oh and Joe has uh t-another problem too uh **he**'s a great uh student but uh **he-he** has a problem with **his** weight. Uh since **he** wa-he-uh **he** was a b-**he** was a boy **he has** uh always been at least twenty five uh pounds overweight. Uh ob-obesity uh obesity runs uh in **his** family. **He** can't uh **he he** has uh many junk. Uh **he**'s uh /---/ **he**'s uh on a diet **he**'s on uh **he**'s on a diet but just uh doesn't lose uh weight. Uh **he**'s al-**he**'s uh worried about uh diabetes-diabetes. Uh **he he** sits at **his** uh desk for long hours every day **he** can't move uh like a-a-another-another guys or w-with **his** friend.
3 A: Mmhmm.
4 B: A-and he he can't play he can't play with his friend uh his f-friend always.
5 A: Oh I see.
6 B: Thanks.
7 A: Okay thank you.

(ID: 05141&05434, Task: *Choosing a Patient*, level 2, Interactivity score=- 1.18)

On the other hand, Example 16 below is a high interactivity conversation of the same task, also performed by intermediate L2 dyads. The pair received a high score of 1.19, and their speech included fewer uses of third person pronouns. In the 246-word-long excerpt, the pair included only 15 instances of third person pronouns (fewer than Example 3 which included 44 instances in the excerpt of the same length- 246 words- above). Despite using this feature to describe their patients' experiences, they did not exhibit a narrative style. Instead, they exhibited interactive behaviors such as backchanneling (i.e., *uh-huh*), incorporating response forms (e.g., *yeah, ok*), and asking questions (*why? what about you?*). The high interactivity dyad incorporated third person pronouns as they are necessary to accomplish the task, which involves discussing the patients' situations. Refer to Table 4-10 for the frequency counts (per 1000 words) of the three features (third person pronouns, infinitives, and present aspect) in Examples 15 and 16.

Example 16.

1 A: Uh hi B, how are you?
2 B: Hi, I'm fine what about you?
3 A: I'm good. Uh we have uh two patient in the health center.
4 B: Uh-huh.
5 A: Uh we need –they need to lose weight.
6 B: Uh-huh.
7 A: Uh, one of them my patient her name is Cindy and I think your uh patient his name is…
8 B: Jack.
9 A: Jack.
10 B: Yeah.
11 A: Right. Ok uh--
12 B: I just I just came talk to with you about them … I think I think we uh we have to help Jack.
13 A: Uh why?
14 B: Because he can't sleep more than 4 hours a night because of his weight.
15 A: Ok, I I see your point about that he can't sleep 4 hours at night uh but my patient Cindy uh she has obese parents uh that make their so so fat…

16 B: Oh
17 A: Uh, and she ha – she works uh long hours.
18 B: Uh-huh.
19 A: What about you?
20 B: So Jack he he told me that he eat a lot a lot of meals from McDonalds and that hurt him make his weight goes up. So I think to…
21 A: Bu –yeah you right about that, but Cindy uh she gained weight every weeks like 20 pounds.
22 B: Wow.
23 A: Yeah, that's a lot.
24 B: Yeah. Also Jack uh he has a heart problems in his family and just broke my heart.
25 A: But that--
26 B: --So I want to help, I think he need help.
27 A: But that's in his family line.
28 B: Yeah, right but…otherwise at hi-in his family uh help him.
29 A: Ok, uh.

(ID: 05136&05570, *Task: Choosing a Patient*, Level 2, Interactivity score=1.19)

Table 4-10

Frequency counts of narrative features in Examples 3 and 4

	Third person pronoun	Infinitives	Present aspect
Example 15	180.30	16.40	4.10
Example 16	82.60	5.70	0.00

Note. Frequency counts are per 1000 words

The last feature that showed a negative relationship with interactivity is the hesitator *uh*. When the interactivity of pairs decreased, their use of the hesitator tended to increase, and the pairs' interactivity level explained around 8% of the variance in hesitator use during the dyadic interaction. Example 17 below is a conversation taken from a task titled *Sleep Clinic* where intermediate L2 students (level 2) pretended to be doctors discussing and deciding on one patient with a sleep disorder to be admitted to their clinic. Example 17 is a performance that exhibited a low interactivity of -2.13. As evident in the excerpt, the low interactivity pair produced a high number of hesitators. Hesitators are used by speakers at points where they need more time to plan

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ahead (Biber et al., 1999). Additionally, previous studies suggested that hesitators (also referred to as filled pauses) result from cognitive processing load (Holmes, 1988), and speakers use them to gain time to manage the speaking process (Levelt, 1989; Simpson, 2006). In low interactivity pairs, there could have been a need for time to think about their upcoming contributions, which is facilitated by using hesitators. In the context of low interactivity, pairs do not tend to take frequent turns; instead, they produce long turns of speech, in which they might use hesitators frequently to buy time for thought formation.

Conversely, Example 18 is a high interactivity conversation (score = 2.11) performed on the same task by intermediate L2 students. Unlike Example 17, the dyad exhibited frequent turn exchanges (55 turns), and they rarely used hesitators. It is possible that because the partners frequently held the floor, speakers had the opportunity to think about their next contributions, which might have made them less likely to produce filled pauses.

Although hesitators showed a significant relationship with interactivity, it is important to note that the strength of the relationship is weak. There are some instances where dyads had high interactivity scores (e.g., interactivity score=1.58) and still exhibited a relatively frequent use of filled pauses.

Example 17.

1 A: My name is A. **Uh** the student A. I will talk about it **uh** … John Brown. **Uh** he is work at a bank. **Uh** his problem he cannot sleep because **uh** her husband **uh** snore. **Uh** I think he must **uh** admitted to the **uh** hospital because **uh** … he cannot go **uh** be-he cannot focus on her job during the daytime because **uh** … her husband s – snores. And **uh** because that he has **uh** more problem he cannot <u>concen</u> - concentrate in his job. And **uh** must **uh** she ask **uh** an consultant to **uh** help **uh … uh** her.
2 B: I am student **uh** B. My name's B. I will speak about John Smith. John is **uh uh** student – student in high school. **Uh** his problem that he **uh** suffer from insomnia, so he stay up until two **uh** a.m to study. I think he should **uh** admi-**uh**-admit him to go to the hospital because he can't perform his body didn't sleep. **Uh** also, **uh** he **uh** he want to go to a law school. **Uh** so if he didn't get enough **uh** …

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uh sleeps he will not **uh** perform **uh** good in school and **he he** will fall **uh** asleep. So **uh** I, I, I admit him to go to the hospital to get a better **uh** treatment and can start his **uh** work **uh** in school.

(ID: 20167&20281, Task: *Sleep Clinic*, Level 2, Interactivity score=-2.13)

Example 18.

 1 A: Hi Doctor B. How are you.
 2 B: Hey, how are you.
 3 A: Good.
 4 B: So, talk about your person.
 5 A: Uh, actually I have… John Smith, he is a
 6 B: Mm hmm
 7 A: Sick.
 8 B: Yeah.
 9 A: He's…I should use he deathful harm
10 B: not good sleeping?
11 A: Yeah, he's he's can't sleep well, you know.
12 B: Yeah.
13 A: He's in high school and he want to study…
14 B: Oh, he is a student?
15 A: Yeah. A student.
16 B: Oh.
17 A: He want… to study laws in law school.
18 B: Mm-hmm.
19 A: But he have…
20 B: Lot of homework –homework to do?
21 A: Like…insomnia.
22 B: Oh
23 A: He can't sleep well you know at night. He still…stay up uh until 2:00am.
24 B: 2 am? Wow!
25 A: He can't sleep so
26 B: Yeah, I got a person named Linda, that was –he he working in the bank and he you know he he he must work at 7 clock in the morning.
27 A: Really.
28 B: So he he must wake up so early.
29 A: Yeah.

(ID: 20177&20471, Task: *Sleep Clinic*, Level 2, Interactivity score= 2.11)

4.3. Conclusion

To sum up the findings of the first aim (which explored the relationship between L2 pair interactivity level and their use of lexico-grammatical features), four features that are likely to occur in L2 conversations of high interactivity included response forms, *wh-* questions, second person pronouns, and discourse particles. Moreover, nominal structures (namely all nouns, common nouns, and word length) and hesitator *uh* tended to increase with low interactivity. This overall pattern has also been reported in Barbieri (2015), which showed that involved features (i.e., *wh*-questions, discourse markers, response tokens) increase with interactivity while hesitators increase with lower levels of interactivity.

Other features also showed positive or negative relationships with pairs' interactivity; however, the strength of the associations was weak, with each feature explaining less than 4% of the variability in interactivity and vice versa. Generally, it seems that features prevalent in lower levels of interactivity were characterized as informational, narrative, and less fluent, where partners tend to adopt an individual presentation style in their interactions. Furthermore, the features prevalent in higher interactivity can be characterized as brief (e.g., contractions, pronouns), attentional (e.g., response forms, backchanneling) elicitative (i.e., *wh*-questions), and more fluent, where students tend to adopt an interactive presentation style.

The linguistic features produced by L2 pairs generally showed weak associations with their level of interactivity, except for *wh*-question and response forms (which exhibited moderate relationships with pairs' interactivity level). There are two reasons that could explain the weak level of associations. First, for a pair, there are various features they can use to demonstrate high interactivity in their performance. For example, they can use response forms and discourse

particles; however, when a pair's performance lacks use of these two features, it does not necessarily mean that their performance is not of high interactivity. Rather, there are other features they can utilize to perform a task with high interactivity such as using *wh*-questions and second person pronouns. In other words, there are multiple ways in which pairs can use specific features to exhibit a performance of high interactivity. The fact that there are alternative ways to exhibit interactive behaviors could explain why such features showed weak associations with interactivity.

Second, the approach adopted to measure pairs' interactivity level has gone through multiple steps. They were based on three variables, two objective measures (turn count and turn length) and one subjective measure (raters' judgment of collaboration). Then they were standardized and composed. Although an attempt was made to follow a principled approach in measuring pairs' interactivity level, the composition of the three different variables could have introduced noise that affected the accuracy of the interactivity metric. This, in turn, might have resulted in weaker relationships between pairs' interactivity level and their use of the selected features.

5.   Chapter 5- The Relationship Between Interactivity and Fluency Features

In this chapter, the results and discussion of question two are provided. The second question was: What is the relationship between pairs' fluency features and pairs' interactivity level (composite score)? Five fluency features were considered in the study including silent pause, speech rate, average run duration, filled pause, and average pause duration. The results section presents the findings derived from the second question. Next, the discussion section interprets and discusses these findings.

5.1. Results

As previously stated in the methods in Chapter 3, to explore the association between L2 pair interactivity and L2 pairs' English fluency, Pearson's correlation tests were performed between dyads' level of interactivity and three fluency features including silent pause, speech rate, and filled pause. The data of average run duration and average pause duration did not have normal distributions based on Shapiro-Wilk tests. The average run duration data also had one case of an outlier. Therefore, Spearman's rank correlation tests were conducted to investigate the relationships between the fluency features (i.e., average run duration and average pause duration) and interactivity scores. The descriptive information is discussed first, then the results of these tests.

The descriptive details of the fluency features are presented in Table 5-1 below. The first feature is the number of silent pauses, which was normalized to 60 seconds. The pauses that were measured had a duration of 0.25 seconds or longer. As seen in the table, the pairs produced a mean of approximately 21 pauses in 60 seconds (one minute), and based on the standard deviation (SD), 68% of the pairs (approximately 87 pairs) produced silent pauses ranging from 15 to 25 pauses per minute. The fewer silent pauses the pair produced, the more fluent their speech was, as measured

by this metric. The pairs that generated the highest number of silent pauses, considered the least fluent as measured by this metric, produced around 30 pauses per 60 seconds. The pairs that generated the lowest number of silent pauses, exhibited the most fluent speech as measured by this metric, produced only 8 silent pauses per 60 seconds.

The second feature is the number of filled pauses, which was normalized to 60 seconds. The pairs produced a mean of 15 filled pauses per 60 seconds. Based on the SD, approximately 68% of the dyads produced filled pauses ranging from 9 to 21 per 60 seconds. The dyads that produced the highest number of filled pauses (indicating the least fluent speech as measured by filled pauses) generated around 30 filled pauses per 60 seconds, while the dyads that produced the lowest number of filled pauses (indicating the most fluent dyads based on this metric) had only one filled pause per 60 seconds in their speech.

The third feature is average run duration, which includes any speaking time between two pauses equal to or greater than 0.25 seconds. As seen in Table 5-1, the mean of the average run duration of the conversations produced by pairs was around 1.78 seconds. The dyads that produced longer average run durations are considered more fluent than those who produced shorter average run durations. The shortest average run duration generated in the data was 1.14 seconds (indicating the least fluent conversation as measured by this metric), while the longest average run duration was 2.87 seconds (indicating the most fluent conversation in the data).

The fourth feature is average (mean) pause duration which is the average length of silent pause for each conversation (text). Table 5-1 shows that the mean of the average pause duration of the conversations performed by dyads was 0.58. The shortest average pause duration generated by pairs was 0.36 seconds (the most fluent conversation as measured by this metric), while the

longest average pause duration is 1.30 seconds (the least fluent conversation in the data based on this metric).

The fifth feature is speech rate, which is the average number of syllables generated per minute (60 seconds) for each text. The dyads in the study produced a mean of 177 syllables per 60 seconds. The more syllables a pair produced per 60 seconds, the more fluent (faster) their speech is. The fastest speech rate generated in the data was 252 syllables per minute, while the slowest speech rate produced in the data was 109 syllables per minute.

Table 5-1

Descriptive details of the five fluency features

	N	Mean	SD	Min	Max	Median	IQR
Silent pause/60s	127	20.665	4.785	7.70	30.30	20.729	7.13
Filled pause/60s	127	14.933	6.222	0.99	29.64	14.951	8.47
Ave run duration/text	127	1.779	.363	1.14	2.87	1.728	0.51
Ave pause duration/text	127	0.576	.145	0.36	1.30	0.546	0.17
Speech rate/60s	127	177.081	27.530	109.46	252.52	178.788	33.62

Note. The speech rate is the number of syllables per 60 seconds

Furthermore, the descriptive details of the interactivity scores are provided in Table 5-2 below. The interactivity scores are composed of three standardized measures (variables). The first measure was the turn count of the conversation divided by the total time of speech, then it was normalized to 60 seconds. The second measure was the reversed turn length of the conversation, which was calculated by dividing the total number of words by the number of turns. This measure was reversed by multiplying it by -1. The third measure was collaboration rating, which was the

average score provided by two raters who evaluated the conversations. It should be noted that the interactivity score was standardized and computed only once, in the first question (which included 769 conversations). For the second research question, the interactivity scores for the dataset were taken from the interactivity scores generated for the first research question (Chapter 4). The following is the equation that was used to compute the composite interactivity score: (Z score of turn count + (Z score of turn length * -1) + Z score of collaboration) / 3. Please refer to Chapter 3 for a detailed description of the interactivity score. Higher interactivity scores refer to higher degrees of interactivity among pairs.

Table 5-2 shows the descriptive information of the interactivity score in the dataset (N=127). The mean interactivity level exhibited in the population is 0.041. The SD is notably high (SD=.68), exceeding the mean interactivity score. This high value of SD can be explained by the eight different tasks (i.e., *Advertisement, Cancer Advice, Choosing an Extreme Sport, Opening a Barbershop, Crime Statistics, Chen Problem, Music and Vocabulary,* and *Presentation on Immigration*) the students performed in the current dataset. For example, *Choosing Extreme Sport* generated a notably higher interactivity mean score compared to *Crime Statistics*, which exhibited a very low mean score of interactivity. Please refer to Chapter 6, which provides a detailed description of the significant effect of individual task on pairs' interactivity levels.

Additionally, approximately 68% of the data (around 87 conversations) received interactivity scores ranging from -0.64 to 0.72. The lowest interactivity score generated in the dataset was -2.39 (indicating a low interactivity level), and the highest interactivity score was 1.60 (indicating a high interactivity level).

Table 5-2

Descriptive details of the interactivity scores

	N	Mean	SD	Min	Max	Median	IQR	Skewness	Kurtosis
Interactivity scores	127	0.041	.68	-2.39	1.60	0.060	0.78	-0.447	0.952

Note. The interactivity scores are composed of standardized turn count, reversed turn length, and collaboration scores.

Regarding the relationship between interactivity and fluency features, the Pearson's correlation test showed a statistically significant ($p < .01$), moderate negative correlation between pairs' interactivity scores and the number of silent pauses. The coefficient value was r (127) = -.486, indicating that the interactivity scores explained 23.62% of the variance in the number of pauses (see Table 5-3 below). This means that when the interactivity of pairs increased, the number of silent pauses tended to decrease, showing that higher interactivity pairs are associated with more fluent speech because they produced few silent pauses while pairs with low interactivity were associated with less fluent speech because they produced more silent pauses.

Furthermore, the Pearson's correlation test also showed that there was a statistically significant ($p < .01$) small positive correlation between students' interactivity level (scores) and their speech rate with a coefficient value of r (127) = .381. The interactivity score explained 14.52% of the variance in speech rate. This means that when the interactivity of pairs increased, their speech rate tended to increase as well. However, the Pearson's correlation test between the interactivity scores and filled pauses did not show a significant relationship (r=-.128, p= .152) (see Table 5-3). See Figures 5-1, 5-2, and 5-3 for the scatter plot of the association between the interactivity score and the three fluency features (i.e., silent pause, speech rate, filled pause) respectively. For the filled pause, the scatter plot in Figure 5-3 suggests a trend in which this feature becomes less frequent as L2 pairs' interactivity level increases.

Table 5-3

Coefficient r of the relationship between pairs' interactivity and three fluency features

	Silent pause	Speech rate	Filled pause
Interactivity level	-.486**	.381**	-.128

Note. ** P value is < .01. The results were based on Pearson's test.

For the fluency features that did not follow normal distributions, the Spearman's rank correlation tests showed that there was no significant correlation between the interactivity scores and average run duration or between the interactivity scores and average pause duration (See Table 5-4). Also, see Figures 5-4 and 5-5 for the scatter plot of the association between the interactivity scores and the two fluency features (i.e., average run duration and average pause duration). Figure 5-5 relatively shows a trend in which pairs' average pause duration becomes shorter as their interactivity level increases.

Table 5-4

Coefficient r of the relationship between the interactivity scores and two fluency features

	Ave run	Ave pause
Composite score	-.016	-.014

Note. The test is based on Spearman's test

Figure 5-1
The relationship between students' interactivity and silent pauses
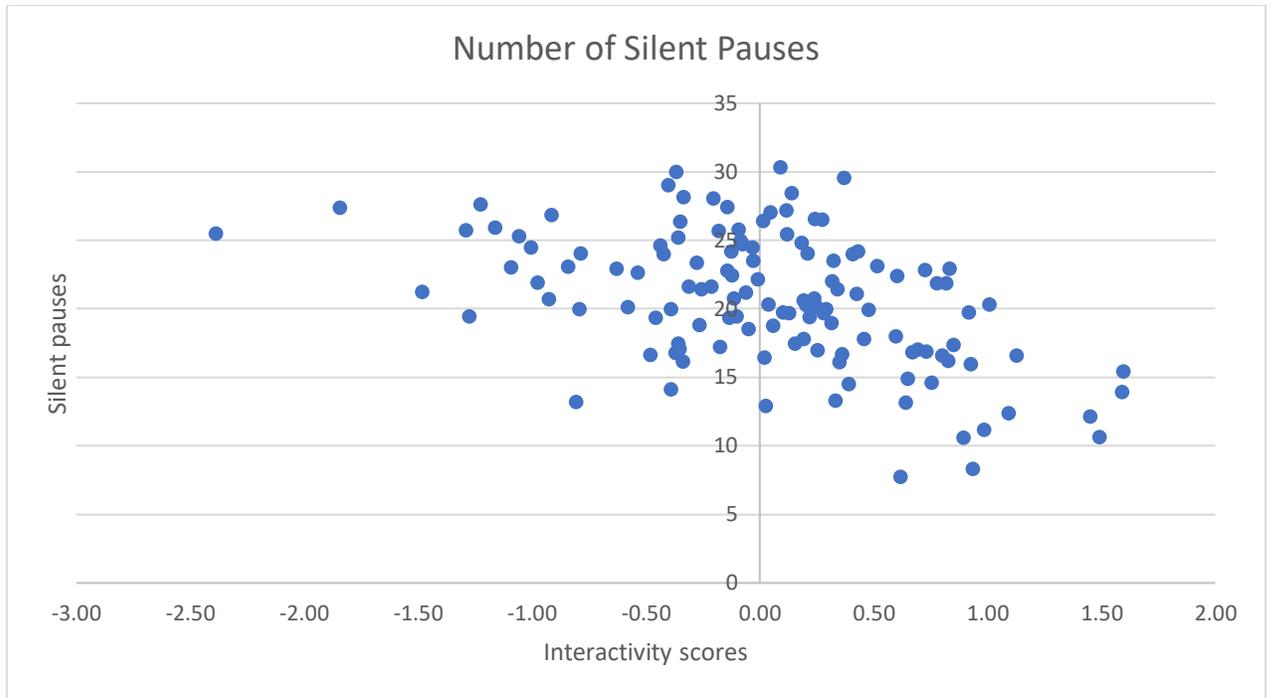
Figure 5-2

The relationship between students' interactivity and their speech rate.
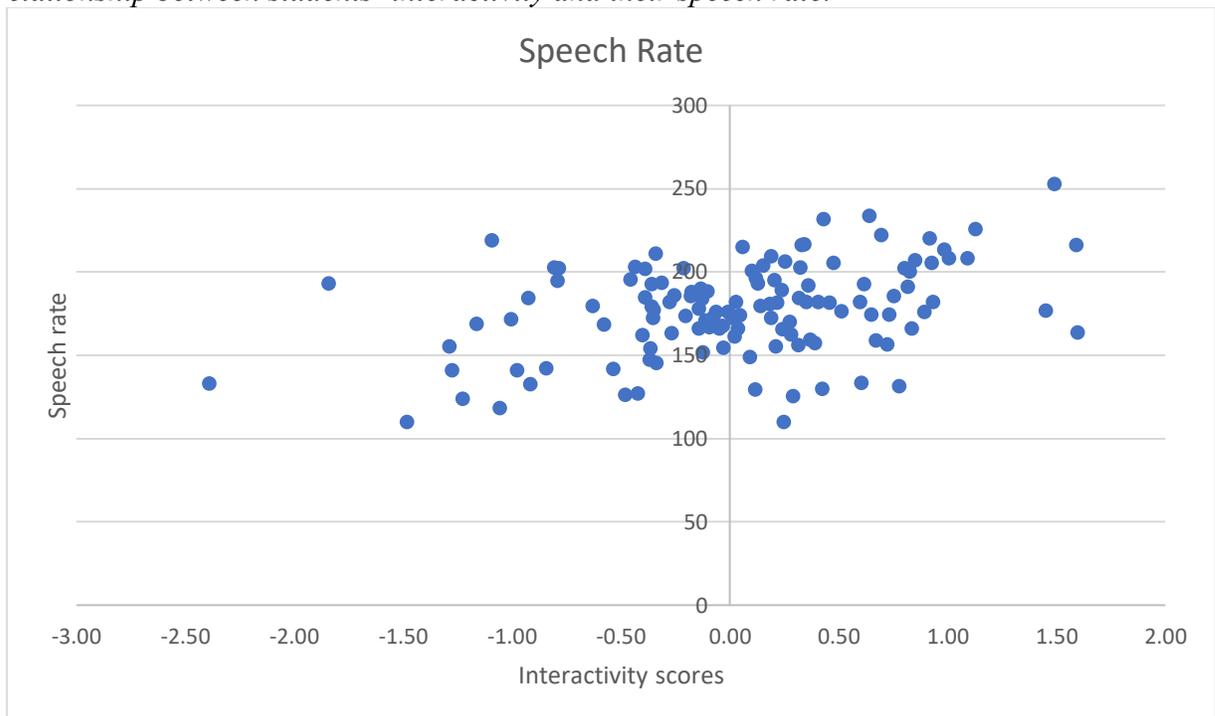
Figure 5-3

The relationship between pairs' interactivity and use of filled pauses
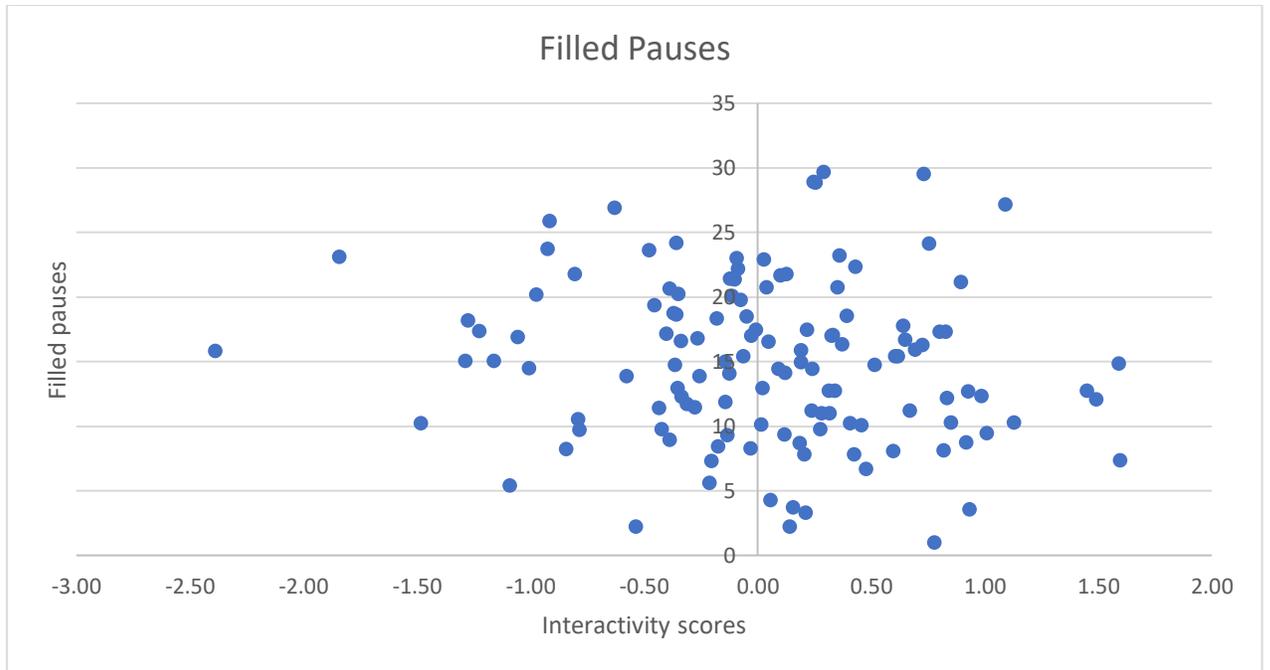
Figure 5-4
The relationship between students' interactivity and average run durations
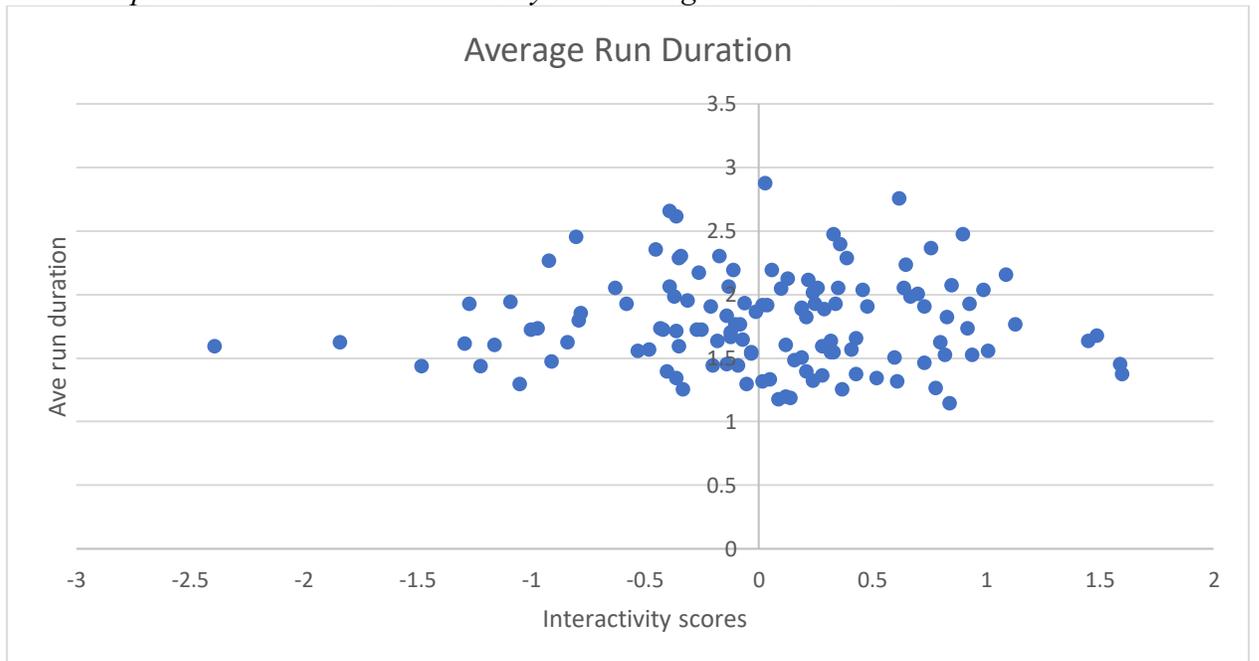
Figure 5-5
The relationship between students' interactivity and average pause duration

Average Pause Duration
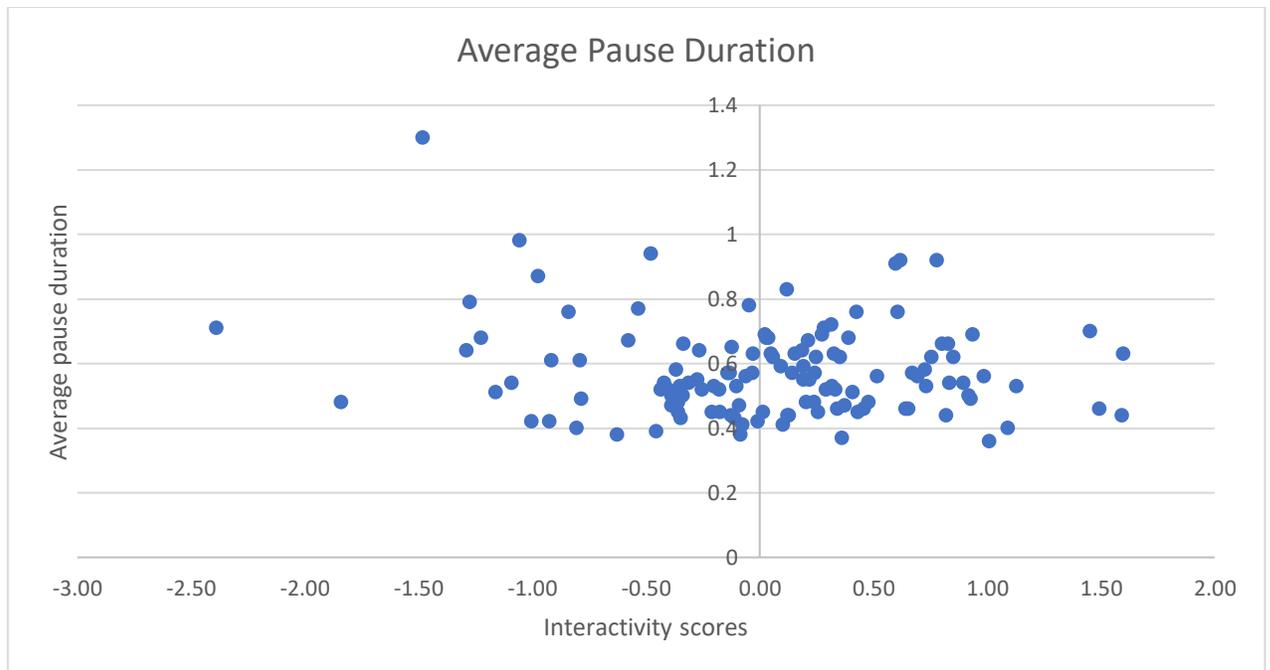
5.2. Discussion

The second research question in the dissertation study aimed to explore the relationship between the level of interactivity among L2 pairs (as indicated by composite scores involving turn count, turn length, and raters' evaluations of collaborative behaviors) and their English fluency. Pairs' fluency was measured using five features: silent pause, speech rate, filled pause, average run duration, and average pause duration. While previous studies have demonstrated that dialogic contexts tend to promote more fluent L2 speech in comparison to monologic contexts (Ejzenberg, 1997; Michel et al., 2007; Tavakoli, 2016; Wolf, 2008; Wright, 2021), little is known about the impact of pair interactivity levels within the in interactive context on L2 fluency. To address this question, relationship tests (specifically Pearson's and Spearman's correlations) were conducted to explore the association between the pairs' interactivity levels and each individual fluency feature. The following paragraphs outline the general trends observed in the results and then discuss/demonstrates the significant findings using examples from the data of the study.

Looking at the general pattern, the results showed that higher levels of interactivity exhibited in pairs' conversations were mostly associated with more fluent speech as measured by four of the five fluency features including speech rate, silent pause, filled pause, and average pause duration. In other words, pairs with higher interactivity scores tended to exhibit a reduced number of silent pauses and filled pauses, shorter pause durations, and faster speech rates (all of which suggest more fluent speech with higher interactivity levels). However, the feature of average run duration showed a different direction of association where interactivity is linked with less fluent speech as measured by the average run duration. This is an interesting observation as it contradicts the rest of the results; that is higher interactivity is associated with more fluent talk as measured by four fluency features (i.e., silent pause, filled pause, average pause duration, speech rate). Based on the trend of the average run duration observed in the current study, when the interactivity of pairs increases, the average run duration decreases (shorter average run durations). Previous studies consider shorter run durations to be indicative of less fluency as it reflects L2 learners' struggle to maintain longer stretches of speech without interruption (pausing) (Ghanem, 2021). One explanation for this contradicting result is that in interactive contexts, highly interactive pairs tend to engage in frequent short turns (Alquraishi & Crawford, 2021). Based on the measure of interactivity in the current study, if a pair is highly interactive, they are likely to have a frequent exchange of turns. These turns are not usually long as the interlocutors tend to stop their speech when they either give the floor to their partner, get interrupted by a partner, or even backchannel using short turns (e.g., uh-huh). The following example, Example19, is an excerpt of a conversation that received a high interactivity score of 1.60. The pair uses interactional behaviors where they backchannel and use response forms (e.g., *Uh-huh* and *yeah)* and give away the floor as they ask their partner questions (i.e., *how are you B?*) These interactional behaviors may have

caused the average run duration to show a trend of shorter duration values as the interactivity scores increased.

Example 19.

1 A: Hi how are you Mr. B?
2 B: I am fine thank you.
3 A: I always travel to to (.33s) uh a long trip and I have uh(.62s) I don't have a camera for uh memorize. You have a camera?
4 B: Yup, uh are you looking for a certain uh(.32s) type of camera?
5 A: Uh yeah, I want the best one and the cheapest one
6 B: Yeah because we have uh different kinds of cameras, (.56s) and uh you just came on the right time (.35s) and on the ri—right place
7 A: Okay
8 B: Because (.63s) uh we have a new brand
9 A: Uh-huh
10 B: Camera, (.33s) and it's called Canon
11 A: Yeah
12 B: Yeah
13 A: Okay Uh (.25s) it can work un-under the water?
14 B: Yeah it works under the water, (.32s) it against the water

(ID: 02258&02042, Task: *Advertisement*, Level 1, Interactivity score=1.60)

The observation that higher interactivity showed a trend of having shorter average run duration suggests that average run duration may not be an appropriate measure of L2 fluency in interactive contexts. This measure could lead to misleading interpretations since short turn lengths in the interactive context would cause the average run duration to be shorter (which might mistakenly imply lower fluency). While this observation is not significant, and the argument is based only on the pattern/trend of the relationship between interactivity and average run duration in the current study, this argument can be supported by Wright (2021) who reported that L2 interactive contexts had shorter average run durations than non-interactive contexts suggesting that shorter turns indicate effective turn-taking rather than holding the floor inappropriately for long durations.

Two fluency features showed significant relationships with L2 pairs' interactivity levels (the number of pauses and speech rate), where interactivity explained approximately 24% and 15% of the variance in the two fluency features respectively. Pairs that exhibited high levels of interactivity tended to produce fewer pauses and generate faster speech than pairs with lower interactivity levels. To illustrate the relationship between the two fluency features and the pairs' level of interactivity, two examples (Examples 20 and 21) from the CCOT subset are provided below. Examples 20 and 21 represent conversations with low and high interactivity, respectively. Example 20 received a relatively low interactivity score of -1.02, while Example 21 received a higher interactivity score of 1.49. The duration of the extracted examples is 120 seconds each (not encompassing the entire conversation). Both examples involve level 2 students conducting a task named *Presentation on Immigration*. The pair in Example 20 (low interactivity) engaged in four turns within the excerpt, produced 43 silent pauses (noted in parentheses), and articulated 344 syllables per 120 seconds. On the other hand, the pair in Example 21 exchanged 36 turns, yielding only 20 silent pauses, and producing 511 syllables within the 120-second-long excerpt.

Example 20.

1A: My name is A I'm student A
2B: My name is **uh (.27)** B I'm student B
3A: **Uh (.37)** at there I have three topic <u>the first one is</u> **(.28)** <u>concern related to</u> **(.25)** <u>teenager</u> **(.29)** <u>immig—immigrants</u> **(.31) uh** I think this topic can talk about **uh (.45)** how can worry about **(.25)** when teenager come to USA and **uh (.49)** <u>the the second topic is</u> **(.36)** <u>a way to help</u> **(.68)** <u>immigrant improve their English</u> **(.28)** then can talk about **(.34)** how can we **(.25) uh** help people to **(.34)** help **(.40) uh** children **(.47)** when they get here to **(.31)** improve their English **(1.38)** the se—**uh** the <u>third topic is</u> **uh (.46**) <u>type</u> **(.25)** <u>for job that immigrant have or immigrant</u> **(.50)** <u>have in the USA</u> **(.72)** that is talk about **(.28) uh** how to people find **uh** how to children find job in the **(.55)** United State
4B: **Uh** I also have **uh** three topic my <u>first topic is</u> **uh (.70) uh** <u>some reason for immigration by different countries</u> **uh (.50)** be—because some some reasons **uh** and **uh** maybe **(.36)** your parents live in differ **(.27)**—different countries so you need **uh** the **(.37)** immigration **(.25)** maybe you like it and you can immigration **(.63) uh** <u>the second is uh education public for</u> **(.30)** <u>immi—immigrants in USA</u>

(.40) uh in America helps us some education political to help or **(.49)** immigrants **(.25)** to help to their life **(.30)** their the live **(.75) uh** my <u>three is **uh** child immi—</u> **(.38)** <u>immigrate is difficult</u> **(.35)** maybe children come **uh** different country **(.39)** is **uh (.35) uh** don't have a friend **(.58)** or language is very difficult for their life **(.36)** what do you think which one is better?
122 seconds; 43 pauses ; average pause duration: .42

(ID: 17555&17585, Level 2, Task: *Presentation on Immigration*, Interactivity score= -1.02, duration: 120, syllables: 344)

Example 21.

1 B: **Uh** my name is B partner B
2 A: My name is A partner A
3 B: **Uh** hi A how are you?
4 A: Hi I'm fine thank you how are you?
5 B: **Uh** I'm good **(.63s) uh** so A **uh** we have presentation you know? **(.58s)** For 105
6 A: Yeah yeah I hear about it yeah
7 B: Yeah so **uh (.27s)** I **uh** do you have some idea about that? %Like to talk about in the%
8 A: Yeah yeah sure sure **(.26s)** I have I have three ideas for the presentation
9 B: Tell me them
10 A: Ok **uh** one of them is concerns (**.25s)** related to teenager immigrants ways
11 B: That's good
12 A: Yeah ways to help immigrants improve their English types of jobs **(.25s)** that immigrants have **(.29s)** or might have in the USA
13 B: Oh no I don't think **uh** the last one is good **(.55s) uh** so I have **uh** three ideas also
14 A: Yeah can I have them?
15 B: Ok **(.49s) uh** common reasons for immigration by different countries
16 A: Yeah that that sounds good yeah
17 B: **Uh** education policy for **uh** immigrants in the US **(1.24s) uh** and the last one **(.35s)** child immigrants' difference—difficults sorry
18 A: Yeah Yeah the last one is so exciting I think
19 B: So I think we w—will choose three of **these**—this six so what do you think? I I prefer like I think the **first two** you told me about them **(.32s)** it's very interesting you know like uh concerning related to teenager and what's the **second one**?
20 A: **Uh** ways to help immigrants improve their English
21 B: Yeah yeah **this one** I I like it
22 A: Ok
23 B: What do you think about like **uh** the child-immigrant's difficults?
24 A: **Uh** I I think it's **uh** very nice subject and it will be **(.38s)** useful **(.70s)** for the children

25 B: So you have some ideas like to talk about like **uh**
26 A: Yeah
27 B: Concerns related to teenager
28 A: You know the teenager immigrants **(.46s)** they are come from far away from countries and they didn't understand about the immigrants--
29 B: So why do you think they come to US?
30 A: They come for the study or **uh (.35s)** to see their future
31 B: Oh yeah that's right like because study in **uh**--
32 A: In the US
33 B: US is very good
34 A: Yeah of course
35 B: Ok what's about the the **other one**? **(.34s)** What you will talk about?
36 A: **Uh** ways to to help immigrants improve their English so some of immigrants come from the far away countries **(.31s)** they do not **uh** understand the English very well **(.52s)** so I think they must improve their English **(.44s)** to can live in the US

(ID: 17257&17471, Level 2, Task: *Presentation on Immigration*, Interactivity score= 1.49, duration: 120, syllables: 511)

The number of silent pauses produced in Example 20 (low interactivity) was twice the number of silent pauses produced in Example 21 (high interactivity). Additionally, Example 20 exhibited a notably slower speech rate (344 per 120 seconds) compared to Example 21 (511 per 120 seconds). However, both Examples did not display notable differences in their production of filled pauses (in bold). Examples 20 and 21 had comparable numbers of filled pauses, 26 and 24, respectively. They also displayed similar average pause durations, with values of 0.42 seconds and 0.44 seconds for Examples 20 and 21, respectively. These two examples show that speech rate tends to increase as interactivity increases, while silent pauses tend to decrease as L2 pairs' interactivity increases.

As demonstrated in the previous two paragraphs, highly interactive pairs are linked with more fluent L2 speech, as measured by speech rate and number of silent pauses. It seems that frequent turn-taking may be advantageous for interlocutors, granting speakers the cognitive space to form their forthcoming contributions as their partner holds the floor. Consequently, receiving additional

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time during turn-taking could have contributed to the highly interactive pairs (e.g., Example 21) exhibiting a rapid speech rate and a decreased number of pauses. In other words, the highly interactive pair may not need to pause frequently since they were already given some time to think about and form their ideas as their partner maintains the conversation. On the other hand, the low interactivity pair in Example 2 isn't engaged in frequent turn exchanges which in turn urges the speaker to produce long turns. As a result, they might have needed time to cognitively prepare their speech, which could have made them pause frequently and produce a slower speech rate compared to the highly interactive pair in Example 3.

Furthermore, the low interactivity pair in Example 3 had lengthy turns where they seemed to be focused on presenting or listing informational content related to the task. For instance, in the underlined content in Example 20 above, the speakers individually provide a list (e.g., first, second) involving informational content taken from the task prompt (e.g., teenage immigrants, a way to help immigrants improve their English). During these long turns, speakers seemed to rely more on individual contributions rather than actively collaborating with their partners. Collectively, the reliance on individual effort to present or recall task-related information within extended turns in their conversation might have compelled the pair to expend heightened cognitive effort. This could potentially account for their increased pausing frequency and their slower speech rate.

On the other hand, the high interactivity pair (Example 21) has relatively short turn lengths where both speakers support each other using interactional behaviors (e.g., backchanneling, responding, providing opinions, asking questions), and they do not rely on individually presenting or listing the information they have. They also rely on using reduced forms to refer to lengthy phrases and sentences. In Example 21, the pair uses different pronouns (e.g., that, them, it) and

determiners (e.g., *the last one, the second one, this one, the other one*) to refer to the specific sentences/ideas the interlocutors mentioned in their conversation. For example, speaker B uses the phrase 'the last one' to refer to A's previously stated sentence: '*types of jobs that immigrants have or might have in the USA*' (underlined in the example). Utilizing reduced forms (pronouns and determiners) instead of restating previously stated vocabulary and lengthy sentences could have reduced the cognitive effort needed for recalling and expressing longer (and perhaps more complex) vocabulary, potentially resulting in decreased disfluent speech (measured by speech rate and pause frequency).

The interactivity scores (composed of three parts: turn count, turn length, and collaboration rating) involved raters' judgment of students' collaboration. The collaboration rubric did not specifically direct the raters' attention to phonological and fluency performances; instead, it focused on collaborative aspects such as the extent to which partners worked together, responded to each other, and provided feedback. However, it is possible that the pairs' speech rate and the frequency of pauses influenced their evaluation of collaboration, potentially leading to higher collaboration scores for dyads with better fluency. Research has indicated significant correlations between fluency features and raters' scores, even in cases where raters are not deliberately concentrating on fluency constructs (Ghanem, 2021; Ginther et al., 2010). For instance, Ghanem (2021) found that better fluency, as measured by speech rate and number of pauses, correlated with higher collaboration scores in L2 dyadic tasks, even though the raters' collaboration rubric did not encompass assessments of fluency or phonological skills.

As mentioned earlier, interactivity was positively correlated with speech rate which implies that pairs with higher interactivity scores tended to exhibit faster speech. Previous studies examined the interactive context and found that speech rate was higher in the dialogic performance

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compared to monologic performance. Although the current study did not examine the monologic L2 speech, some of the texts in the sample exhibit resemblances to monologic speech where each speaker in the task produced only one turn to accomplish the task, without frequently exchanging turns. Such a pattern of speech (including lengthy turns) is described as an individual presentation style in Alquraishi and Crawford (2021). See for instance Example 22 below in which A and B each produced only one lengthy turn in their entire task performance. Of course, this pair received a low interactivity score of -2.39, and they had a relatively slow speech rate (132 syllables per 60 seconds). It could be suggested that on the opposite ends of the interactivity continuum of L2 performance, low interactivity seems to have an almost monologic presentation of speech while on the other end, high interactivity has a more interactive presentation of speech. Furthermore, one could argue that not only is speech rate faster in the performance of L2 dialogic speech compared to L2 monologic speech, as shown in previous studies (Michel, 2011; Michel et al., 2007; Tavakoli, 2016), but it is also positively linked to the degrees of interactivity within interactive contexts. Although the relationship is weak in the current study, with interactivity explaining 14.52% of the variability in speech rate, the finding also goes in line with Wolf (2008) which found that interactional behaviors (backchanneling and head nods) elicited faster speech rate within dialogic task performances.

Example 22.

1 A: Hi, my name is A, I'm student A. In this topic, uh I have a business plan. I want to open a barber shop in Flagstaff. First /---/ I want to uh, I want to open a barber shop because I like uh hair design. I want open the Chin—China hair design. Because uh in Flagstaff have many Chinese student and uh, um um and uh they they uh in Flagstaff uh… haven't a good hair design. So if y—if you give money for me, I can give you …. uh I can give you beautiful hair design. And uh uh … have a have a …. large uh customer in the Flagstaff.
2 B: Okay I am student B and my name is B. Mm first I think it's uh a hard job to finish finish, mm because uh firstly… you are the only person uh good at hair design so it's hard to find others uh who also good at hair design. Mm uh

secondly, mm the… location of this uh barber shop is difficult uh to find uh, hmm because in Flagstaff there are many many… hair designs including Chinese uh, Arabic uh the America bar—barber shops. Hmm so the location is the most uh difficult part to finish. The secondly… thirdly… uh, the … ri—rising tax of barber shop is uh very high so … uh … so, so this uh barber shop is uh…. difficult to do it uh in Flagstaff. Hmm. Thank you.

(ID: 18376&18380, Task: *Barbershop*, Level 2, Interactivity score= -2.39, speech rate: 132)

Overall, the findings of question two showed that higher levels of L2 pair interactivity are linked to increased fluency as measured by speech rate and the number of silent pauses. Increased fluency in high interactivity pairs could be attributed to the frequent exchange of turns (which grants the partners some time to shape their thoughts) and the use of reduced forms (e.g., pronouns and determiners) which could possibly lower the cognitive load of articulating longer phrases or sentences. The decreased fluency in low interactivity pairs could be caused by pairs' self-reliance to share informational content using long speaking turns; this could increase the mental effort required, leading to more pauses and a slower speech rate. Furthermore, although average pause duration and filled pause showed trends toward increased fluency as the level of interactivity increases, they are not significantly impacted by interactivity levels. Lastly, all of the fluency measures included in the study showed patterns of interactivity being linked with increased fluency except for average run duration; this pattern suggests that this measure (i.e., average run duration) may not be appropriate to measure fluency in the interactive context as it could be affected by frequent short turn-taking in highly interactive speakers.

5.3. Conclusion

The majority of studies on L2 speaking fluency have focused on monologic oral tasks, with fewer examining dialogic tasks. Studies that focused on dialogic tasks investigated the effect of task modality (monologic vs. dialogic) on fluency (e.g., Michel, 2011; Peltonen, 2017; Sato, 2014;

Tavakoli, 2016; Witton-Davies, 2014) or the effect of task variables on fluency in dialogic tasks (Choi et al., 2021; Ghanem, 2021). However, scholars rarely explored the relationship between pairs' interactivity level and their L2 English fluency. The current study explored such a relationship. L2 pairs' interactivity level was measured using a composite score of three variables, including turn count, turn length, and collaboration ratings. Five fluency features were considered to measure pairs' L2 fluency, including speech rate, the number of silent pauses, the number of filled pauses, average run duration, and average pause duration. Relationship tests showed that interactivity was related to faster speech rate and fewer silent pauses, explaining 14.52% and 23.62% of the variance in these two features, respectively. The findings suggested that higher levels of interactivity are related to more fluent L2 speech. The chapter demonstrated these relationships and discussed some of the possible reasons that can explain such associations.

6. Chapter 6- The Effect of Task-related Variables on Pairs' Interactivity

This chapter reports and discusses the results of the third research question of the dissertation which is: To what extent do individual task and task communicative purpose affect L2 pairs' interactivity? In the Methods section of Chapter 3, three variables, including turn count, turn length, and raters' judgment of collaboration, were used to create an interactivity score for each conversation in the CCOT. The composite score of interactivity was used as the dependent variable to understand the effect of task-related variables on interactivity.

The effect of the individual task (24 individual task) on interactivity was investigated to understand the extent to which task has an impact on the pairs' level of interactivity. To explore such an effect, one-way ANOVA was conducted. Also, because the data (interactivity scores across individual tasks) violated the assumptions of the one-way ANOVA (refer to the Results section below for details on the violated assumptions), a non-parametric test (Kruskal-Wallis) was conducted to ensure the presence of a significant difference (based on its P value) between the 24 tasks in terms of their interactivity scores. The two statistical analyses (i.e., one-way ANOVA and Kruskal-Wallis) were used for two reasons: 1) the one-way ANOVA test would provide the effect size (i.e., eta squared) which would inform us about the extent (magnitude) to which individual task affects the outcomes of pairs' interactivity. 2) Kruskal-Wallis was used since the assumptions of the one-way ANOVA test were violated, and Kruskal-Wallis would provide a valid P value of significance.

Because Kruskal-Wallis showed a significant impact of the individual task on L2 pairs' interactivity levels, and the Eta squared of the one-way ANOVA test showed relatively large effect size of the impact of task (as will be reported in the Results section below) on L2 pairs' interactivity, there needs to be a systematic approach to categorize the tasks and to understand how

task variables (by reference to their categorizations) explain the outcomes of pair interactivity. For example, previous studies examined L2 language outcomes by reference to the familiarity of topic (Skehan et al., 2012) and the complexity of prompt information (Robinson, 2001). The entire CCOT corpus has been categorized by Alquraishi (2020) based on their general communicative purposes, including persuasion, selecting from alternatives, and decision making. Alquraishi's classification was adopted in the current study. Furthermore, since the current study revealed a limited effect of this classification (i.e., communicative purpose) on the interactivity level of L2 pairs (as reported later in the Results section), possibly due to the broad classification of the communicative purpose, another classification of the 24 tasks' situational variables was proposed: ± Opinion and ± Information. These two variables were intended to provide a more specific and relevant classification of the tasks that could better explain the outcomes of L2 pair interactivity levels. The following two paragraphs describe the coding of the situational variables, including the communicative purpose, ± Opinion, and ± Information.

As mentioned in the Methods of chapter 3, the communicative purpose of the CCOT tasks was classified by Alquraishi (2020). The phrasing used in the task prompts played an essential role in determining the communicative purpose of each task. For instance, tasks with phrases like "*choose a candidate*" or "*select a store to open*" were categorized as involving selection from various options. Similarly, tasks containing words like "*persuade*" or "*convince*" were recognized as having a persuasion focus. Tasks that require pairs to "*decide*" on a solution to resolve a situation mentioned in the tasks were categorized as decision making. The process of coding the communicative purpose also entailed forming overall judgments about the communication intent of the tasks. Alquraishi (2020) and one of the creators of the CCOT collaborated to discuss categories and reviewed tasks in order to define the general communication purposes of each task.

Consequently, three communicative purposes were identified within the CCOT: 1) making decisions, 2) persuasion, and 3) choosing from multiple alternatives. Refer to Chapter 3, the Methods, for the topics of the tasks and their communicative purpose categorization.

Furthermore, the other two situational variables considered in the categorization of tasks in the current project were the presence or absence of information (± Information) and the allocation of an opinion or a side for each student to argue for (± Opinion). Firstly, the ± Opinion variable involves assigning a specific perspective to each student (e.g., *You are Student A and you support Bill in the election)*. If a task required each student to adopt a specific perspective, the task was categorized as +Opinion. If the task did not require each partner to advocate for a specific point of view, the task was categorized as -Opinion. Secondly, the ± Information variable revolves around whether the task included informational content that students are expected to incorporate in their performance. This variable encompasses sub-categories, as information could be presented in various forms, including 1) text in the form of a list of clauses and/or sentences, 2) text in the form of words and /or phrases, 3) images, and 4) a scientific graph. Tasks that did not require students to incorporate information in their conversation were categorized as -Information, and tasks that required students to incorporate information from the prompt into their conversation was categorized as +Information. If the task was categorized as + Information, further classification of the type of the information was coded as either a list of sentences/clause, words/phrases, images, or scientific graph. Refer to the Methods of Chapter 3 for each task and its categorization using these two variables.

To sum up, Chapter 6 investigates the extent to which task affects L2 pairs' interactivity level. Since the findings (discussed below in the current chapter) showed a relatively large effect of individual task, the study attempted to interpret the results by grouping the 24 tasks according to

their general communicative propose to be able to interpret the findings. However, the communicative purpose had a limited effect on pairs' level of interactivity. The communicative purpose classification appeared to be too broad to capture differences in interactivity. Therefore, the current study proposes another systematic approach that analyzes task variables at a more specific level using ± Information and ± Opinion.

In the following Results section, the effect of individual task on L2 pairs' level of interactivity is reported. After that, the effect of the communicative purpose on pairs' interactivity is reported. Since the communicative purpose showed a limited effect (as will be demonstrated in the Results section), other situational variables (i.e., ± Opinion and ± Information) of tasks were considered to understand how trends of tasks' outcome of pair's interactivity levels are related to these two variables.

6.1. Results

6.1.1. *The Effect of Individual Task on L2 Pairs' Interactivity*

Before reporting the statistical analysis to investigate the effect of individual task on L2 pair's level of interactivity, I first provide descriptive information about the 24 tasks' levels of interactivity.

Based on the descriptive information in Table 6-1 below, the standard deviations of the interactivity scores in most tasks (e.g., *Avoiding an Extreme Sport, Hiring, Investing in Famous Entrepreneurs*) tend to be high (exceptions are found only in *Choosing an Extreme Sport and Presentation on Healthy Food*, where the SD did not exceed the means). This indicates that, within tasks, pairs exhibited varying levels of interactivity, with some pairs displaying lower levels of interactivity and others demonstrating higher levels of interactivity.

Furthermore, based on the descriptive information, tasks' means of interactivity scores can be divided into three categories: the highest, the middle (around the mean of the entire CCOT interactivity mean, M= 0), and the lowest interactivity means. Tasks that received an interactivity mean of 0.25 or higher can be described as having the highest interactivity. Tasks that received an interactivity mean of -0.25 or lower were categorized as having the lowest interactivity. Tasks with interactivity scores between -0.25 and 0.25 (middle) were considered to be around the mean of the standardized CCOT composite interactivity scores (interactivity mean of the entire CCOT=0).

Six tasks had the highest interactivity means including *Choosing an Extreme Sport, Presentation on Healthy Food, Matt Test Scores, Selecting a Store to Open, Advertisement, and Workplace Monitoring*, with interactivity mean scores ranging from 0.25 to 0.79. Additionally, seven tasks had the lowest means including *Awarding a Scholarship, Spanking, Crime Statistics, Barbershops, Investing in Science Funding,* and *Choosing a Patient*, with interactivity mean scores ranging from -0.24 to -0.86. Positive interactivity mean scores indicate a higher tendency for pairs to exhibit highly interactive behaviors within these tasks, while negative interactivity mean scores suggest lower interactivity levels in their respective tasks.

The remaining tasks are positioned almost at the mean of the interactivity scores of the whole CCOT corpus (M=0) (see Figure 5-6 below). The tasks with mean interactivity scores that are at the mean of the CCOT interactivity scores (middle/ medium interactivity means) included *Cancer advice* (M=0.065), *Hiring* (M=0.0252), *Voluntary Simplicity* (M= 0.021), *Avoiding Extreme Sports* (M=.003), *Investing in Famous Entrepreneur* (M=-0.006), *Presentation on Immigration* (M=-0.0225), *Music and Vocabulary* (M=-0.0259), *Sleep Clinic* (M= 0.1675), *Chen problem* (0.1473), *Crime Economy* (-0.1223), and *Election* (-0.1615). These tasks do not show outstanding deviations in their interactivity mean scores form the CCOT mean interactivity score, where the

pairs generally do not tend to exhibit very high or very low interactive behaviors (see Table 6-1

for the descriptive information of each individual task and its interactivity outcome).

Figure 6-1

Interactivity mean scores of tasks across the CCOT corpus
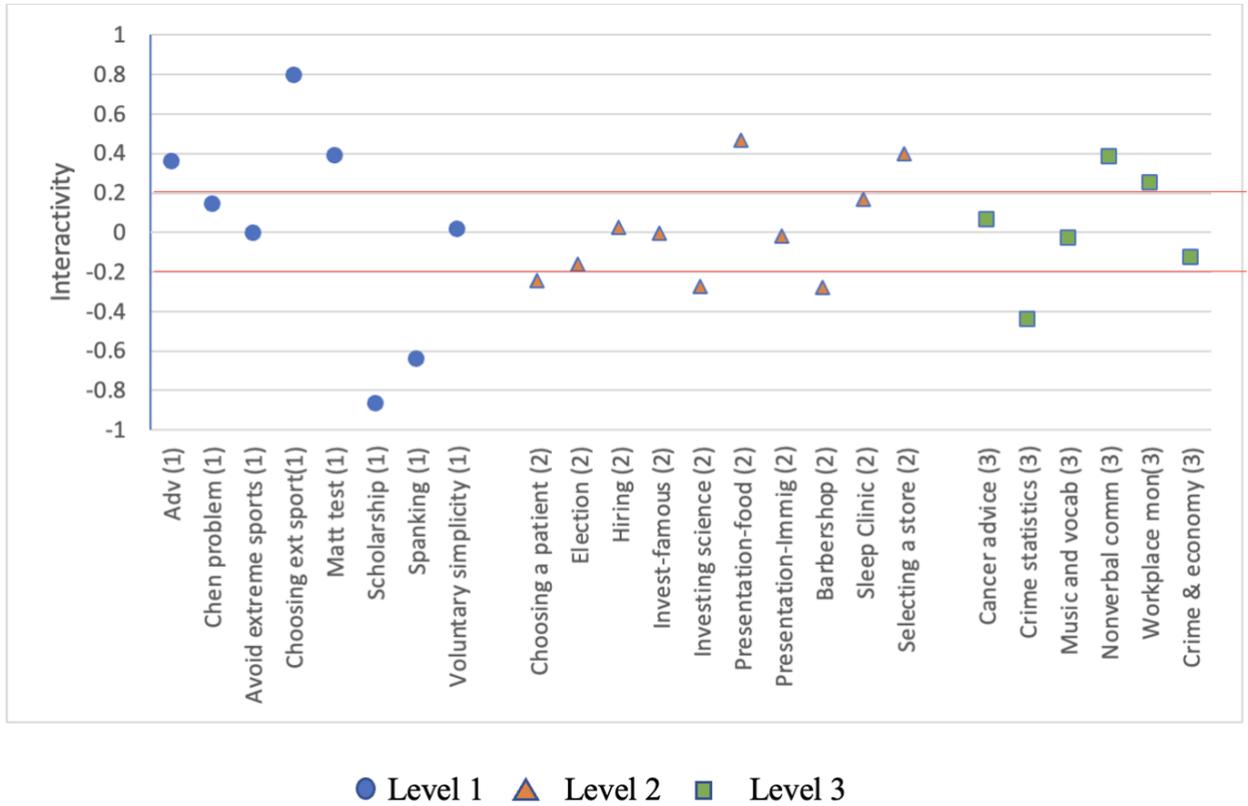
Note. Data points above the upper red line are tasks with the highest interactivity means and

data below the lower red line are tasks with the lowest interactivity means.

Table 6-1

Descriptive information of the L2 pair interactivity mean scores across the tasks

Task	Level	N	Mean	SD	Min	Max	Med	IQR

Choosing an Extreme Sport	1	17	0.80	0.56	-0.35	2.29	0.76	0.60
Presentation on Healthy Food	2	27	0.46	0.44	-0.71	1.10	0.56	0.62
Matt Test Score	1	18	0.40	0.51	-0.91	1.35	0.46	0.59
Selecting a Store to Open	2	44	0.40	0.66	-0.61	2.07	0.30	0.80
Nonverbal Communication	3	18	0.39	0.73	-1.55	1.71	0.46	0.88
Advertisement	1	73	0.36	0.73	-1.48	1.83	0.51	0.87
Workplace Monitoring	3	15	0.26	0.44	-0.93	0.68	0.38	0.39
Sleep Clinic	2	21	0.17	1.04	-2.13	2.19	-0.06	1.36
Chen Problem	1	54	0.15	0.52	-0.99	1.24	0.19	0.49
Cancer Advice	3	14	0.07	0.38	-0.39	1.01	-0.06	0.47
Hiring	2	16	0.03	0.81	-1.77	1.60	0.00	0.76
Voluntary Simplicity	1	78	0.02	0.77	-2.38	1.51	0.18	0.85
Avoid an Extreme Sports	1	16	0.00	0.89	-2.90	0.96	0.05	0.83
Investing in Famous Entrepreneur	2	21	-0.01	0.41	-0.76	0.95	0.00	0.61
Presentation on Immigration	2	16	-0.02	0.63	-1.00	1.49	-0.09	0.54
Music and Vocabulary	3	13	-0.03	0.33	-0.62	0.51	0.02	0.47
Crime and Economy	3	13	-0.12	0.69	-1.06	1.42	-0.13	0.96
Election	2	37	-0.16	0.62	-2.47	1.00	-0.08	0.76
Choosing a Patient	2	104	-0.25	0.89	-4.25	1.19	-0.16	0.95
Investing in Science Funding	2	37	-0.28	0.66	-2.05	0.57	-0.07	1.01
Barbershop	2	46	-0.28	0.84	-2.39	1.23	-0.10	1.09
Crime Statistics	3	16	-0.44	0.68	-1.84	0.84	-0.38	0.76
Spanking	1	39	-0.64	0.77	-2.48	1.09	-0.54	1.07
Scholarship	1	16	-0.86	1.07	-3.15	0.88	-0.57	1.19
Total		769						

To investigate the effect of individual task on pairs' level of interactivity, Kruskal-Wallis was conducted. The individual task was treated as the independent variable and pairs' level of interactivity was treated as the dependent variable. The Kruskal-Wallis test revealed a statistically significant difference between the mean ranks of the 24 groups (individual tasks), χ^2 (23) = 149.965, p = 0.000.

Furthermore, although the assumptions of the one-way ANOVA test were violated, an ANOVA test was conducted to assess the magnitude of the difference between the 24 tasks (effect size) using its' Eta squared outcome. The one-way ANOVA test also indicated a statistically significant difference in interactivity scores between the 24 groups (tasks) ($F(23, 745) = 7.095$, $p < .001$). The effect size was large ($\eta^2 = .18$), with the task variable explaining 18% of the variance in L2 pairs' interactivity scores.

6.1.2. The Effect of Task General Communicative Purpose on Pairs' Interactivity

Since the individual task showed a significant impact on pairs' interactivity levels, the communicative purpose of the tasks was investigated to be able to systematically explain how a specific task variable (here, the general communicative purpose) impact pairs' interactivity.

To investigate the effect of the communicative purpose on pairs' interactivity, a one-way ANOVA test was conducted. Table 6-2 below presents the descriptive information of the data of each category of the communicative purpose including selecting from alternative, decision making, and persuasion. The one-way ANOVA revealed that there was a statistically significant difference in interactivity scores between the three groups ($F(2, 763) = 11.98$, $p < .001$). However, the effect size was very small ($\eta 2 = .030$), which means that the communicative purpose variable explained only 3% of the variance in the interactivity scores. A general pattern that was observed is that Persuasion tasks resulted in higher interactivity scores, followed by Decision-making then Selecting from Alternatives (lower interactivity); however, since the effect size was very small, pairwise comparisons were not reported.

Table 6-2

Descriptive information of interactivity scores across the three communicative purposes

	N	Mean	SD	Min	Max	Skewness	Kurtosis
Persuasion	117	.29	.63	-1.48	1.83	-.34	.29

Decision	263	.04	.72	-2.48	1.71	-84	1.19
Selecting	386	-.09	.80	-3.15	2.29	-.42	1.47
Total	766					

Note. The interactivity score is a composite of turn length, turn count, and raters' judgments of collaboration, all of which were standardized and averaged. Refer to the Methods section for details. Three texts were removed to meet the assumptions of ANOVA

6.1.3. *The Relationship between Trends of Interactivity Mean Scores across Tasks and the Tasks' Variables of ± Opinion and ± Information*

Since the categorization of the communicative purpose had a limited effect on Pair's interactivity, two other task-related variables (i.e., ± Opinion and ± Information) were considered to understand how they were related to the tasks' outcomes of pairs interactivity. To do so, the relationship between tasks' interactivity means and the two variables (± Opinion and ± Information) were examined using patterns of descriptive information. The following paragraph summarizes the patterns across the three categories (i.e., tasks of the highest interactivity, tasks of medium/middle interactivity, and the tasks of the lowest interactivity) and their possible relationship to patterns of ± Opinion and ± Information.

Table 6-3 below presents the situational information (i.e., ± Opinion and ± Information) for the tasks that received the highest interactivity scores, while Table 6-4 shows the situational information for the tasks with the lowest interactivity scores. As evident in Table 6-3, none of the highest interactivity tasks provided information (+Information) except for two tasks (*Advertisement and Choosing Extreme Sports*), and the type of information they provided included simple images and words/phrases. Additionally, most of the highest interactivity tasks did not require students to adopt a specific opinion, except for one task (i.e., *Workplace Monitoring*) (see Table 6-3). On the other hand, three of the tasks that received the lowest interactivity scores required students to adopt a specific perspective (+Opinion) (see Table 6- 4). Furthermore, all of

the lowest interactivity tasks provided information (+Information) to the students, except for

Spanking. The information provided in the prompts consisted of lists of sentences/clauses, except

for one task, which presented information in the form of a scientific graph. For the tasks that did

not deviate significantly from the mean of the CCOT interactivity score (tasks of medium/middle

interactivity), there is no clear pattern related to ±Information and ±Opinion (see Table 6-5).

Table 6-3

Situational variables (± Information, ± Opinion) of the tasks that received the highest interactivity scores

Topic	+Opinion	+Information	List clauses/sentence	Words/phrases	Images	Scientific graph
Advertisement	-	+	-	-	+	-
Matt Test Score	-	-	-	-	-	-
Selecting a Store to Open	-	-	-	-	-	-
Workplace Monitoring	+	-	-	-	-	-
Presentation on Healthy Food	-	-	-	-	-	-
Choosing an Extreme Sport	-	+	-	+	-	-
Non-verbal Communication	-	-	-	-	-	-

Table 6-4

Situational variables (± Information, ± Opinion) of the tasks that received the lowest interactivity scores

Topic	+Opinion	+Information	List clauses/sentence	Words/phrases	Images	Scientific graph
Scholarship	-	+	+	-	-	-
Spanking	+	-	-	-	-	-
Crime Statistics	-	+	-	-	-	+
Barbershop	+	+	+	-	-	-
Investing in Science Funding	+	+	+	-	-	-
Choosing Patient	-	+	+	-	-	-

Table 6-5

Situational variables (± Information, ± Opinion) of the tasks at the mean of the CCOT's interactivity scores

Topic	+Opinion	+Information	List clauses/sentence	Words/phrases	Images	Scientific graph
Cancer Advice	+	-	-	-	-	-
Hiring	+	+	+	-	-	-
Voluntary Simplicity	+	-	-	-	-	-
Avoid an Extreme Sport	+	+	-	-	+	-
Investing in a Famous Entrepreneur	+	+	+	-	-	-
Presentation on Immigration	-	+	+	-	-	-
Music and Vocabulary	-	-	-	-	-	-
Sleep clinic	+	+	+			
Chen problem	-	-	-	-	-	-
Crime and Economy	-	+	-	-	-	+

Lastly, regarding the proficiency levels and their relationship to tasks' interactivity means, the tasks that exhibited the highest interactivity (above the CCOT interactivity mean) and the tasks that exhibited the lowest interactivity (below the CCOT interactivity mean) included all levels of English proficiency, showing no discernible patterns that associate high or low interactivity with specific English proficiency levels. However, level 1 tasks exhibited more scattered data points (wider range) of interactivity means, suggesting that the interactivity of beginner dyads could be more influenced by the task, compared to levels 2 and 3 which showed a narrower range of interactivity means across the tasks (see Figure 6-1 above).

6.2. Discussion

The third research question of the dissertation explores the effect of individual task on pairs' interactivity level. The results demonstrated a relatively large effect size, explaining 18% of the

variance in interactivity. To understand how tasks can affect interactivity, situational variables of tasks (Crawford & Zhang, 2021) were considered. The first situational variable was the general communicative purpose of the task. The findings showed that the categorization of the communicative purpose showed negligible differences in the production of interactivity levels across the three groups (i.e., Persuasion, Decision-making, and Selecting from Alternatives). The results confirm Alquraishi's (2020) argument that the categorization is too broad to capture differences in interactivity levels, especially that some of these tasks overlap in their specific communicative purposes (the specific communicative purposes are briefly discussed in the Methods chapter). Moreover, the CCOT corpus included a total of 24 tasks, and it is possible that tasks need to be investigated at a fine-grained level to understand the effect of task-related variables on interactivity instead of simply classifying them into three general categories.

Other systematic classifications of task variables were considered which are ± Opinion and ± Information. Further categorization of the ± information included the type of information provided in the prompt, namely list of clauses/sentences, words/phrases, pictures, and scientific graphs. Based on the descriptive information of the variables (tasks' situational variables- ± Opinion and ± Information- and the interactivity means of tasks), tasks that generated the highest interactivity levels generally 1) did not require pairs to adopt a specific perspective (-Opinion) and 2) did not provide extensive information in the prompt (only simple pictures and words). On the other hand, tasks that generated the lowest levels of interactivity mostly require each partner to adopt a specific perspective and/or provide high loads of information (i.e., lists of clauses and sentences, scientific graphs). In the following two sections, detailed discussions of tasks with the lowest interactivity and tasks with the highest interactivity are provided, demonstrating their potential relationships with the situational variables.

6.2.1. *Tasks Generating the Lowest Interactivity*

Of the six tasks that generated the lowest interactivity among pairs, five tasks required dyads to consider the information provided in the prompt. These tasks included *Scholarship, Barbershop, Investing in Science Funding, Choosing a Patient, and Crime Statistics*. Four of these tasks provided information in the form of a list (sentences and clauses). For example, Scholarship provides information related to two people (i.e., Tom and Sarah) the L2 students are expected to discuss. Tom and Sarah received a scholarship in which they can visit a different country for one week. They each have different expectations for the trip, and the L2 pair is expected to think of two places that best suit Tom's and Sarah's expectations. The prompt presents the following list for each student to consider as they discuss Tom and Sara's expectations:

	List of clauses/sentences
Student A: Tom	-Very interested in popular tourist attractions -Wants to buy many souvenirs -Wants to meet local people
Student B: Sarah:	-Wants to learn about new cultures -Wants to visit controversial tourist attractions -Wants to visit a well-preserved areas

Note. See Appendix A for the complete task prompt. Interactivity mean score of the task= -0.86

The prompt does not require the pair to adopt a specific opinion, allowing them to choose the places that would best suit Tom and Sarah. However, it provides a list of information that students should consider as they discuss the situation. The process of interacting while considering this list of information might have caused students to become more focused on the content and less attentive to the interaction, potentially resulting in lower interactivity.

Similarly, intermediate students performing *Investing in Science Funding* were provided with lists where they were required to discuss the pros and cons of two scientific projects:

Student A: Manned Mission to Mars	
Positive	Negative
People will be able to conduct new experiments (not previously planned for) based on what they discover on Mars. The astronauts can monitor how space affects living organisms. (Think of a new, original positive reason)_____	Space travel is dangerous It's hard to plan for everything that the astronauts might need on their mission (Think of a new, original negative reason)_____

Student B: Gigantic Space Telescope	
Positive	Negative
The telescope can be remotely operated from Earth 24 hours a day. It is 300 times more powerful than any space telescope ever made before. Think of a new, original positive reason)_____	Because of its size, the telescope must be fully assembled in space, which requires several trips by astronauts. The telescope could easily be damaged by comets, meteorites, or space junk. Think of a new, original negative reason)_____ _____

Note. See appendix A for the complete task prompt of *Investing in Science Funding task.* Mean interactivity score of the task= -0.28

Conversations performed over this task received relatively low interactivity scores that ranged from -2.05 to 0.57 which is considered at the lower part of the interactivity continuum of the CCOT corpus, where conversations of other tasks reached as high as 2.29. Low interactivity is associated with informational content (features), as demonstrated in Chapter 4; it is possible that the lists provided to students (as in the case of *Investing in Science Funding*), led them to prioritize conveying the informational content from the prompt during task performance, rather than engaging extensively in interaction with each other.

Another form in which one of the lowest interactivity tasks provided information was by using scientific graphs. Pairs in this task (*Crime Statistics*) received a low interactivity mean (M=-0.43), and their interactivity level ranged from -1.84 to .84, which falls within the lower part of the interactivity continuum of the CCOT corpus. The prompt requires partners A and B to explain the

statistical reports to each other and to discuss possible reasons for the types and the rates of crime

in the following graphs:

Types of crimes in 2004
Student A
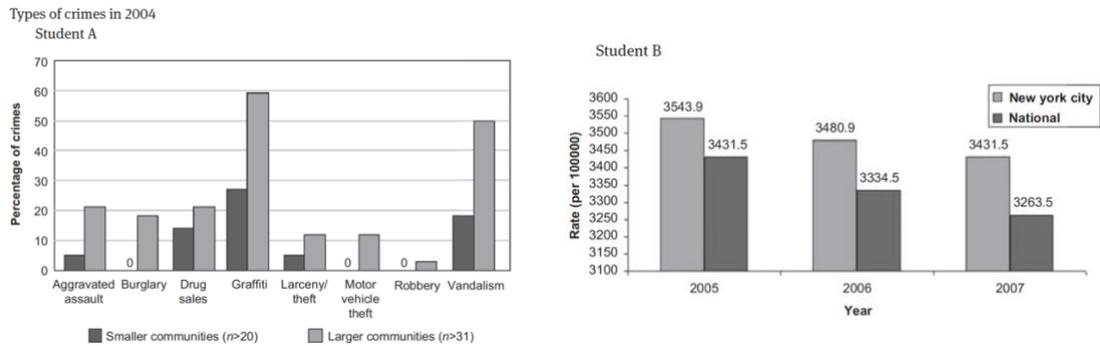
Student B

The scientific graphs contain complex data, labels, and multiple data points. Analyzing and

interpreting such graphs can be cognitively demanding. Students may be concerned with

processing the graph and formulating their interpretations to convey their thoughts to their partner

which might have caused a reduction in interactivity in their conversations. In fact, another task

(i.e., *Crime and Economy*) provided information in the form of a scientific graph and showed a

trend of low interactivity (See Figure 5-6 in the Results section). Although *Crime and Economy*

was not considered as one of the lowest interactivity tasks, its mean is deviated (from the CCOT

mean interactivity score) towards lower interactivity. The *Crime and Economy* task received a

mean interactivity score of -.12 (below the CCOT interactivity mean), and two-thirds (n=9 pairs)

of the conversations received interactivity scores below the mean of the CCOT (CCOT mean=0).

Therefore, the study suggests that using scientific graphs could potentially result in lower

interactivity among peers.

The other situational variable that could be related to outcomes of the lowest interactivity is

+ Opinion. Three tasks (i.e., *Spanking, Barbershop*, and *Investing in Science Funding*) required

each partner to adopt a perspective:

Task Name	+Opinion
Barbershop	You must try to convince your partner that Cutting Edge Barber Shop is a good business to invest in
Spanking	You believe that parents should never spank their children. You think it should be illegal to spank children
Investing in Science Funding	You think the money would best be spent by creating a manned mission to Mars. You want to convince your partner that the most knowledge can be gained by sending people to another planet, but it is also your duty to inform your partner of all the positive and negative factors.

Note. See appendix A for the complete task prompts

It is possible that adopting a specific perspective requires learners to think critically and construct coherent arguments from that viewpoint. Thinking from a different perspective might add a cognitive load which in turn might reduce the pairs' level of interactivity. Also, learners who are prompted to take a stance (e.g., *you believe that parents should never spank their children*), may prioritize presenting arguments and evidence to support their viewpoint over engaging in interactive exchanges as demonstrated in A's turn (performing *Spanking*):

> 1 A: Uh I believe parents should never spank the children. They are three four st-uh-three important things to support /---/-to support my idea. First of all I thinks sp-uh-spank will make children violent you know when you treat someone uh always you will treat another people like this so when you parents always spanks their children maybe children will in the school be more violent and uh like this t/---/ to their j-uh-m-ju-uh-classmate. And second one I think spank will make children be revenge uh you know when you m-spank your children and your children will to do uh will hit you or pa-their parents and they think that is very bad and they always have hold on this thing his mind and uh maybe some-sometimes one day they will be a criminal. And uh last one I believe uh when you-uh when parents always spank their children uh their children uh /---/ uh will uh th-their children will very scared their parents so they won't have not communication from each other. That is very bad things for children grow up.

> (ID: 21477&21502, Task: *Spanking*, Level 1, Interactivity score= -.810)

However, it is important to note that the tasks of +Opinion (i.e., *Barbershop and Investing in Science Funding*) also provided lists of sentences and clauses for students to consider in the conversation, except for *Spanking*. Therefore, one cannot draw a firm conclusion that +Opinion is linked to low interactivity in performance; hence, further investigation is warranted.

6.2.2. Tasks Generating the Highest Interactivity

Seven tasks exhibited the highest level of interactivity compared to the rest of the tasks in the CCOT. Unlike the tasks with the lowest interactivity, the tasks do not require students to adopt a perspective, except for *Workplace Monitoring*. Also, none of the tasks provide a list of clauses/sentences or scientific graphs to the students. The only types of information provided were in the form of pictures or words/phrases. One of the tasks that did not require pairs to adopt an opinion (-Opinion) or provide information to be utilized in the conversation (- information) is *Presentation on Healthy Food*:

Task (Given to Both A and B)
You and your partner are going to discuss the topic of a new presentation called:
Our Favorite Healthy Food
In your discussion with your partner you should:
- State what food you think should be in the presentation and why
- Listen and respond to your partner's healthy food ideas
- Make a decision together about what food you will talk about in your presentation
You have 2 minutes to think on your own and, then, 2 minutes and 30 seconds to speak with your partner

Note. This is the complete prompt of the *Presentation on Healthy Food* task. Mean interactivity score of the task=0.46

Here, the information provided is only background information with directions for students to perform the tasks. No list of information for students to consider/incorporate into their performance is provided, and partners are not required to adopt a perspective (-Opinion). This is the opposite of *Investing in Science Funding* (low interactivity task) above where each partner is expected to utilize a list (+Information in list) and adopt a perspective (+Opinion). The absence of

information could have increased the likelihood for students to interact with each other since they were not preoccupied with prompt content to incorporate into their conversations. In other words, it is possible that -Information (in lists) leaves more room for interactive exchanges.

The two of the highest interactivity tasks that included information (+information) in the prompt were in the form of either words/phrases (*Choosing an Extreme Sport*) or pictures (*Advertisement*):

Task	Advertisement	Choosing an Extreme Sport
Background information and directions	Look at the following products or ads. With you partner, choose one of the ads or products to create a radio advertisement. You will have X minutes to discuss and plan your advertisement with your partner. Your commercial must be X minutes. Use the blank space on the next page to plan your radio advertisement. Your radio commercial must include the following elements: clear identification of your product the effective use of a positive or negative appeal the effective use of one of the "Attention Grabbers" discussed in Unit 1 4) equal speaking parts for you and your partner	Step 1: Choose one extreme sport you want to do this summer Step 2: You have one minute to prepare the reasons for your choice. Step 3: Then you have two minutes to discuss and plan with your partner who has a different list. Step 4: You and your partner have two minutes to record the following: Introduce your own choice. Discuss reasons for your choice. Agree on one extreme sport.
Form of information	Pictures	Words/phrases
Information	1) Picture of a sports drink. 2) Picture of a person smoking, 3) Picture of a razor 4) Picture of a camera	Skydiving, ice climbing, cave diving, river rafting, ultramarathon

Note. The pictures were not provided in the task prompt of the corpus. These two tasks are the complete prompts.

As can be seen in the task prompts above, students were not provided with a list of sentences or clauses to be considered in their conversation. Rather, they are only expected to discuss one item (a product in *Advertisement* and a type of sport in *Choosing an Extreme Sport*). These types

of information may not impose a high load of cognitive processing. For example, unlike *Crime Statistics* (discussed above) where scientific graphs may require high cognitive demand to interpret and convey information, pictures are simpler and more intuitive, potentially allowing for conversations of high interactivity.

Workplace Monitoring is the only high interactivity task that requires students to adopt a perspective (+Opinion) (i.e., *You support monitoring in the workplace. You want to use video cameras, phone taps, and email monitoring in your company*). Although tasks that required students to adopt an opinion showed a pattern of producing low interactivity (discussed earlier), *Workplace Monitoring* is among the tasks that generated high interactivity. As recommended above, this situational variable (± Opinion) does not show enough evidence that it produces low interactivity, and more investigation is needed to draw such a conclusion.

Lastly, regarding the distribution of the interactivity levels across the tasks of the different English proficiency groups (see Figure 5-6 above for the pattern), it seems that degrees of interactivity are not related to proficiency levels as pairs of all levels (beginner, intermediate, and advanced) exhibited both very low and very high interactivity. This suggests that individuals at the same proficiency level may have varying degrees of interactivity. This argument is also supported by the high standard deviation (SD) of most of the tasks. For example, *Avoid an Extreme Sports* (beginners) *Choosing a Patient* (intermediate), and *Crime and Economy* (advanced) exhibited high SDs, suggesting that some pairs within the same task exhibited high interactivity while others exhibited very low interactivity. This observation also warrants further investigations into individual differences among students that may influence interactivity within a single task.

Furthermore, levels 2 and 3 showed a similar range of interactivity degrees across the tasks (see Figure 6-1 above), however, level 1 exhibited more scattered data points (a wider range across

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the interactivity continuum) of interactivity means across the tasks, suggesting that beginners'
interactivity might be more susceptible to task compared to the advanced L2 pairs (levels 2 and 3).

6.3. Conclusion

This chapter reports and discusses the effect of task on dyads' interactivity levels. It
highlights the significant impact of individual task on the L2 pairs' interactivity level, suggesting
that some tasks produced high levels of interactivity while other tasks produced low levels of
interactivity. To understand how the task could affect L2 pairs interactivity, situational variables
that could systematically explain the outcome of pairs' interactivity levels were considered
including the general communicative purpose of the task as well as ± Opinion and ± Information.
The findings indicated a small effect of the communicative purpose of the tasks, suggesting that
such categorization might be too broad to capture differences in interactivity outcomes.

Furthermore, the two situational variables which included more detailed classifications (i.e.,
± Opinion and ± Information) were examined. This included exploring the relationship between
the mean interactivity scores of the tasks and the two situational variables using descriptive
information. General trends showed that the tasks that generated the lowest interactivity levels
provided relatively heavy loads of information using lists of sentences/clauses or scientific graphs
which students were required to incorporate into their performances. On the other hand, the tasks
that generated the highest interactivity levels did not require students to consider a significant
amount of informational content. Rather, they provided only simple pictures and words and let the
partners use their own resources of information to perform the task. This suggests that requiring
students to utilize information from the prompt in their conversations could direct students'
attention to presenting the content rather than interacting with one another to perform the task.
Furthermore, considering the tasks of the highest and the lowest interactivity, the situational

variable + Opinion appears mostly in tasks that exhibited the lowest interactivity levels. However,

it did not provide a clear pattern that shows its association with low interactivity.

7. Chapter 7- Conclusion

This chapter begins with an overview of the key findings for the three aims of the study. Following that, the major insights obtained from each of these three aims within the current project are reviewed. Lastly, the chapter discusses the implications of the study, highlights its limitations, and suggests directions for future research.

7.1. Overview of the Study

The project aimed to investigate L2 peer interactivity in the context of ESL speaking assessment, where students interact to achieve task requirements. Specifically, it explored the relationship between the levels of interactivity among L2 pairs and their use of lexico-grammatical features, as well as their L2 fluency. Additionally, it attempted to understand the extent to which L2 pairs' interactivity level was influenced by individual task and task-related variables. The project measured the degree of students' interactivity using two objective variables (turn count and turn length) and one subjective variable (ratings of student collaboration). Including a subjective rating was considered to control for the content produced in the conversation and to ensures meaningful interaction (by reference to the task requirements) among peers.

The highlight of the current project is that nominal structures, including all instances of nouns, common nouns, and the length of the word, tended to decrease with interactivity, while response forms (e.g., *yes, OK*), discourse particles, *wh-* questions, and second person pronouns tended to increase with interactivity. Furthermore, interactivity has been shown to be associated with more fluent L2 talk, with students tending to produce faster speech rates, fewer silent pauses, and fewer hesitators (filled pauses) as their interactivity increases.

For the effect of task variables on pairs' level of interactivity, the project showed that pairs' interactivity was largely affected by the individual task. It further suggests that the type of

information (e.g., images, list of sentences) provided to students to consider them in their performances could potentially be one of the important factors that affect L2 pair interactivity level.

7.2. Interactivity and Linguistic Features

The current study pointed out a number of features that decreased with interactivity. Some of these features shared general characteristics including informational features, narrative features, and a disfluency feature (hesitator *uh*). However, the outstanding features that showed stronger associations with interactivity were informational features. Specifically, pairs that exhibited decreased interactivity tended to use all nouns, common nouns, and longer word lengths. Pairs with low interactivity tended to present the information provided to them in the task prompt which included many instances of nouns. They also showed a tendency to adopt a presentational style of interaction where they rely on themselves to present the information rather than interacting with their partner to accomplish the task. The increased use of nouns in conversation of pairs with low interactivity could explain the tendency for pairs to produce relatively increased word lengths.

Additionally, the hesitator *uh* is among the features that relatively showed a stronger association (compared to the other linguistic features) with interactivity. Hesitator *uh* tended to decrease with interactivity. The increased use of the hesitator *uh* in low interactivity pairs could potentially stem from their need to formulate their thoughts and next contributions. Unlike pairs with higher interactivity levels, pairs with low interactivity do not have the luxury of obtaining time between their turns to think about their next moves while their partner is holding the floor. Thus, they could have needed additional time to think, which is possibly granted by using hesitators.

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Furthermore, the study identified several features that tended to increase with interactivity. Among these features, four exhibited stronger associations when compared to other features with significant relationships. These included discourse particles, response forms, *wh*-questions, and second person pronouns. High-interactivity pairs used response forms during their interactions to support their partners' statements and to signal responses to previously stated questions, while discourse particles served as facilitators of interaction. Notably, discourse particles and response forms tended to occur in relatively short turns, which explains their association with higher interactivity.

Additionally, *wh-* questions were employed in high interactivity conversations to elicit task-related contributions and were used for polite exchanges of typical greetings. Generally, *wh-*questions encourage a dynamic atmosphere of interactivity where students exchange turns of asking and responding. High interactivity pairs used second person pronouns in conjunction with *wh*-questions to engage their partners in the conversation and, they also used it to provide comments and recommendations in relatively short turns.

One of the interesting observations of the study is that the absence of some interactional features (e.g., *wh* -questions, second person pronouns) in a conversation does not necessarily mean that the conversation is not of high interactivity as other interactional features could be utilized (e.g., response forms, discourse particles). This suggests the potential existence of multiple profiles for high-interactivity conversations.

7.3. Interactivity and Fluency

The present study showed that interactivity was associated with higher fluency. Specifically, when L2 pairs' level of interactivity increased, their speech rate tended to increase, and the number of silent pauses produced by pairs tended to decrease. The study suggested that the faster speech

rate and the reduced number of pauses in high interactivity pairs could be attributed to the frequent turn-taking between partners. Specifically, pairs may not need to pause frequently since they were given the opportunity to shape their thoughts as their partner holds the floor. The additional time granted by the frequent turn exchange could also contribute to the pairs' faster speech rate as students naturally pause less frequently when their speech rate increases.

Conversely, the slower speech rate and the increased number of pauses in low interactivity conversations could be attributed to the infrequent turn-taking between interlocutors where partners produced long turns. Consequently, they might have needed time to cognitively form their speech which is possibly granted by frequent pauses and a relatively slow speech rate. Another fluency feature (filled pause) showed trends toward increased fluency as the level of interactivity increases; this trend is supported by the findings of the first research question, which showed a significant association between reduced hesitations (filled pauses) and interactivity. Finally, the study suggests that employing average run duration as a metric for assessing fluency within the interactive context may present limitations. Average run duration does not suit the nature of the interactive context where students are constantly being interrupted, giving away the floor, or backchanneling. Therefore, using average run duration (without accounting for the affective turn taking) may yield misleading results, potentially portraying pairs with high interactivity as less fluent.

7.4. The Effect of Task Related Variables on Pair Interactivity

The analysis of the present study showed that L2 pairs' level of interactivity was largely affected by the individual task. Since the corpus included 24 individual task, the tasks were further investigated based on a systematic categorization to be able to understand how certain task variables could possibly affect interactivity. Therefore, the study attempted to examine the effect

of the classification of the CCOT tasks based on their general communicative purposes. However, this categorization appeared to be too broad to capture differences in interactivity. The study then explored a more detailed situational variable of tasks (i.e., ± Information) that could systematically explain its effect on interactivity. The findings suggested that, based on descriptive information, the situational variable ± Information might have an effect on interactivity. The tasks that produced the highest L2 pair interactivity level mostly did not provide the pairs with information to be incorporated in their performance except for two tasks that provided information in simple images and words/phrases. On the other hand, the tasks that produced the lowest L2 pair interactivity level mostly provided students with a relatively heavier load of information that students are expected to consider on their performances. The type of information these tasks provided was in the form of a list of sentences/clauses and scientific graphs. The study suggests that providing information in the form of a list of clauses/sentences could have made students prioritize conveying the content from the prompt during task performance, rather than engaging extensively in interaction with each other. Furthermore, scientific graphs contain complex information that is cognitively demanding to analyze and interpret which could have potentially led dyads to be concerned with interpreting and presenting the scientific graph potentially leading to relatively lower degrees of interactivity. However, the findings were based on trends of descriptive information, and further investigation is warranted to confirm such findings.

7.5. Implications

Scholars highlighted the relevance of understanding the nature of interaction in the context of peer oral assessment (Galaczi, 2008; McNamara, 1997). Describing discourse in the field of corpus linguistics has been insightful and awareness-raising in terms of understanding how language is actually used versus how it is perceived, taught, or assessed (e.g., Biber & Reppen,

2002; Staples et al., 2017). Thus, the present project used quantitative methods that enlighten our knowledge of the linguistic features salient to the interactive performance (*wh*-questions, second person pronouns, response forms, discourse particles) versus less interactive ones (e.g., nominal structures). These findings bring insights into the work of language assessors and scholars interested in the interactive context.

Furthermore, the insights from the current study extend to the description of L2 fluency features in the interactive discourse. It demonstrates that pair interactivity is associated with faster speech rate and fewer pauses. Additionally, it informs scholars specifically interested in the measurement of L2 fluency in the interactive context. It highlights the potential limitation of using average run duration as a measure of fluency (a metric commonly used in the literature) in the context of interactive speech. It suggests that it is important to consider the discourse context in order to select an appropriate measure of fluency.

Finally, the project provides insights for scholars and educators interested in Task-Based Language Teaching (TBLT). For example, it highlights specific elements that task design developers and scholars studying peer interactivity should consider. It specifically draws attention to the potential impact of the type of information presented in the task prompt for students to consider in their performance (e.g., scientific graphs, lists of sentences, images) on the outcomes of interactivity.

7.6. Limitations and Future Directions

The present study has its limitations. This section addresses these constraints and provides some suggestions for future research. The first aim of the project sought to understand the relationship between linguistic features and interactivity. The linguistic features encompassed a wide range of features including informational and interactional features. However, there are some

interactional linguistic features that were not included such as attention forms (e.g., *hey!)*, response elicitors (e.g., see?). More specifically, some features are worth investigating as they seemed to be present in conversations of high interactivity in the CCOT corpus which include yes/no questions and sentence incompletion where the hearer completes the utterance of the speaker.

Furthermore, the second aim of the project sought to understand the relationship between fluency features and interactivity. Future research could investigate how such relationships could be affected by proficiency level. Also, the process of coding the fluency of the speech files involved separating speaker A and speaker B; however, it was decided to combine the fluency outcomes of both speakers for the analysis since they shared one interactivity score. Future studies could explore ways that separate speakers to be able to understand the interactivity of each individual speaker and its relationship with their fluency.

The findings of the third aim of the project suggest the potential effect of task and a task situational variable (i.e., +/- Information) on interactivity. However, the study did not control for language proficiency, task topic, and task design. Future studies should control for such variables and should explore more ways to systematically investigate the effect of task prompt on interactivity. Additionally, the current study suggests that it might be worthwhile to examine the effect of the type of information students are required to consider in their performance (e.g., no information, lists of sentences, scientific graphs) on the pairs' levels of interactivity.

Finally, the study developed a way to measure pair's interactivity using three variables (i.e., turn count per 60 seconds, turn length, and collaboration scores); however, it has several limitations. The interpretation of the interactivity score scale is only applicable to the CCOT data, and it cannot be extended to another data set. Also, the scale has negative values (e.g., -0.17), and the scores need to be recentered (so it does not lead to the misinterpretation of the scores) as there

is no meaningful concept of interactivity having a negative value. Furthermore, since the measure is exploratory, the extent to which each of the three variables should be weighed has not been examined, and each variable contributed equally to the interactivity score. More research is required to determine whether reweighing the variable is necessary. Additionally, the pair interactivity scores were composed of two objective measures and one subjective measure where students' collaborations were evaluated by raters. Future studies could develop a rubric that specifically addresses students' interactional behavior over the task to ensure that the evaluation considers all possible behaviors of interactivity, not only collaborative behaviors.

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Task prompts and rubrics of the CCOT

For each task, the following information is provided:
1. Task name (and number)
2. Proficiency level of students
3. The number of different task versions
4. Administration time for each task: By semester (F=Fall; SP =Spring; SU= Summer); Year (09=2009; 10=2010; 11=2011; 12=2012) and week of the semester (e.g., 5, 7, 10)
5. Planning time allotted for each task
6. Planning type (collaborative or individual)
7. Version(s) of each task
8. Rubric(s) used to score the tasks

Advertisement (task #2)
Proficiency level: 1
Task versions: 1
Administration time: 3: A: F10wk5, SP11wk5; B: F11wk5; C: F12wk7
Planning time: A 5 minutes; B, C 3 minutes
Planning type: Collaborative
Task completion time: A: 3-4 minutes; B, C: 2. minutes
Rubric types: 2

Task
Look at the following products or ads. With you partner, choose one of the ads or products to create a radio advertisement. You will have X minutes to discuss and plan your advertisement with your partner. Your commercial must be X minutes. Use the blank space on the next page to plan your radio advertisement.

Your radio commercial must include the following elements:
1) clear identification of your product
2) the effective use of a positive or negative appeal
3) the effective use of one of the "Attention Grabbers" discussed in Unit 1
4) equal speaking parts for you and your partner

Picture of a sports drink	Picture of a person smoking
Picture of a razor	Picture of a camera

Rubrics
Version A, B

	Collaboration	Task completion	Style
4	Both learners: • Work together on almost all parts of the task. • Carefully respond to each other and engage	• Excellent completion of the task; all required elements of the task are present. • Content is rich; ideas developed with elaboration	• Excellent use of attention grabbers • Have excellent skills in providing reasons and elaborating ideas

	each other's ideas. • Offer constructive feedback.	and detail; overall task outcome is outstanding.	• Have excellent skills in utilizing positive and/or negative appeals
3	Both learners: • Work together on most parts of the tasks •Respond to each other and engage each other's ideas •Offer some feedback.	• Good completion of the task; almost all required elements are present. • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory.	• Good use of attention grabbers • Have good skills in providing reasons and elaborating ideas • Have good skills in utilizing positive and/or negative appeals
2	• Both learners: • Engage in interaction, but only one student generally leads participation during task. • Sometimes ignore each other's responses. • Sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing. • Responses mostly appropriate and adequately developed; overall task outcome is acceptable.	• Adequate use of attention grabbers • Have adequate skills in providing reasons and elaborating ideas • Have adequate skills in utilizing positive and/or negative appeals
1	• Both learners: • Engage each other very little in the task. • Often ignore each other's responses and have high level of disagreements and inability to reach consensus. • Provide very little feedback to each other.	• Partial completion of the task; many required elements are missing. • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor.	• Have some difficulties in using attention grabbers • Have difficulties in providing reasons and elaborating ideas • Have difficulties in utilizing positive and/or negative appeals
0	• Both learners: • Show no evidence of working with their partner • Never pay attention or respond to each other. • Demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present. • Responses are inappropriate; overall task outcome is not comprehensible.	• Cannot use attention grabbers • Have no skills in providing reasons and elaborating ideas • Have no skills in utilizing positive and/or negative appeals

Version C

Collaboration Check List	Number of Features Checked	Score

	Number of Features Checked	Score
□ Maintains a balance of talk between speakers □ Introduces topics or opens/closes conversation □ Listens and responds to create cohesion/flow in conversation □ Uses comprehension checks (e.g., *You mean there is no bargain tour?),* confirmation checks (e.g., *You see what I said*?), clarification requests (e.g., *What does it mean*?)	3	4
	Strong 2 or weak 3	3.5
	2	3
	Strong 1 or weak 2	2.5
	1	2
	0	0
Task Completion Check List	Number of Features Checked	Score
□ Introduces opinions and ideas □ Introduces reasons for opinions/ideas □ Develops ideas with details; gives creative reasons/examples □ Agrees on a choice	3	4
	Strong 2 or weak 3	3.5
	2	3
	Strong 1 or weak 2	2.5
	1	2
	0	0
Style Check List	Number of Features Checked	Score
□ States an opinion effectively □ States strong (e.g., *We definitely should/shouldn't, I think we should*) and weak suggestions (e.g., *We might/could; Why don't we, how about*) effectively □ Uses a variety of strategies and a range of language to express opinions and ideas □ Uses intonation and stress to help communicate meaning	3	4
	Strong 2 or weak 3	3.5
	2	3
	Strong 1 or weak 2	2.5
	1	2
	0	0

Cancer advice (task #3)
Level: 3
Task versions: 1
Administration time: SP10, wk 5
Planning time: 1 minute
Planning type: Individual
Task completion time: 4 minutes
Rubric types: 1

Task
Provided to both students
- A 65-year-old man comes to his physician (doctor) with complaints of persistent, but not extreme pains in his stomach.
- Tests reveal that he has cancer of the stomach.

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- The man has just retired from a busy professional career, and he and his wife are about to leave on a round-the-world cruise that they've been planning for over a year.
- The wife knows her husband has cancer but she doesn't want him to know that he's dying.
- His wife asks his physician to keep the cancer a secret.

Student A	Student B
You believe that the physician should tell the patient the **truth** about the cancer. Consider using the following expressions: One way to look at ____ is… / And another way could be… Of course, it depends on… / It could also depend on… On the one hand, you could say… / On the other hand… One way to think about ___ is… / But the flip side would be… If you look at it from the angle of… / But seen from another angle… You have one minute to prepare your ideas.	You believe that the physician should **lie** to the patient about the cancer. Consider using the following expressions: One way to look at ____ is… / And another way could be… Of course, it depends on… / It could also depend on… On the one hand, you could say… / On the other hand… One way to think about ___ is… / But the flip side would be… If you look at it from the angle of… / But seen from another angle… You have one minute to prepare your ideas.

Step 1: Exchange your ideas with your partner. Ask questions to make sure you understand your partner's ideas.

Step 2: Try to convince your partner that your opinion is more justified. Together, decide what the physician should do.

You have four minutes to exchange ideas and agree on what the physician should do.

Rubric

	4	3	2	1	0
Collaboration	<u>Both</u> <u>consistently</u> and <u>actively</u> work toward group goals. Value the knowledge, opinion and skills of group	Both work toward group goals <u>without</u> <u>prompting</u>. Value the knowledge, opinion and skills of group members.	One works toward group goal but the other contributes occasionally. Opinion and knowledge of group	One works toward group goal but the other contributes only when prompted. Only the dominant member's	Both learners show no evidence of working with partners. Both learners never pay attention or

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	members and encourage contribution. The amount of contribution is fairly equal.	The amount of contribution is fairly equal but turn is clearly controlled by one member.	members do not receive equal attention. There is a clear difference in the amount of contribution.	opinion is valued; or the other member is disinterested. One member largely dominates the conversation.	respond to each other. Both learners demonstrate no evidence of ability to provide feedback to each other.
Task completion	Both complete task with excellent ideas relevant to topic. Good use of examples to illustrate idea. Ideas are exceptionally well developed and coherent; relationship between ideas is clear.	Both complete the task with valid ideas relevant to topic. Sufficient number of ideas, but may lack elaboration or specificity. Relationships between ideas may not be immediately clear.	One or both complete part of the task with ideas relevant to topic, but with an insufficient number. Some ideas lack elaboration or specificity. Connections of ideas may not always be clear.	Both complete part of the task with only a few ideas relevant to topic. Ideas are limited and lack elaboration or specificity. Unclear connection between ideas.	Unable to complete the task; few or no required elements are present Responses are inappropriate; overall task outcome is not comprehensible

Style	Both demonstrate use of a variety of expressions for giving opinions, agreeing, disagreeing, and building on other member's idea. Shows appropriate use of the expressions and vocabulary. Exhibits a fairly high degree of automaticity. Some errors are noticeable but do not obscure meaning.	Both demonstrate use of a few expressions for giving opinions, agreeing, and disagreeing, and building on other member's idea. Show fairly automatic and effective use of the expression and vocabulary.	One or both demonstrates limited range and control of expressions for giving opinions, agreeing, and disagreeing, and building on other member's idea. May rely on one or two general expressions. Show difficulty using the more complex expression and can be inappropriate at times.	Both demonstrate a very limited range of expressions for giving opinions, agreeing, and disagreeing, and building on other member's ideas. Rely heavily on one or two general expressions. Show limited use of the more complex and specific expressions.	No use of more complex and specific expressions for giving opinions, agreeing, disagreeing, and building on other member's ideas.

A score of "0" is also given when learners make no attempt to fulfill the task.

Chen problem (task #4)
Level: 1
Task versions: 3:
Administration times: A: F12wk14, SU12 wk5; B: F11wk10; C: SU11wk5
Planning time: A, C 1-2 minutes; B 2 minutes
Planning type: A, B individual and then collaborative planning; C: individual planning only
Task completion time: 2 minutes for all tasks
Rubric types: 2

Tasks
Version A
Directions: Read the situation below. You and your partner need to describe, discuss and agree on a solution to this person's problem.

Chen's test score at the PIE is high enough to go to the university next semester. Chen is happy, but he is also worried. He is feeling self-conscious because he thinks his teachers and classmates won't understand him because of his accent. How could you help Chen? You and your partner need to introduce your solutions, discuss the reasons for your choices, and agree on one solution.

- You will have <u>2 minutes</u> by yourself to prepare your opinion.
- Then you will have <u>1 minute</u> to prepare with your partner.
- Finally, you will have <u>2 minutes</u> to record your conversation and agree on a solution.
- Remember that you need to <u>take turns</u>, <u>discuss</u>, and <u>agree on a solution in the end</u>.

Version B, C
Directions**:** Read the situation below. You and your partner need to discuss and decide on a solution to this person's problem.

Version B: You will have 2 minutes by yourself to prepare your opinion of what the person should do. Then you will have 1 minute to prepare with your partner.
Finally, you will have 2 minutes to record your conversation and agree on a solution.

Version C: You will have 2 minutes to prepare your opinion of what the person should do and 2 minutes to speak with your partner to decide on a solution.

Chen has just been informed that his test score was high enough at PIE to move on to the university next semester. Chen is excited, but he is also worried. He is feeling self-conscious because he thinks that his accent might be too heavy and that his teachers and classmates might not understand him very well.

Imagine that you and your partner are sitting at the Union and talking about Chen's problem.
You need to **describe, discuss** and **offer a solution** to Chen's problem.
Remember that you need **to take turns, collaborate and agree on a solution** in the end.
Try to use the vocabulary and grammar presented in Unit 4.

Rubrics
Version A

Collaboration Check List	Number of Features Checked	Score
□ Maintains a balance of talk between speakers	3	4
□ Introduces topics or opens/closes conversation □ Listens and responds to create cohesion/flow in conversation	Strong 2 or weak 3	3.5
	2	3
□ Uses comprehension checks (e.g., you mean there is no bargain tour?), confirmation checks	Strong 1 or weak 2	2.5
(e.g., you see what I said?), clarification requests	1	2
(e.g., what does it mean?)	0	0

Task Completion Check List	Number of Features Checked	Score
□ Introduces opinions and ideas □ Introduces reasons for opinions/ideas □ Develops ideas with details □ Agrees on a choice	3	4
	Strong 2 or weak 3	3.5
	2	3
	Strong 1 or weak 2	2.5
	1	2
	0	0
Style Check List	Number of Features Checked	Score
□ States an opinion effectively □ States strong (e.g., we definitely should/shouldn't, I think we should) and weak suggestions (e.g., we might/could, why don't we, how about) effectively □ Uses a variety of strategies and a range of language to express opinions and ideas □ Uses intonation and stress to help communicate meaning	3	4
	Strong 2 or weak 3	3.5
	2	3
	Strong 1 or weak 2	2.5
	1	2
	0	0

*Students are scored individually in all domains above.

Version B, C

	Collaboration	Task completion	Style
4	Both learners: • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present. • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding.	• Excellent use of attention grabbers • Have excellent skills in providing reasons and elaborating ideas • Have excellent skills in utilizing positive and/or negative appeals
3	Both learners: • Work together on most parts of the tasks • Respond to each other and engage each other's ideas •offer some feedback.	• Good completion of the task; almost all required elements are present. • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory.	• Good use of attention grabbers • Have good skills in providing reasons and elaborating ideas • Have good skills in utilizing

			positive and/or negative appeals
2	• Both learners: • Engage in interaction, but only one student generally leads participation during task. • Sometimes ignore each other's responses. • Sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing. • Responses mostly appropriate and adequately developed; overall task outcome is acceptable.	• Adequate use of attention grabbers • Have adequate skills in providing reasons and elaborating ideas • Have adequate skills in utilizing positive and/or negative appeals
1	• Both learners: • Engage each other very little in the task. • Often ignore each other's responses and have high level of disagreements and inability to reach consensus. • Provide very little feedback to each other.	• Partial completion of the task; many required elements are missing. • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor.	• Have some difficulties in using attention grabbers • Have difficulties in providing reasons and elaborating ideas • Have difficulties in utilizing positive and/or negative appeals
0	• Both learners: • Show no evidence of working with their partner • Never pay attention or respond to each other. • Demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present. • Responses are inappropriate; overall task outcome is not comprehensible.	• Cannot use attention grabbers • Have no skills in providing reasons and elaborating ideas • Have no skills in utilizing positive and/or negative appeals

Choosing a patient (task #5)
Level: 2
Task versions: 4
Administration time: A: F10wk5, SP11wk5; B: F11wk10; C: SU11wk8; D: SP12wk7
Planning time: 3 minutes for all tasks
Planning type: Collaborative
Task completion time: A, C = 3 minutes; B, D = 2.5 minutes
Rubric types: 2

Directions: You and your partner will pretend to be nutritionists working for a university health center. You have two patients who want to lose weight but need help beyond what a normal diet can provide. After you and your partner describe and make a recommendation about each patient, decide which patient needs more help and should be admitted into the university health center for treatment. You can only admit one student to the health center.

(1) You are in charge of X's health plan. Describe X's problem, and then make a recommendation about how she can best lose weight.
   Do not just read the information. Make a story about X/Y.
   (2) While listening to your partner, fill out the following table about X/Y.

Your partner's recommended treatment

(3) Talk with Student A and make a decision about who needs more professional help from the health clinic. Make sure to provide reasons to support your ideas.

Version A

Melia	Joe
(1) Is a university freshman	1) Is a graduate student
(2) She has gained 15 pounds	(2) Since he was a boy, he has always been at least 25 pounds overweight
(3) Her clothes don't fit	(3) Obesity runs in his family
(4) She is in class from 8am until 7pm	(4) He's on a diet but just doesn't lose weight
(5) She studies at the library until 12am	(5) He's worried about diabetes
(6) She buys snacks at the library	(6) He sits at his desk for long hours every day

Version B, C

Cindy	Lou
(1) She works at Wells Fargo Bank.	(1) He is a professor.
(2) Obesity runs in her family.	(2) He sleeps only 4 hours a night.
(3) She is depressed because of her job.	(3) He eats at McDonalds three times a week.
(4) She works from 7am until 5pm.	(4) Cardiovascular disease runs in his family.
(5) She has gained 20 pounds.	(5) He's worried about his health.
(6) She eats from the vending machine every day.	(6) He sits at his desk for long hours every day.

You and your partner are nutritionists at a health center. You have two patients who want to lose weight. Both patients need to eat healthier foods and exercise more. You have **3** minutes

to prepare (don't show your instructions to your partner) and **2.5** minutes to speak with your partner.

(2) While listening to your partner, take notes in the following table about X/Y.

Version D
Directions: You and your partner are nutrition advisors at a health center. You have two patients who want to lose weight, but you can only help one of them. Both patients need to eat healthier foods and exercise more. You have 3 minutes to prepare with your partner and 2 minutes and 30 seconds to speak with your partner.

(1)   Describe Cindy's/Jack's problems. <u>Do not just read the information. Make a story about Cindy/Jack.</u>
(2)   Talk with Student A/B to make a decision and come to an agreement about who needs more professional help from the health clinic. Make sure to provide reasons to support your ideas.

Cindy	Jack
Has obese parents	Sleeps 4 hours a night
Works long hours	Eats McDonalds a lot
Gained 20 pounds	Has heart problems in his family
Eats junk food all day	Sits at desk all day

Rubrics
Versions A, C

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks •Respond to each other and engage each other's ideas •Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
2	• Some engagement in the interaction but only one student	• Acceptable completion of the task; some required elements are missing	• Adequate ability to state an opinion

	Collaboration	Task completion	Style
	• generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Versions B, D

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3.5	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and	• Good ability to state an opinion • Show good skills in using narrative techniques

	• Offer feedback.	detail; overall task outcome is satisfactory	• Show good skills in interrupting politely to ask questions
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
2	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Crime statistics (task # 6)
Level: 3
Task versions: 2
Administration time: A: F09wk10; C: SU10wk5
Planning time: 3 minutes
Planning type: Individual
Task completion time: A: 2 minutes; B: 3 minutes
Rubric types: 1

Task

Scenario: You and your partner are taking Sociology at NAU. Your assignment was to find two different statistical reports on crime rates in the USA. You and your partner have chosen two different reports.

You have three minutes to individually prepare your own ideas before discussing it with your partner. You have two minutes to complete this task with your partner.

Directions
Step 1: In pairs, explain what each of your statistical reports present.
Step 2: Based on the amount of information that each report includes, discuss two possible reasons for types of crimes and crime rates and two solutions to decrease crime rates.
Step 3: Agree on the biggest factor contributing to crime rates in large cities.

Types of crimes in 2004
Student A

Student B

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Rubric

	4	3	2	1	0
Collaboration	Both consistently and actively work toward group goals. Value the knowledge, opinion and skills of group members and encourage contribution. The amount of contribution is fairly equal.	Both work toward group goals without prompting. Value the knowledge, opinion and skills of group members. The amount of contribution is fairly equal but turn is clearly controlled by one member.	One works toward group goal but the other contributes occasionally. Opinion and knowledge of group members do not receive equal attention. There is a clear difference in the amount of contribution.	One works toward group goal but the other contributes only when prompted. Only the dominant member's opinion is valued; or the other member is disinterested. One member largely dominates the conversation.	Both learners show no evidence of working with partners. Both learners never pay attention or respond to each other. Both learners demonstrate no evidence of ability to provide feedback to each other.
Task completion	Both complete task with excellent ideas relevant to topic.	Both complete the task with valid ideas relevant to topic.	One or both complete part of the task with ideas relevant to topic, but	Both complete part of the task with only a few ideas relevant to	Unable to complete the task; few or no required elements are present

	Good use of examples to illustrate idea. Ideas are exceptionally well developed and coherent; relationship between ideas is clear.	Sufficient number of ideas but may lack elaboration or specificity. Relationships between ideas may not be immediately clear.	with an insufficient number. Some ideas lack elaboration or specificity. Connections of ideas may not always be clear.	topic. Ideas are limited and lack elaboration or specificity. Unclear connection between ideas.	Responses are inappropriate; overall task outcome is not comprehensible
Style	Both demonstrate use of a variety of expressions for giving opinions, agreeing, disagreeing, and building on another member's idea. Shows appropriate use of the expressions and vocabulary. Exhibits a fairly high degree of automaticity. Some errors are noticeable but do not obscure meaning.	Both demonstrate use of a few expressions for giving opinions, agreeing, and disagreeing, and building on other member's idea. Show fairly automatic and effective use of the expression and vocabulary.	One or both demonstrates limited range and control of expressions for giving opinions, agreeing, and disagreeing, and building on another member's idea. May rely on one or two general expressions. Show difficulty using the more complex expression and can be inappropriate at times.	Both demonstrate a very limited range of expressions for giving opinions, agreeing, and disagreeing, and building on other member's ideas. Rely heavily on one or two general expressions. Show limited use of the more complex and specific expressions.	No use of more complex and specific expressions for giving opinions, agreeing, disagreeing, and building on other member's ideas.

Election (task # 7)
Level: 2
Task versions: 2
Administration time: A: F11wk5; B: SU11wk5
Planning time: 3 minutes
Planning type: Individual
Task completion time: A: 2 minutes; B: 3 minutes
Rubric types: A: half points, no score below 2; B: no half points

Task
Version A
Imagine that you and your partner will be voting for the candidates for the student government president at the PIE. There are two candidates who are leading in the polls. After you and your partner discuss the strengths and weaknesses of each candidate, decide which one you will both vote for.

You will have <u>three minutes</u> to prepare your answer and <u>two minutes</u> to complete the task with your partner.

(1) You are Student A/B and you support Bill in the election
<u>Do not just read the information. Make a story about Bill—be sure to talk about his qualifications to try to convince your partner to pick him.</u>

Student A
Bill
1) Has many classes;
2) Talkative, hard-working;
3) Promises: Fun activities at the PIE, free course books;
4) Plans: Start an international soccer team;
    5) Languages: German, English, Arabic.

Student B
Maria
1) Has no classes on Fridays
2) Intelligent, organized
3) Promises: New chairs, student break room
4) Plans: Open an international restaurant at NAU
    5) Languages: Spanish, English, Chinese

(2) While listening to your partner, take notes about Maria.
(3) Talk with Student B and <u>agree</u> about who deserves to be elected. Make sure to <u>provide reasons</u> to support your ideas. Negotiate to make a decision.

Version B

Imagine that you and your partner will be voting for the candidates for the student government president in PIE. There are two candidates who are leading in the polls. After you and your partner discuss about the strength and weaknesses of each candidate, decide which one you will vote for.

(1) You are Student A/B and you support Majed in the election
Do not just read the information. Make a story about Majed—be sure to talk about his qualifications to try to convince your partner to pick him.

Student A
Majed
(1) Is from Kuwait.
(2) Is a level 4 student.
(3) Has to be in class for 25 hours in a week.
(4) Is very talkative, hardworking and intelligent.
(5) Has a good relationship with the administration and teachers.
(6) Promises to bring more fun activities to the PIE.
(7) Wants to give out free course-books each semester.
(8) Dresses very professionally.
(9) Likes to tell people what to do.

Student B
Felah
(1) Is from Saudi Arabia.
(2) Is a level 5 student.
(3) Has to be in class only 15 hours in a week.
(4) Is a good negotiator.
(5) Knows how to manage his time.
(6) Has a lot of friends from other NAU departments.
(7) Promises to get the PIE involved in different university organizations.
(8) Wants to open a Saudi restaurant on Campus.
(9) Is a little lazy.

Rubrics
Version A

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions

	Collaboration	Task completion	Style
3.5	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
2	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Version B

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task.	• Excellent completion of the task; all required elements of the task are present	• Outstanding ability to state an opinion

	• Respond to each other at least twice. • Sometimes offer constructive feedback.	•Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Sometimes offer feedback or back channel.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. •Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners never back channel or one does not provide feedback.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

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Avoid an extreme sport (task # 8)
Level: 1
Task versions: 1
Administration time: F09wk5, SP10wk5
Planning time: 2 minutes
Planning type: Individual
Task completion time: 3 minutes
Rubric types: 1

Task
Student A:
Directions: Your partner really likes extreme sports. You think they are too dangerous. You want your partner to stop doing extreme sports. Your partner does not want to stop. You and your partner must make a decision.

(1) These are pictures of some extreme sports. Describe what could happen to someone playing these sports and tell your partner why you think he or she should stop participating in extreme sports.

Picture of a skateboarder	Picture of rock climbing	Picture of a slackline jumper	Picture of people skydiving
Picture of a snowboarder	Picture of motorcycle jumping	Picture of speedboat racing	

(2) Listen to your partner's reasons for doing extreme sports. Use the table below to take notes. Ask questions to get enough information.

Reasons you like extreme sports	Reasons why your partner thinks extreme sports are too dangerous

(3) Make a decision. While sharing your opinions, make sure to provide reasons to support your ideas.

Student B:
Directions: You really like extreme sports. Your partner thinks they are too dangerous. Your partner wants you to stop doing extreme sports. You do not want to stop. You and your partner must make a decision.

(1) These are pictures of some extreme sports. Describe what you like about extreme sports and explain to your partner why you do not want to stop participating in them.

Picture of a skateboarder	Picture of rock climbing	Picture of a slackline jumper

Picture of a snowboarder	Picture of motorcycle jumping	Picture of speedboat racing

(2) Listen to your partner's reasons for why extreme sports are too dangerous. Use the table below to take notes. Ask questions to get enough information.

Reasons you like extreme sports	Reasons why your partner thinks extreme sports are too dangerous

(3) Make a decision. While sharing your opinions, make sure to provide reasons to support your ideas.

Rubric

	Collaboration	Task completion	Style
4	Both learners often • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Excellent use of attention grabbers • Have excellent skills in providing reasons and elaborating ideas • Have excellent skills in asking for partner's opinion
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good use of attention grabbers • Have good skills in providing reasons and elaborating ideas • Have good skills in asking for partner's opinion
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do/does not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate use of attention grabbers • Have adequate skills in providing reasons and elaborating ideas • Have adequate skills in asking for partner's opinion
1	• One learner always takes the lead in discussion during tasks or neither of them often try to engage in tasks	• Partial completion of the task; many required elements are missing	• Have some difficulties in using attention grabbers

• Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Have difficulties in providing reasons and elaborating ideas • Have difficulties in asking for partner's opinion
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot use attention grabbers • Have no skills in providing reasons and elaborating ideas • Have no skills in asking for partner's opinion

Hiring (task # 9)
Level: 2
Task versions: 1
Administration time: F09wk10, SP10wk9
Planning time: 2 minutes
Planning type: Individual
Task completion time: 2 minutes
Rubric types: 1

Task
Student A:
Scenario: You work at a marine conservation center (e.x., protecting the ocean and its wildlife) in Miami. There is an opening for a new employee.

(1) You have Sam's profile and believe he is a good fit for the job. Try to convince your partner that Sam should get the job by using the information below. You must reach a decision about who to hire by the end of 2 minutes.

Do not just read the list but provide explanations or examples to support your idea.   <u>You have 2 minutes to prepare and 2 minutes to talk</u>.

Sam

```
Ability to finish task
Good communication skills
Attention to detail
Sense of humor
```

(2)While listening to your partner, you may take notes about Greg.

(3) Make a decision. Make sure to provide enough reasons for supporting your ideas.

Student B:

Scenario: You work at a marine conservation center (e.x., protecting the ocean and its wildlife) in Miami. There is an opening for a new employee.

(1) You have Greg's profile and believe he is a good fit for the job. Try to convince your partner that Greg should get the job by using the information below. You must reach a decision about who to hire by the end of 2 minutes.

Do not just read the list but provide explanations or examples to support your idea. <u>You have 2 minutes to prepare and 2 minutes to talk</u>.

```
Greg

Compassionate
Assertive
Public speaking experience
Ability to work with many kinds of
people
```

(2) While listening to your partner, you may take notes about Sam.

(3) Make a decision. Make sure to provide enough reasons for supporting your ideas

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions

2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Choosing an extreme sport (task #10)
Level: 1
Task versions: 1
Administration time: SP12wk14
Planning time: 1minute individual; 2 minutes collaborative
Planning type: Individual then collaborative
Task completion time: 2 minutes
Rubric types: 1; Score of 2 is the minimum

Student A
Step 1: Choose one extreme sport you want to do this summer

skydiving   ice climbing   cave diving   river rafting   ultramarathon
   Step 2: You have one minute to prepare the reasons for your choice.

Step 3: Then you have <u>two minutes</u> to discuss and plan with your partner who has a different list.

Step 4: You and your partner have <u>two </u>minutes to <u>record the following</u>:

- Introduce your own choice.
- Discuss reasons for your choice.
- Agree on one extreme sport.

Student B

Step 1: Choose one extreme sport you want to do this summer

skydiving   ice climbing   cave diving   river rafting   ultramarathon

Step 2: You have <u>one minute</u> to prepare the reasons for your choice.

Step 3: Then you have <u>two minutes</u> to discuss and plan with your partner who has a different list.

Step 4: You and your partner have <u>two </u>minutes to <u>record the following</u>:

- Introduce your own choice.
- Discuss reasons for your choice.
- Agree on one extreme sport.

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3.5	Both learners usually • Work together on most parts of the tasks •Respond to each other and engage each other's ideas •Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques

	• Both learners or one learner sometimes do not offer any feedback.	developed; overall task outcome is acceptable	• Show adequate skills in interrupting politely to ask questions
2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
2	• Both learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Investing in a famous entrepreneur (task #11)
Level: 2
Task versions: 1
Administration time: F11wk15
Planning time: 3 minutes
Planning type: Individual
Task completion time: 2.5 minutes
Rubric types: 1 Minimum score of 2

Task
Student A
Situation: You and your partner have been given 2 million dollars to invest in a company developed by a famous entrepreneur.

Based on SWOT analyses of both companies, you and your partner will:
1. debate the pros and cons of each company
2. decide which company in which you want to invest together
Do NOT just read the list but provide details or examples to support your ideas.

The Unique and Amazing Computer Store

Strength: unique help for each customer
Weakness: expensive; takes more time
Opportunity: no competing businesses nearby
Threat: the online shopping trend

Student B
Situation: You and your partner have been given 2 million dollars to invest in a company developed by a famous entrepreneur.

Based on SWOT analyses of both companies, you and your partner will:

1. debate the pros and cons of each company
2. decide which company in which you want to invest together

Do NOT just read the list but provide details or examples to support your ideas.

The Super Awesome International Drive-thru Restaurant
Strength: delicious, and inexpensive international food
Weakness: difficult to find a location with enough space
Opportunity: large international population
Threat: high taxes for this kind of business

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3.5	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions

3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. •Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
2	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Investing in science funding (task # 12)
Level: 2
Task versions: 1
Administration time: A F10wk15; B: SP11wk15
Planning time: 2 minutes
Planning type: Individual
Task completion time: 3 minutes
Rubric types: 1

Task A
Student A:
Scenario: You and your partner are scientists, and you are discussing the possibilities of different scientific projects. The government has given your team $5 Billion dollars to explore

space. You must discuss with your partner your different ideas and reach an agreement about how to best use the money.

(1) You think the money would best be spent by creating a manned mission to Mars. You want to convince your partner that the most knowledge can be gained by sending people to another planet, but it is also your duty to inform your partner of all the positive and negative factors.

Do NOT just read the list but provide explanations or further examples to support your idea.

Manned Mission to Mars	
Positive	Negative

People will be able to conduct new experiments (not previously planned for) based on what they discover on Mars. The astronauts can monitor how space affects living organisms.
   3. (Think of a new, original positive reason)_____
	Space travel is dangerous
	
	It's hard to plan for everything that the astronauts might need on their mission
	   3.(Think of a new, original negative reason)_____

(2) While listening to your partner, you may take notes about positive and negative factors of building a gigantic space telescope.
(3) Make a decision about which project should be completed. Make sure to provide enough reasons for supporting your ideas.

Student B:
Scenario: You and your partner are scientists, and you are discussing the possibilities of different scientific projects. The government has given your team $5 Billion dollars to explore space. You must discuss with your partner your different ideas and reach an agreement about how to best use the money.

(1) You think the money would best be spent by creating a gigantic space telescope. You want to convince your partner that the most knowledge can be gained by using a powerful telescope to look into the farthest corners of the universe, but it is also your duty to inform your partner of all the positive and negative factors.

Do NOT just read the list but provide explanations or further examples to support your idea.

Gigantic Space Telescope	
Positive	Negative

The telescope can be remotely operated from Earth 24 hours a day. It is 300 times more powerful than any space telescope ever made before. Think of a new, original positive reason)_____	Because of its size, the telescope must be fully assembled in space, which requires several trips by astronauts. The telescope could easily be damaged by comets, meteorites, or space junk. Think of a new, original negative reason)_____

(2) While listening to your partner, you may take notes about positive and negative factors of a manned mission to Mars.

(3) Make a decision about which project should be completed. Make sure to provide enough reasons for supporting your ideas.

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions

1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Matt test score (task # 13)
Level: 1
Task versions: 1
Administration time: SP12wk7
Planning time: 3 minutes
Planning type: Individual
Task completion time: 2
Rubric types: 1

Task (Given to both participants)

Matt's test score at the PIE is high enough to go to the university next semester. Matt is happy, but he is also worried. He is feeling self-conscious because he thinks his teachers and classmates might not understand him because of his accent.

First, think about your opinion of what Matt should do. Then, with your partner, you need to describe, discuss and agree on a solution to Matt's problem.

Remember that you need to take turns, discuss, and agree on a solution in the end.

Rubric

	Collaboration	Task completion	Style

4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions

Music and vocabulary (task # 14)
Level: 3
Task versions: 1
Administration time: F09wk15
Planning time: 3 minutes
Planning type: Individual
Task completion time: 3 minutes

Rubric types: 1

Task (Given to both A and B)

Scenario: You and your partner are taking Psychology at NAU. Your assignment is to design a research experiment to find out the relationship between vocabulary learning and classical music. You and your partner have to write a report on how you would carry out the study.

You have three minutes to individually prepare your own ideas before discussing it with your partner. You have three minutes to complete this task with your partner.
Step 1: In pairs, decide a research question which you would like to examine. For instance, in Unit 9, several experiments related to music and reasoning were introduced.
Step 2: Based on your decision for Step 1, discuss how you would like to design your study. You should consider the following:

(1)   Who are your participants (e.g., age, nationality, educational background)?
(2)   What groups are you going to include?
(3)   What is each group going to do?
(4)   What are your predictions regarding the results of the study?

Rubric

	4	3.5	3	2.5	0
Collaboration	Both consistently and actively work toward group goals. Value the knowledge, opinion and skills of group members and encourage contribution. The amount of contribution is fairly equal.	Both work toward group goals without prompting. Value the knowledge, opinion and skills of group members. The amount of contribution is fairly equal but interaction is clearly controlled by one member.	One works toward group goal but the other contributes only occasionally. Opinion and knowledge of group members do not receive equal attention. There is a clear difference in the amount of contribution.	One works toward group goal but the other contributes only when prompted. Only the dominant member's opinion is valued; or the other member is disinterested. One member largely dominates the conversation.	Both learners show no evidence of working with partners. Both learners never pay attention or respond to each other. Both learners demonstrate no evidence of ability to provide feedback to each other.

Task completion	Both complete task with excellent ideas relevant to topic. (see "task completion requirements" below) Good use of examples to illustrate idea. Ideas are exceptionally well developed and coherent; relationship between ideas is clear.	Both complete the task with valid ideas relevant to topic. Sufficient number of ideas, but may lack elaboration or specificity. Relationships between ideas may not be immediately clear.	Both complete part of the task with ideas relevant to topic, but with an insufficient number. Some ideas lack elaboration or specificity. Connections of ideas may not always be clear.	Both complete part of the task with only a few ideas relevant to topic. Ideas are limited and lack elaboration or specificity. Unclear connection between ideas.	Unable to complete the task; few or no required elements are present Responses are inappropriate; overall task outcome is not comprehensible
Style	Variety of expressions for emphasizing points, giving opinions, agreeing, disagreeing, and building on other member's idea. Shows appropriate use of the expressions and vocabulary. Exhibits a fairly high degree of automaticity. Some errors are noticeable but do not obscure meaning.	A few expressions for emphasizing points, giving opinions, agreeing, and disagreeing, and building on other member's idea. Show fairly automatic and effective use of the expression and vocabulary.	Demonstrate limited range and control of expressions for emphasizing points, giving opinions, agreeing, and disagreeing, and building on other member's idea. May rely on one or two general expressions. Show difficulty using the more complex	Demonstrate a very limited range of expressions for emphasizing points, giving opinions, agreeing, and disagreeing, and building on other member's ideas. Rely heavily on one or two general expressions. Show limited use of the more complex and specific expressions.	No use of more complex and specific expressions for emphasizing points, giving opinions, agreeing, disagreeing, and building on other member's ideas.

			expression and can be inappropriate at times.		

Nonverbal communication (task # 15)
Level: 3
Task versions: 1
Administration time: F10wk15
Planning time: 2 minutes
Planning type: Individual
Task completion time: 3 minutes plus time to make a decision (no time limit given for this part)
Rubric types: 1

Task (Given to both A and B)
Background information: You and your partner are talking about non-verbal communication. You have 2 minutes to plan and 3 minutes total to discuss with your partner.

Step 1 (2 minutes): Your friend is coming from your home country and is new to America. He does not know any non-verbal communication (e.g., hand gestures) that Americans often use. With your partner, discuss useful non-verbal communication that your friend can use in various situations. Then, develop a helpful list that you could give to your friend. Both student A and B should provide at least 1-2 suggestions.

Step 2 (3 minutes): Explain your points to your partner. Listen to your partner's main points for useful non-verbal communication that your friend can use. You and your partner only have 3 minutes to discuss this information.

Step 3: Decide together which types of non-verbal communication would be most helpful to put on the list for your friend.

Rubric

	Collaboration	Task completion	Style
5	Students always: • Work together • Carefully respond to each other • Engage each other's ideas • Offer constructive feedback	• Excellent completion of the task; all required elements are present • Content is rich; ideas developed with elaboration and detail	• Outstanding ability to state an opinion • Excellent skills in using narrative techniques

			• Excellent skills in interrupting politely to ask questions
4	Students almost always: • Work together • Carefully respond to each other • Engage each other's ideas • Offer constructive feedback	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail	• Good ability to state an opinion • Good skills in using narrative techniques • Good skills in interrupting politely to ask questions
3	• Some engagement but one student generally leads • Sometimes ignore each other's responses • One or both learner(s) usually do(es) not offer feedback	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed	• Adequate ability to state an opinion • Adequate skills in using narrative techniques • Adequate skills in interrupting politely to ask questions
2	• One learner always takes lead or neither engages the other in task • Often ignore each other's responses • High level of disagreement or are unable to reach agreement • Neither provides feedback to other	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
1	• Neither works with partner • Neither pays attention or responds to other • Neither demonstrates ability to provide feedback	• Unable to complete the task; few or no required elements are present • Responses are inappropriate or not comprehensible	• Cannot state an opinion • No skills in using narrative techniques • No skills in interrupting politely to ask questions

Presentation on healthy food (task # 16)
Level: 2
Task versions: 1
Administration time: F12wk7; SU12wk5
Planning time: 2 minutes
Planning type: Individual
Task completion time: 2.5 minutes
Rubric types: 1

Task (Given to both A and B)

You and your partner are going to discuss the topic of a new presentation called: Our Favorite Healthy Food

In your discussion with your partner you should:
- State what food you think should be in the presentation and why
- Listen and respond to your partner's healthy food ideas
- Make a decision together about what food you will talk about in your presentation

You have 2 minutes to think on your own and, then, 2 minutes and 30 seconds to speak with your partner.

Think on your own (Plan for 2 minutes):

Rubric

	Collaboration	Task completion	Style checklist
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas.	• Excellent completion of the task; all required elements of the task are present. • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding.	□ Declare/reject ideas (e.g., in my opinion, I'm not sure that's…) □ Asking for information (e.g., like what, what does x mean) □ Giving information (e.g., for example, I mean) □ Persuading (e.g., don't you agree/think) □ Countering (e.g., but, even though) □ Conceding (e.g., I see what you mean, that makes sense) □ Transition words (e.g., first, second, next, in addition, also)
3.5	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory.	
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses.	• Acceptable completion of the task; some required elements are missing. • Responses mostly appropriate and adequately developed; overall task outcome is acceptable.	

No. of Features	Score
4	4
Strong 3 or Weak 4	3.5
3	3

	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion.	• Partial completion of the task; many required elements are missing. • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor.	Strong 2 or Weak 3	2.5
2.5			2	2
			Strong 1 or Weak 2	1.5
			1	1
			0	0

Presentation on immigration (task # 17)
Level: 2
Task versions: 1
Administration time: F09wk15; SP10wk15
Planning time: 2 minutes
Planning type: Individual
Task completion time: 2 minutes
Rubric types: 1

Task
Scenario: You are taking ENG 105 (an introductory writing class) at NAU. You have an assignment to do a 10-minute presentation with a partner. Student B is your partner. Your presentation should be about immigration. Today, you are meeting with your partner. You must decide - together - what topics to include and how to organize your presentation.

You have 2 minutes to prepare and 2 minutes to talk.
You must prepare separately but speak together.

(1) Discuss the presentation plan.
You must share your ideas for topics with your partner. You would like to suggest the following ideas to your partner.

Ideas for the presentation for Student A
(1) Concerns related to teenage immigrants (2) Ways to help immigrants improve their English (3) Types of jobs that immigrants have or might have in the USA
Ideas for the presentation for student B

(1) Common reasons for immigration by different countries
(2) Educational policy for immigrants in the USA
(3) Child-immigrants' difficulties

(2) Decide with your partner how to structure (i.e., how you will organize it) the topics for your presentation. Your plan should meet the following criteria:
   a. Include at least three topics related to immigration from you and your partner's lists and *why* those topics are important.
   b. Provide a visual aid
   c. State the order of your topics and *why* you chose that order
(3) You must agree on a plan that includes contributions by both partners.

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions

1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Opening up a barbershop (task # 18)
Level: 2
Task versions: 1
Administration time: A: F10wk10; B: SP10wk10
Planning time: 2 minutes
Planning type: Individual
Task completion time: 3 minutes
Rubric types: 2

Task
Student A:
Scenario: You and your friend are investors. A business plan has just arrived at your office, and you need to complete a SWOT analysis to determine if this is a good business to invest in.

(1) You have the positive aspects of the new business idea. You must try to convince your partner that this is a good business to invest in. You must reach a decision about whether to invest in this business or not within 3 minutes.

Do NOT just read the list but provide explanations or examples to support your idea.

Student A

Cutting Edge Barber Shop and Hair Design	
Strengths	Opportunities

1. Highly trained stylists and barbers with good reputations 2. Discounts are offered to repeat customers 3. They have a large advertising budget	1. They are entering into a new location for businesses 2. There is no competition (no competing barber shops or hair salons) within a 10 mile area

Student B

Cutting Edge Barber Shop and Hair Design	
Weaknesses	Threats
1. Location- the barber shop and salon is located in an office park (a large group of office buildings) away from where people shop 2. The salon charges more money than customers are used to paying	1. The office park is often under construction and is difficult to find the location of the barber shop/salon 2. The state raised taxes on businesses

(2) While listening to your partner, you may take notes about the Weaknesses and Threats that the new business faces.
(3) Make a decision. Make sure to provide enough reasons for supporting your ideas.

Rubrics
Version A

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions
3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas •Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions

2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Version B

	4	3	2	1	0
Delivery	Clear and automatic speech with a few short pauses and hesitations. Intonation and stress help communicate meaning. Typically	A few awkward pauses, slow speech, more than a few mis-pronounced words. Some use of intonation and stress	Multiple long pauses, very slow speech, consistent mispronunciation of words. Some intonation and stress usage distort meaning. Listener needs to attend to speech carefully.	Attempts to address the prompt but has long periods of silence and unintelligibility.	Speaker makes no attempt to respond.

	correct pronunciation of words. The listener has little difficulty decoding speech.	may distort meaning. Listener occasionally needs to attend to speech carefully.			
Content	Generally accurate information relevant to topic. Sufficient number of ideas presented but might lack elaboration or specificity to some extent. Connections of ideas are generally clear.	General information is relevant to topic. Ideas are limited and usually lack elaboration or specificity. Connections of ideas maybe unclear.	Information needs to be more relevant to topic. Very limited number of ideas and repetitious.	Needs to make connections with listening information. Most information is unrelated to topic.	Speaker makes no attempt to respond.
Language use	Uses most required vocabulary and some additional vocabulary terms related to the topic. Consistent use of required grammatical features. Grammar and vocabulary use are accurate in general.	Uses several required vocabulary and some additional vocabulary terms related to the topic. Language often recycled. Use of required grammatical features. Frequent errors in grammar	Uses only a few required vocabulary terms. Relies on several vocabulary words from prompt; Has Noticeable errors in grammar and vocabulary use	Very limited range of vocabulary. Has problems with using the required grammatical features. Repetition of prompt. Frequent errors in grammar and vocabulary use.	Speaker makes no attempt to respond.

		and vocabulary use.			

Scholarship (task # 19)
Level: 1
Task versions: 1
Administration time: A: F9wk10; B: SP10wk9
Planning time: A:2 minutes; B: 1 minute
Planning type: Individual
Task completion time: 3 minutes
Rubric types: 1

Task
Directions: Your American friends, Tom and Sarah, got a scholarship to visit a different country for one week. Tom and Sarah have different expectations for this trip. You talked with Tom, and your partner talked with Sarah about what they would like to see/do.

Step 1 Version A: 2 minutes planning time; Version B: one minute planning time

(1) Look at what Tom/Sarah would like to see/do and think of <u>two places</u> that you think Tom/Sarah will be satisfied with. Tell your partner what Tom would like to see/do during his visit.

Tom: Student A
- Very interested in popular tourist attractions
- Wants to buy many souvenirs
- Wants to meet local people

Sarah: Student B
- Wants to learn about new cultures
- Wants to visit controversial tourist attractions
- Wants to visit a well-preserved areas

(2) Listen to your partner's story about what Tom/Sarah wants to see/do during the trip. After listening to your partner, find one place that you would like to take both Tom and Sarah considering what they would like to do/see. You have to consider both Tom and Sarah's ideas.

Rubric

	Collaboration	Task completion	Style
4	Both learners often • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration	• Excellent skills as a discussion leader • Have excellent skills in using transition words

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	• Offer constructive feedback.	and detail; overall task outcome is outstanding	• Have excellent skills in asking for partner's opinion
3	Both learners usually • Work together on most parts of the tasks •Respond to each other and engage each other's ideas •Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good skills as a discussion leader • Have good skills in using transition words • Have good skills in asking for partner's opinion
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do/does not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate skills as a discussion leader • Have adequate skills in using transition words • Have adequate skills in asking for partner's opinion
1	• One learner always takes the lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Have some skills as a discussion leader • Have difficulties in using transition words • Have difficulties in asking for partner's opinion
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot lead discussion • Have no skills in using transition words • Have no skills in asking for partner's opinion

Sleep clinic (task # 20)
Level: 2
Task versions: 1

Administration time: A: F09wk5; B: SP10wk5; C: SU10wk5
Planning time: 2 minutes
Planning type: A: Individual
Task completion time: A: 3 minutes; B: 2 minutes; C: 3-4 minutes
Rubric types: 1

Task
Directions:
You and your partner will pretend to be doctors. You both work at a Sleep Therapy Clinic; you work with people who have sleep disorders.
You have room at your clinic for one more patient. You and Student B must discuss two possible patients and decide whom to let in to the clinic.
You want to admit John Smith/Linda Evans, but Student A/B wants to admit Linda Evans/John Smith.
You and Student B must exchange information about each patient, and choose ONE patient to admit.

(1) You want to admit John Smith/Linda Evans. Tell a story about John Smith/Linda Evans to your partner.
Do not just read the information. Make a story about John/Linda.

John Smith: Student A	Linda Evans: Student B
Is a high school student	Works at a bank
Stays up until 2:00am to study	Her husband's snoring keeps her up all night
Suffers from insomnia	Has to go to work at 7:00am
Wants to go to law school	Cannot focus on her job during day time
Received a scholarship	Bought many sleeping pills

(2) While listening to your partner, fill out the following table about Linda.
3) Talk with Student B and make a decision about whom to let in to the clinic. Make sure to provide reasons to support your ideas.

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in using narrative techniques • Show excellent skills in interrupting politely to ask questions

3	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good ability to state an opinion • Show good skills in using narrative techniques • Show good skills in interrupting politely to ask questions
2	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate ability to state an opinion • Show adequate skills in using narrative techniques • Show adequate skills in interrupting politely to ask questions
1	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use narrative techniques • Try to interrupt politely to ask questions
0	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in using narrative techniques • Show no skills in interrupting politely to ask questions

Spanking (task # 21)
Level: 1
Task versions: 1
Administration time: F09wk15, F10wk15, SP11wk15
Planning time: 2 minutes
Planning type: Individual

Task completion time: 3 minutes
Rubric types: 1

Task
Student A:
Background information: You and your partner are talking about spanking and other kinds of discipline. You have 2 minutes to plan and 3 minutes to record with your partner.

Step 1 Student A: (2 minutes): You believe that <u>parents should never spank their children</u>. You think it should be illegal to spank children. Tell your partner why people should never spank their children. Think of at least 3 points to support your main idea.

Step 1 Student B: (2 minutes): You believe that <u>parents should spank their children sometimes</u>. You do NOT think it should be against the law to spank your children. Tell your partner why spanking is not child abuse and it is a good way to discipline children. Think of at least 3 points to support your main idea.

Bothe students A and B)
Step 2 (3 minutes): Explain your points to your partner. Listen to your partner's points for why parents <u>should</u> be allowed to spank their children.
Step 3 Decide together the best way for parents to discipline their children. Support your conclusion with details.

Rubric

	Collaboration	Task completion	Style
4	Both learners almost always • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present (see "requirements for completing tasks" below) • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Outstanding ability to state an opinion • Show excellent skills in supporting opinions in different ways • Show excellent skills in using voice qualities to express emotion
3.5	Both learners usually • Work together on most parts of the tasks •Respond to each other and engage each other's ideas •Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is good	• Good ability to state an opinion • Show good skills in supporting opinions in different ways • Show good skills in using voice qualities to express emotion
3	• Some engagement in the interaction but only one student	• Acceptable completion of the task; some required elements are missing	• Adequate ability to state an opinion

	generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do not offer any feedback.	• Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Show adequate skills in supporting opinions in different ways • Show adequate skills in using voice qualities to express emotion
2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage each other in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Try to state an opinion • Try to use skills in supporting opinions in different ways • Try to use skills in using voice qualities to express emotion
0	• Both learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible	• Cannot state an opinion • Show no skills in supporting opinions in different ways • Show no skills in using voice qualities to express emotion

Requirements for completing tasks: (1) present at least 3 main points to support his/her own idea. (2) Make a decision by exchanging information/expressing opinions to each other (3) quality of discussion/decision making process

Selecting and opening a store (task # 22)
Level: 2
Task versions: 1
Administration time: A: F12wk14; B: SP12wk14; C: SU12wk10
Planning time: 2 minutes individual; 2 minutes with partner
Planning type: Individual and Collaborative
Task completion time: 2-3 minutes
Rubric types: 2 (different items in "Style Checklist.")

Task
You and your partner will have a conversation to decide what type of store you should open in the mall.

1. You will have 2 minutes to think about your idea on your own. You can use

the SWOT analysis to help organize your thoughts.
2. You will then meet with your partner and have 2 minutes to prepare your conversation.
3. Then, you and your partner will have 2-3 minutes to record your conversation. You should discuss your idea and your partner's idea and then decide which type of store is best.

My store idea: _____

SWOT Analysis

Strengths	Weaknesses
Opportunities	Threats

Rubrics
Version A

	Collaboration	Task completion	Style checklist
4	Both learners almost always • work together on almost all parts of the task. • carefully respond to each other and engage each other's ideas.	• Excellent completion of the task; all required elements of the task are present. • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding.	□ Declare/reject ideas (e.g., in my opinion, I'm not sure that's…) □ Asking for information (e.g., like what, what does x mean?) □ Giving information (e.g., for example, I mean) □ Persuading (e.g., don't you agree/think) □ Countering (e.g., but, even though) □ Conceding (e.g., I see what you mean, that makes sense) □ Transition words (e.g., first, second, next, in addition, also)
3.5	Both learners usually • work together on most parts of the tasks • respond to each other and engage each other's ideas	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory.	
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses.	• Acceptable completion of the task; some required elements are missing. • Responses mostly appropriate and adequately developed; overall task outcome is acceptable.	

No. of Features	Score
4	4
Strong 3 or Weak 4	3.5
3	3
Strong 2 or Weak 3	2.5

2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion.	• Partial completion of the task; many required elements are missing. • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor.	2	2
			Strong 1 or Weak 2	1.5
			1	1
			0	0

Versions B and C

	Collaboration	Task completion	Style Checklist
4	Both learners almost always •work together on almost all parts of the task. • carefully respond to each other and engage each other's ideas. •offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	□ Declare/reject ideas (e.g., in my opinion, I'm not sure that's…) □ Hedges (e.g., perhaps, maybe, I guess, it seems) □ Express lack of information (e.g., I'm not sure, I can't remember, I have no idea) □ Asking for information (e.g., like what, what does x mean?) Giving information (e.g., for example, it means) □ Persuading (e.g., wouldn't you agree, don't you think) Countering (e.g., but, even though that may be true) Conceding (e.g., I see what you mean, that makes sense) □ Boundary signal words (e.g., first, second, before, after, now)
3.5	Both learners usually • work together on most parts of the tasks •respond to each other and engage each other's ideas •offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. •Both learners or one learner sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	No. of Features Score 4 4

			Strong 3 or Weak 4	3.5
2.5	• One learner always takes lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	3 Strong 2 or Weak 3 2 Strong 1 or Weak 2 1 0	3 2.5 2 1.5 1 0
2	• Bother learners show no evidence of working with partners • Both learners never pay attention or respond to each other • Both learners demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present • Responses are inappropriate; overall task outcome is not comprehensible		

Voluntary simplicity (task # 23)
Level: 1
Task versions: 3
Administration time: A: F10wk10, SP10wk15, SP11wk10; B: F11wk15, SU11wk8; C: SU10wk10
Planning time: 2 minutes
Planning type: Individual
Task completion time: A, C:3 minutes; B:2 minutes
Rubric types: 1 (2 points the lowest score)

Task
Student A:
Background information: You and your partner are talking about voluntary simplicity. You have 2 minutes to plan and 2/3 minutes total to discuss with your partner.

Step 1 (2 minutes): You believe that living a simple life has many advantages. You think people become healthier and happier if they choose this life style. Tell your partner why people should live a simple life. Think of at least 3 main points to support your idea.

Step 2 (2/3 minutes): Explain your points to your partner. Listen to your partner's main points for why people should live a modern life. You and your partner only have 3 minutes to discuss this information.

Step 3: Decide together which life style is better.

Student B:

Background information: You and your partner are talking about voluntary simplicity. You have 2 minutes to plan and 2/3 minutes total to discuss with your partner.

Step 1 (2 minutes): You believe that living a modern life is better than living a simple life. You do NOT think that simple life makes people happier and healthier. Tell your partner why people should live a modern life. Think of at least 3 main points to support your idea.

Step 2 (2/3 minutes): Explain your points to your partner. Listen to your partner's main points for why people should live a simple life. You and your partner only have 3 minutes to discuss this information.

Step 3: Decide together which life style is better.

Rubric

	Collaboration	Task completion	Style
4	Both learners: • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present. • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding.	• Excellent use of attention grabbers • Have excellent skills in providing reasons and elaborating ideas • Have excellent skills in utilizing positive and/or negative appeals
3.5	Both learners: • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer some feedback.	• Good completion of the task; almost all required elements are present. • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory.	• Good use of attention grabbers • Have good skills in providing reasons and elaborating ideas • Have good skills in utilizing positive and/or negative appeals
3	• Both learners: • Engage in interaction, but only one student generally leads participation during task. • Sometimes ignore each other's responses. • Sometimes do not offer any feedback.	• Acceptable completion of the task; some required elements are missing. • Responses mostly appropriate and adequately developed; overall task outcome is acceptable.	• Adequate use of attention grabbers • Have adequate skills in providing reasons and elaborating ideas • Have adequate skills in utilizing positive and/or negative appeals

2.5	• Both learners: • Engage each other very little in the task. • Often ignore each other's responses and have high level of disagreements and inability to reach consensus. • Provide very little feedback to each other.	• Partial completion of the task; many required elements are missing. • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor.	• Have some difficulties in using attention grabbers • Have difficulties in providing reasons and elaborating ideas • Have difficulties in utilizing positive and/or negative appeals
2	• Both learners: • Show no evidence of working with their partner • Never pay attention or respond to each other. • Demonstrate no evidence of ability to provide feedback to each other.	• Unable to complete the task; few or no required elements are present. • Responses are inappropriate; overall task outcome is not comprehensible.	• Cannot use attention grabbers • Have no skills in providing reasons and elaborating ideas • Have no skills in utilizing positive and/or negative appeals

Workplace monitoring (task # 24)
Level: 3
Task versions: 1
Administration time: A: SP10wk15; B: SU10wk10
Planning time: 3 minutes
Planning type: Individual
Task completion time: 3 minutes
Rubric types:2

Task
For this speaking part of the test, you will work with your partner.
Scenario: You and your partner are owners of a large company. You manage 300 employees. Recently, you have noticed problems with employee productivity and theft. Your company is losing money because employees are not selling enough products. Additionally, employees complain that their personal belongings have been stolen.

You decide to hold a meeting with your partner to solve this problem.

<After your teacher says to, please continue to the next page>

Student A
Your opinion: You *oppose monitoring* in the workplace. You *do not want* to use video cameras, phone taps, and email monitoring in your company.

You have three minutes to individually prepare your own ideas before discussing it with your partner. You have three minutes to complete this task with your partner.

Student B

Your opinion: You *support monitoring* in the workplace. You want to use video cameras, phone taps, and email monitoring in your company.

You have three minutes to individually prepare your own ideas before discussing it with your partner. You have three minutes to complete this task with your partner.

Explain your opinion. Listen to your partner and ask questions. Remember to take turns.

Rubric
Version A

	4	3.5	3	2.5	0
Collaboration	<u>Both</u> <u>consistently</u> and <u>actively</u> work toward group goals. Value the knowledge, opinion and skills of group members and encourage contribution. The amount of contribution is fairly equal.	Both work toward group goals <u>without</u> <u>prompting</u>. Value the knowledge, opinion and skills of group members. The amount of contribution is fairly equal but interaction is clearly controlled by one member.	One works toward group goal but the other contributes only occasionally. Opinion and knowledge of group members do not receive equal attention. There is a clear difference in the amount of contribution.	One works toward group goal but the other contributes only when prompted. Only the dominant member's opinion is valued; or the other member is disinterested. One member largely dominates the conversation.	Both learners show no evidence of working with partners. Both learners never pay attention or respond to each other. Both learners demonstrate no evidence of ability to provide feedback to each other.
Task completion	Both complete task with excellent ideas relevant to topic. (see "task completion requirements" below) Good use of	Both complete the task with valid ideas relevant to topic. Sufficient number of ideas but may lack elaboration or	Both complete part of the task with ideas relevant to topic, but with an insufficient number. Some ideas lack elaboration or specificity.	Both complete part of the task with only a few ideas relevant to topic. Ideas are limited and lack elaboration or specificity. Unclear connection	Unable to complete the task; few or no required elements are present Responses are inappropriate; overall task outcome is not comprehensible

	examples to illustrate idea. Ideas are exceptionally well developed and coherent; relationship between ideas is clear.	specificity. Relationships between ideas may not be immediately clear.	Connections of ideas may not always be clear.	between ideas.	
Style	Variety of expressions for emphasizing points, giving opinions, agreeing, disagreeing, and building on other member's idea. Shows appropriate use of the expressions and vocabulary. Exhibits a fairly high degree of automaticity. Some errors are noticeable but do not obscure meaning.	A few expressions for emphasizing points, giving opinions, agreeing, and disagreeing, and building on other member's idea. Show fairly automatic and effective use of the expression and vocabulary.	Demonstrate limited range and control of expressions for emphasizing points, giving opinions, agreeing, and disagreeing, and building on other member's idea. May rely on one or two general expressions. Show difficulty using the more complex expression and can be inappropriate at times.	Demonstrate a very limited range of expressions for emphasizing points, giving opinions, agreeing, and disagreeing, and building on other member's ideas. Rely heavily on one or two general expressions. Show limited use of the more complex and specific expressions.	No use of more complex and specific expressions for emphasizing points, giving opinions, agreeing, disagreeing, and building on other member's ideas.

Task completion requirements: Have to discuss opinion of monitoring in the workplace and come to an agreement.

Version B

	Collaboration	Task completion	Style
5	Both learners often • Work together on almost all parts of the task. • Carefully respond to each other and engage each other's ideas. • Offer constructive feedback.	• Excellent completion of the task; all required elements of the task are present • Content is rich; ideas developed with elaboration and detail; overall task outcome is outstanding	• Excellent skills as a discussion leader • Have excellent skills in using transition words • Have excellent skills in asking for partner's opinion
4	Both learners usually • Work together on most parts of the tasks • Respond to each other and engage each other's ideas • Offer feedback.	• Good completion of the task; almost all required elements are present • Responses appropriate and with some elaboration and detail; overall task outcome is satisfactory	• Good skills as a discussion leader • Have good skills in using transition words • Have good skills in asking for partner's opinion
3	• Some engagement in the interaction but only one student generally leads participation during tasks • Sometimes the learners ignore each other's responses. • Both learners or one learner sometimes do/does not offer any feedback.	• Acceptable completion of the task; some required elements are missing • Responses mostly appropriate and adequately developed; overall task outcome is acceptable	• Adequate skills as a discussion leader • Have adequate skills in using transition words • Have adequate skills in asking for partner's opinion
2	• One learner always takes the lead in discussion during tasks or neither of them often try to engage in tasks • Both learners often ignore each other's responses and have high level of disagreements and inability to reach consensus; only claim own opinion. • Both learners provide very little feedback to each other.	• Partial completion of the task; many required elements are missing • Responses appropriate yet undeveloped; only basic ideas expressed without any elaboration or detail; overall task outcome is poor	• Have some skills as a discussion leader • Have difficulties in using transition words • Have difficulties in asking for partner's opinion
1	• Bother learners show no evidence of working with partners • Both learners pay little attention or barely respond to each other	• Unable to complete the task; few required elements are present • Responses are inappropriate; overall task	• Difficulty leading discussion • Have few or no skills in using transition words

• Both learners demonstrate no evidence of ability to provide feedback to each other.	outcome is not comprehensible	• Have few or no skills in asking for partner's opinion

Crime and economy (task # 25)
Level: 3
Task versions: 1
Administration time: SP10wk9
Planning time: 1 minute
Planning type: Individual
Task completion time: 3 minutes
Rubric types: 1

Task
Scenario: You and your partner are taking Sociology at NAU. Your assignment is to find two different statistical reports on the relationship between crime rates and economy. You and your partner have chosen two different reports.

You have one minute to individually prepare your own ideas before discussing it with your partner. You have three minutes to complete this task with your partner.

Directions:
Step 1: In pairs, explain what your report presents.
Step 2: Based on the amount of information that each report includes, choose one report that you would like to present to the class. Make sure to discuss why you would like to choose one report over the other.
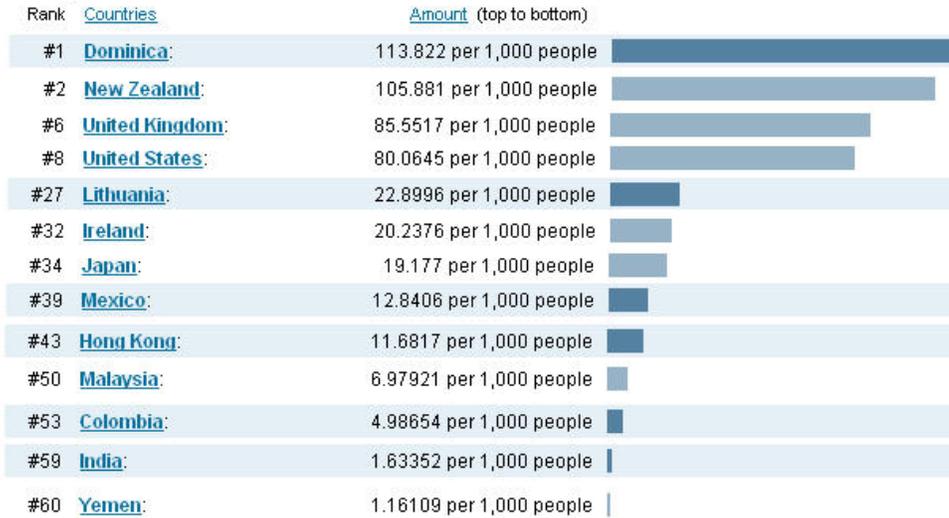Step 3: Discuss two possible reasons for crime rates.

Student A
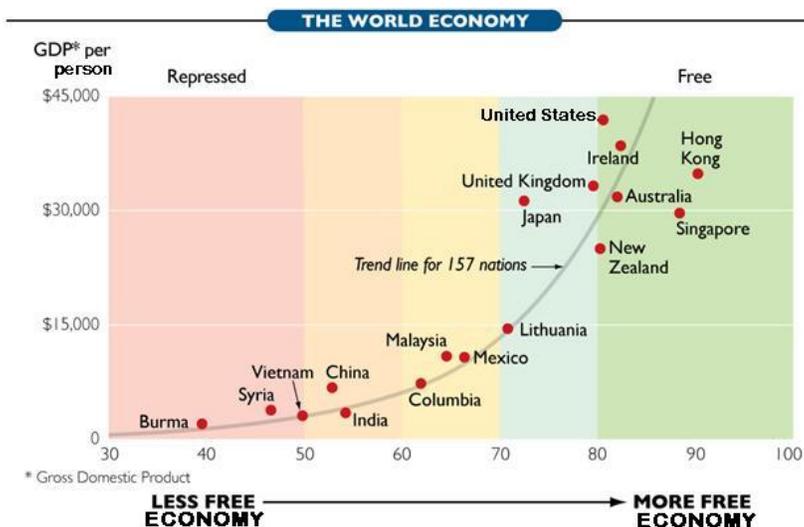
Student B

Crime Rates per Capita by Country

Rank	Countries	Amount (top to bottom)
#1	Dominica:	113.822 per 1,000 people
#2	New Zealand:	105.881 per 1,000 people
#6	United Kingdom:	85.5517 per 1,000 people
#8	United States:	80.0645 per 1,000 people
#27	Lithuania:	22.8996 per 1,000 people
#32	Ireland:	20.2376 per 1,000 people
#34	Japan:	19.177 per 1,000 people
#39	Mexico:	12.8406 per 1,000 people
#43	Hong Kong:	11.6817 per 1,000 people
#50	Malaysia:	6.97921 per 1,000 people
#53	Colombia:	4.98654 per 1,000 people
#59	India:	1.63352 per 1,000 people
#60	Yemen:	1.16109 per 1,000 people

Rubric

	4	3	2	1	0
Collaboration	Both consistently and actively work toward group goals. Value the knowledge, opinion and skills of group members and encourage contribution. The amount of contribution is fairly equal.	Both work toward group goals without prompting. Value the knowledge, opinion and skills of group members. The amount of contribution is fairly equal but turn is clearly	One works toward group goal but the other contributes occasionally. Opinion and knowledge of group members do not receive equal attention. There is a clear difference in the amount	One works toward group goal but the other contributes only when prompted. Only the dominant member's opinion is valued; or the other member is disinterested. One member largely dominates	Both learners show no evidence of working with partners. Both learners never pay attention or respond to each other. Both learners demonstrate no evidence of ability to

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		controlled by one member.	of contribution.	the conversation.	provide feedback to each other.
Task completion	Both complete task with excellent ideas relevant to topic. Good use of examples to illustrate idea. Ideas are exceptionally well developed and coherent; relationship between ideas is clear.	Both complete the task with valid ideas relevant to topic. Sufficient number of ideas but may lack elaboration or specificity. Relationships between ideas may not be immediately clear.	One or both complete part of the task with ideas relevant to topic, but with an insufficient number. Some ideas lack elaboration or specificity. Connections of ideas may not always be clear.	Both complete part of the task with only a few ideas relevant to topic. Ideas are limited and lack elaboration or specificity. Unclear connection between ideas.	Unable to complete the task; few or no required elements are present Responses are inappropriate; overall task outcome is not comprehensible
Style	Both demonstrate use of a variety of expressions for giving opinions, agreeing, disagreeing, and building on other member's idea. Shows appropriate use of the expressions and vocabulary. Exhibits a fairly high degree of automaticity. Some errors	Both demonstrate use of a few expressions for giving opinions, agreeing, and disagreeing, and building on other member's idea. Show fairly automatic and effective use of the expression and vocabulary.	One or both demonstrates limited range and control of expressions for giving opinions, agreeing, and disagreeing, and building on other member's idea. May rely on one or two general expressions. Show difficulty using the more	Both demonstrate a very limited range of expressions for giving opinions, agreeing, and disagreeing, and building on other member's ideas. Rely heavily on one or two general expressions. Show limited use of the more complex and	No use of more complex and specific expressions for giving opinions, agreeing, disagreeing, and building on other member's ideas.

	are noticeable but do not obscure meaning.		complex expression and can be inappropriate at times.	specific expressions.	

Results Tables of Pearson's and Spearman's Tests for the Relationship between L2 Pair

Interactivity and Linguistics Features

Table B1

Correlation results between Interactivity and linguistic features using Spearman's Test

Feature	r	P	Feature	r	P
Backchannelling	.244**	<.001	All modals	-0.024	0.515
Response form	.545**	<.001	All conjunctions	-0.07	0.052
Private verb	.103**	0.004	All adjectives	.072*	0.047
That deletion	0.009	0.804			
Contraction	.186**	<.001	Verb *have*	0.008	0.833
Present tense verb	0.063	0.083	All verbs	-0.043	0.233
Second person pronoun	.351**	<.001	Communication verb in other	-0.002	0.951
Pro-verb *do*	0.015	0.676	Attitudinal verb in other contexts	0.038	0.287
Demonstrative pronoun	.115**	0.001	Factive verb in other contexts	.086*	0.017
Emphatic	.088*	0.014	Likelihood verb in other contexts	0.051	0.161
First person pronoun	.153**	<.001	Predicative attitudinal adjective	-0.007	0.845
Pronoun *it*	.186**	<.001	Attitudinal adjective in other contexts	.147**	<.001
Subordinating conjunction - causative	-0.069	0.057	Epistemic adjectives in other contexts	.108**	0.003
Discourse particle	.321**	<.001	Indefinite article	-0.056	0.12
Nominal pronoun	-0.008	0.819	Definite articles	-.138**	<.001
Amplifrier	-0.003	0.925	Common noun	-.286**	<.001
Wh-question	.422**	<.001	Proper noun	-0.057	0.113
Possibility modal	-0.041	0.251	Pre-modifying noun	-.130**	<.001
Coordinating conjunction	0.044	0.224	*That* complement clause verb of likelihood	-0.048	0.182

Feature	r	P	Feature	r	P
All nouns	-.354**	<.001	Stance *that* complement clauses controlled by verbs	0.011	0.765
Prepetition	-.139**	<.001	Stance *that* complement clauses	0.002	0.953
Attributive adjective	-0.069	0.057	Stance *to* complement clauses controlled by verbs	-0.038	0.296
Past tense verb	-0.034	0.342	Stance *to* complement clauses	-0.053	0.144
Third person pronoun	-.186**	<.001	Stance adverbs	-0.048	0.179
Perfect aspect verb	-.101**	0.005	Human noun	-.193**	<.001
Public verb	0.049	0.17	Place noun	-.144**	<.001
Nominalization	-.121**	<.001	Attributive adjectives--evaluative	0.013	0.712
Adverb	0.019	0.595	Activity verb	-0.044	0.221
Infinitive	-.144**	<.001	Communication verb	0.067	0.062
Prediction modal	0.058	0.105	Type/token ratio	0.044	0.225
Necessity modal	-0.025	0.49	Word length	-.326**	<.001
Predicative adjective	.075*	0.036	Word count	.113**	0.002
Mental verb	.076*	0.034	Hesitator *uh*	-.286**	<.001

Table B2

Correlation results between Interactivity and linguistic features using Pearson's Test

Feature	r	P	Feature	r	P
Backchanneling	.192**	<.001	All modals	0	0.994
Response form	.523**	<.001	All conjunctions	-.087*	0.016
Private verb	.098**	0.007	All adjectives	0.05	0.163
That deletion	0.011	0.769			
Contraction	.153**	<.001	Verb *have*	0.015	0.671
Present tense verb	0.049	0.173	All verb	-0.042	0.245

Second person pronoun	.305**	<.001	Communication verb in other	0.016	0.65
Pro-verb *do*	-0.03	0.408	Attitudinal verb in other contexts	0.066	0.069
Demonstrative pronoun	.135**	<.001	Factive verb in other contexts	.074*	0.041
Emphatic	0.068	0.061	Likelihood verb in other contexts	0.06	0.094
First person pronoun	.158**	<.001	Predicative attitudinal adjectives	-0.029	0.423
Pronoun *it*	.170**	<.001	Attitudinal adjective in other contexts	.143**	<.001
Subordinating conjunction - causative	-.101**	0.005	Epistemic adjectives in other contexts	.120**	<.001
Discourse particle	.303**	<.001	Indefinite article	-0.066	0.067
Nominal pronoun	-0.011	0.758	Definite article	-.140**	<.001
Amplifier	0.037	0.306	Common noun	-.264**	<.001
Wh-question	.400**	<.001	Proper noun	-0.067	0.062
Possibility Modal	-0.034	0.343	Pre-modifying noun	-.152**	<.001
Coordinating conjunction – clausal connector	0	0.993	*That* complement clause verb of likelihood	-0.04	0.269
All nouns	-.315**	<.001	Stance *that* complement clauses controlled by verbs	0.01	0.783
Preposition	-.103**	0.004	Stance *that* complement clauses	0.003	0.925
Attributive adjective	-.072*	0.045	Stance *to* complement clauses controlled by verbs	-0.052	0.15
Past tense verb	-.076*	0.035	Stance *to* complement clauses	-0.059	0.103
Third person pronoun	-.172**	<.001	Stance adverbs	-0.04	0.263
Perfect aspect verb	-.123**	<.001	Human noun	-.134**	<.001
Public verb	0.048	0.179	Place noun	-.107**	0.003
Nominalization	-.096**	0.008	Attributive adjectives-- evaluative	-0.009	0.813
Adverb	-0.005	0.887	Activity verb	-0.061	0.091
Infinitive	-.160**	<.001	Communication verb	0.061	0.092
Prediction modal	.077*	0.034	Type/token ratio	0.048	0.182
Necessity modal	-0.048	0.18	Word length	-.303**	<.001
Predicative adjective	0.013	0.729	Word count	.136**	<.001

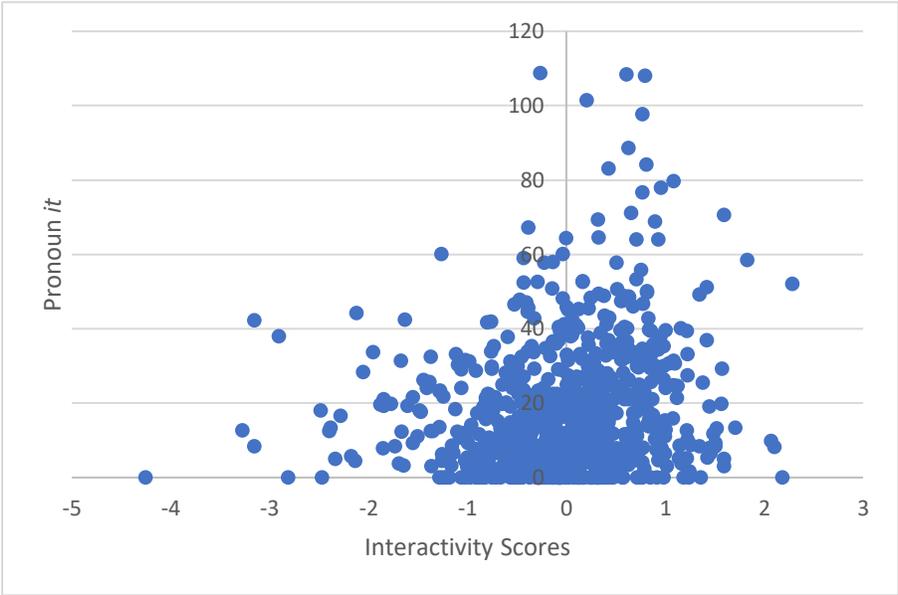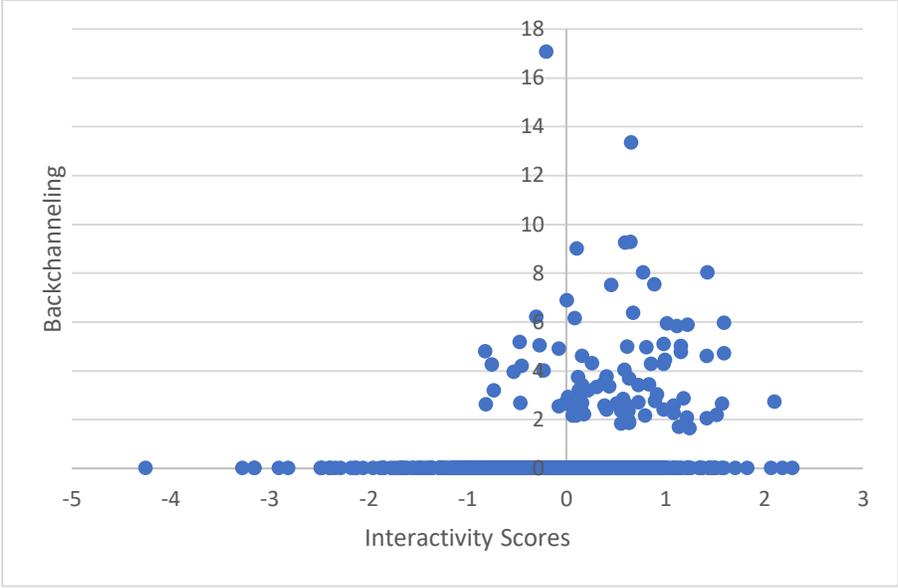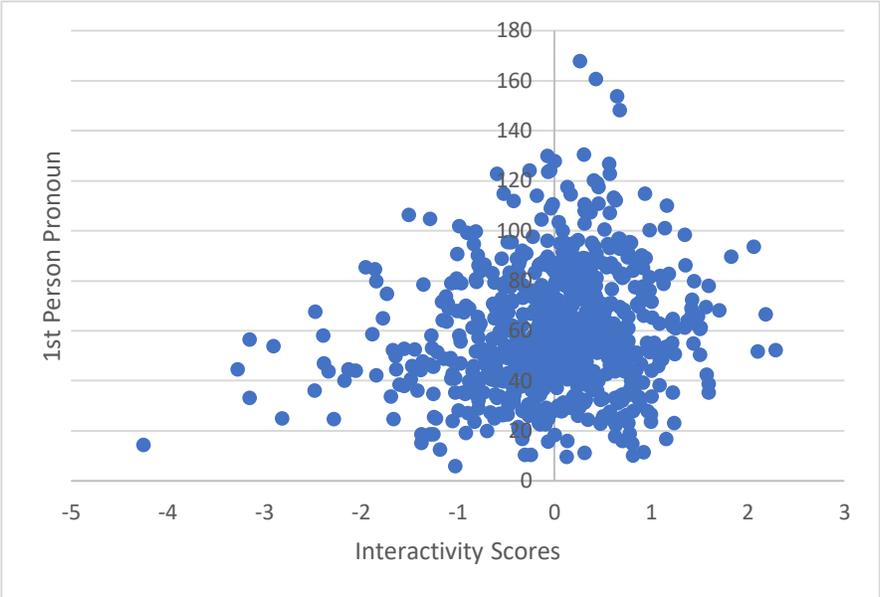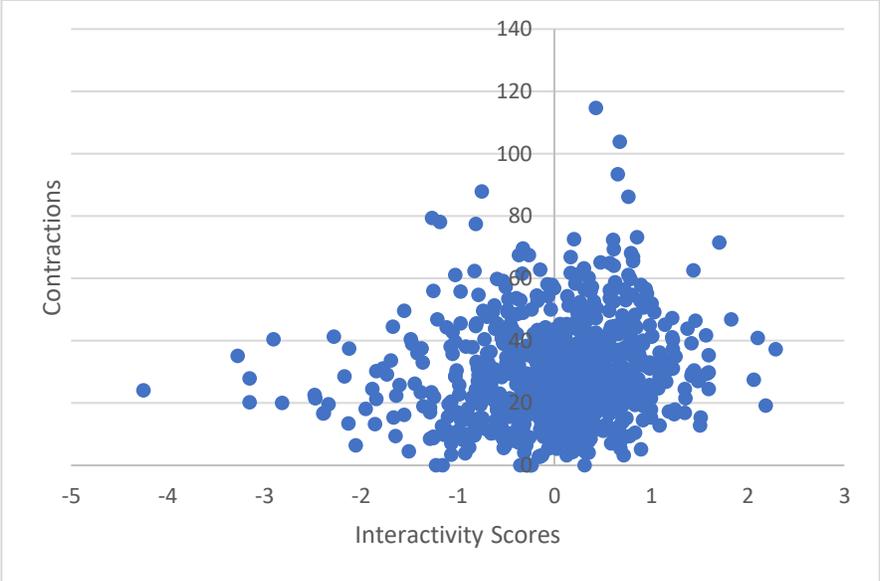| Mental verb	0.051	0.154	Hesitator *uh*	-.277**	<.001

Appendix C

Scatter plots illustrating the negative and positive relationships between the lexico-grammatical features and pairs' interactivity levels
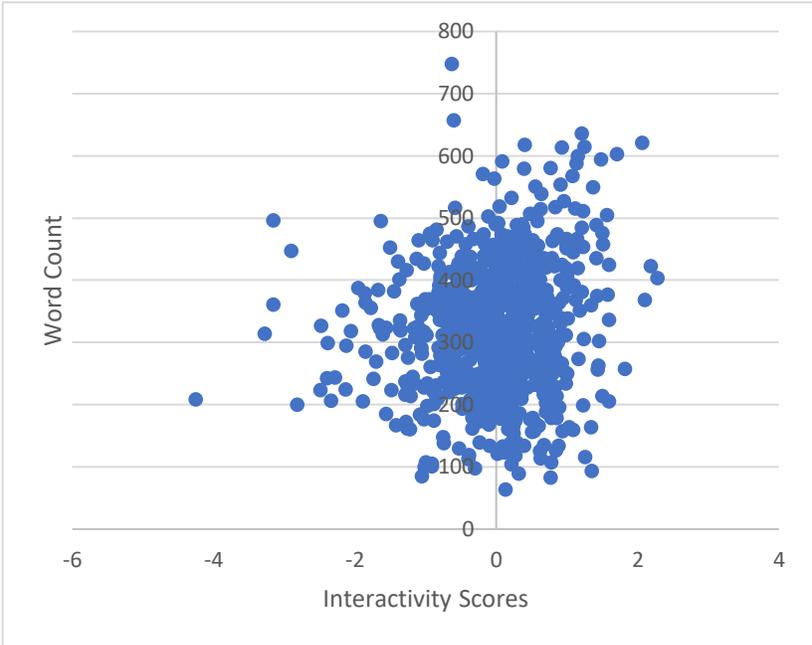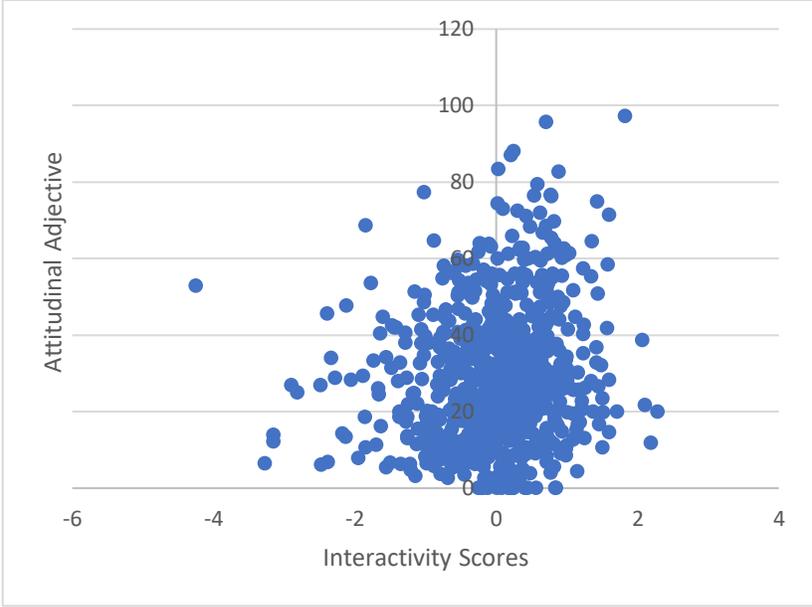
1) Scatter plots illustrating the positive associations between L2 pairs' interactivity and their use of linguistic features
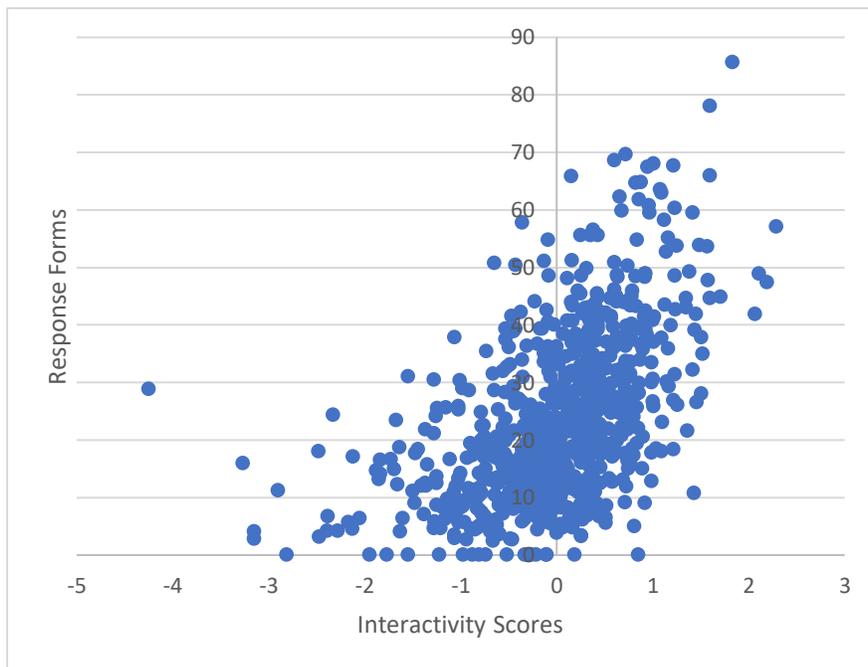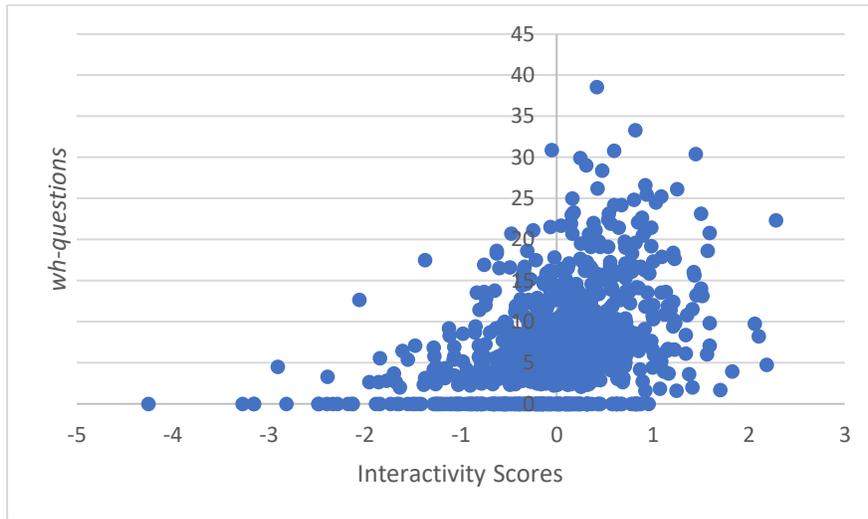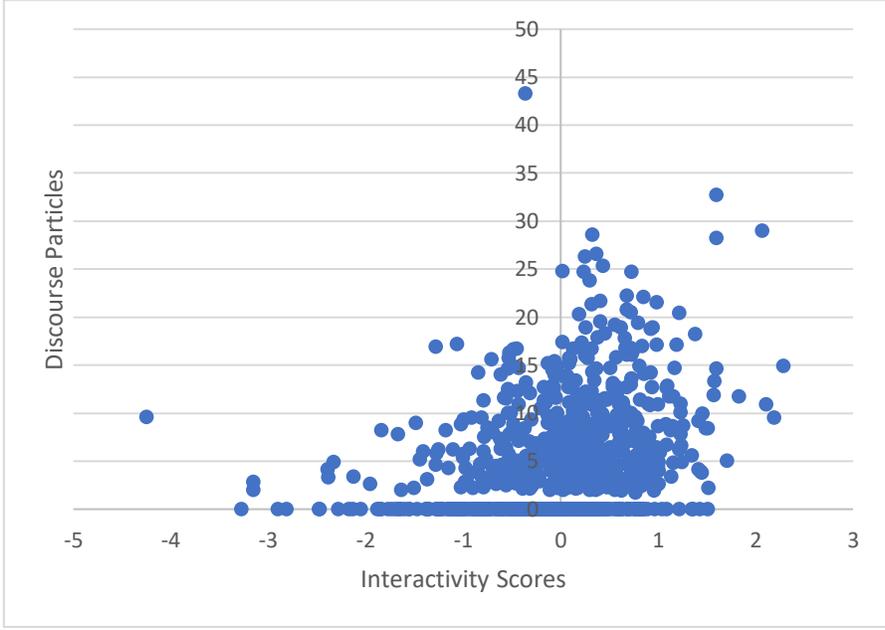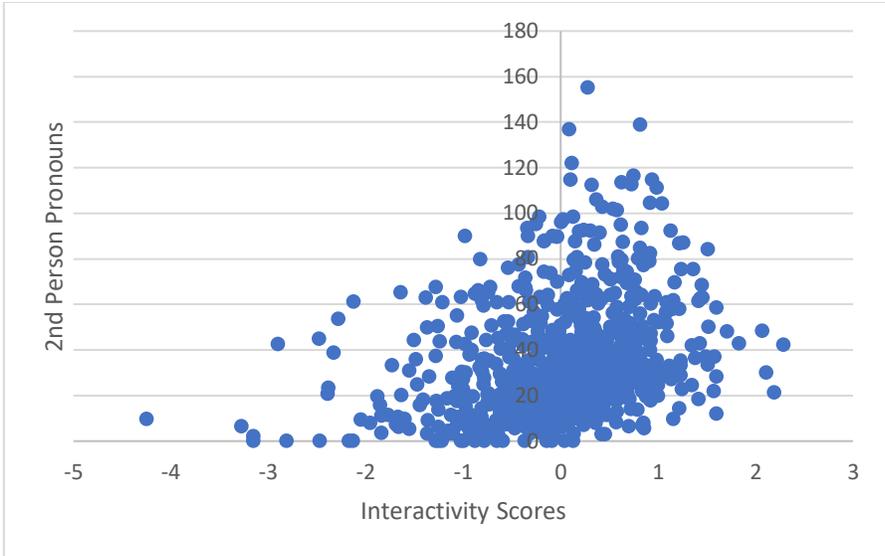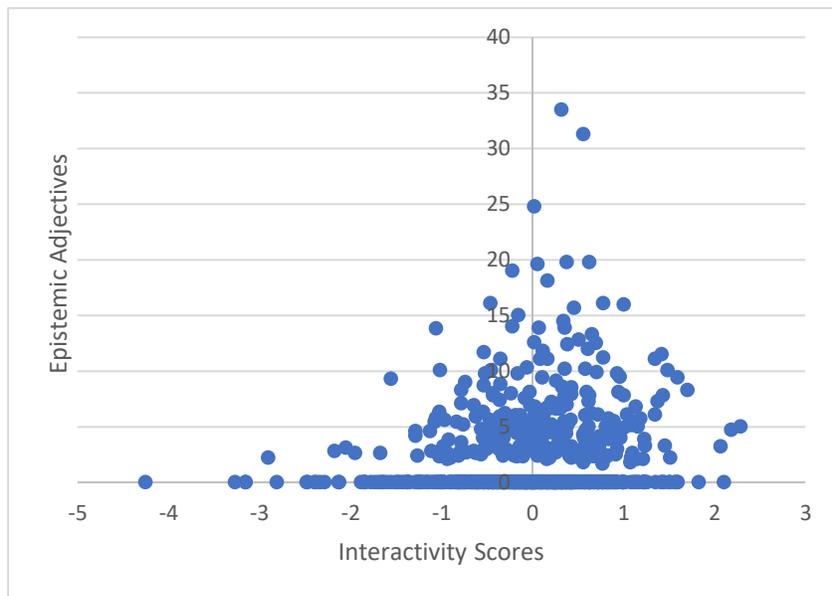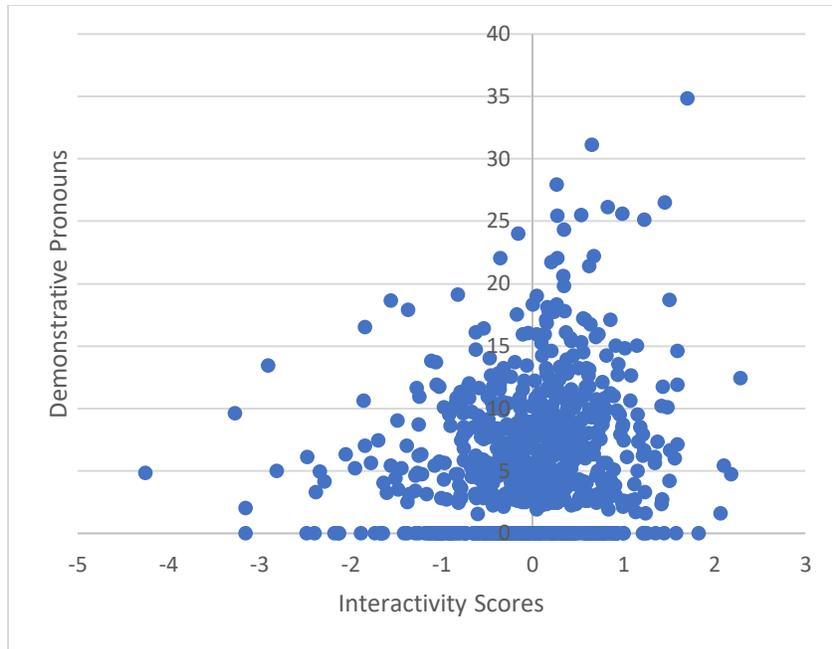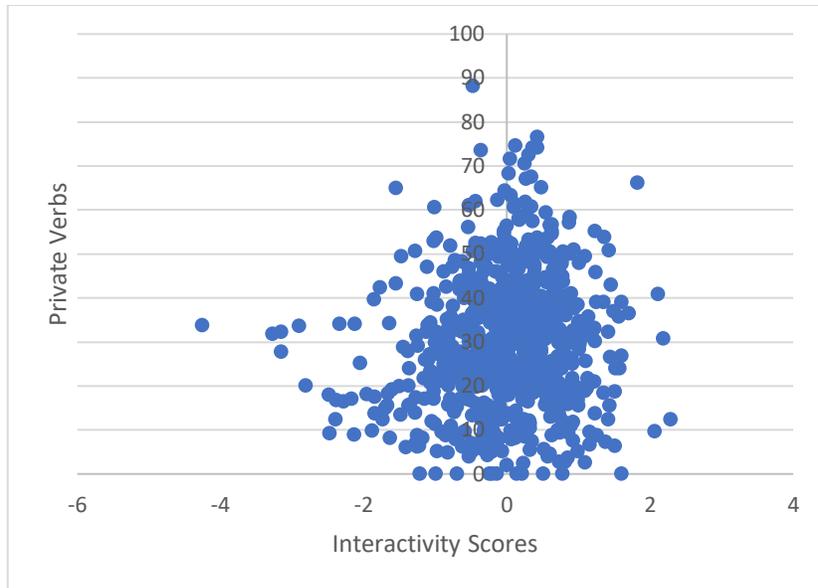
2) Scatter plots illustrating the negative associations between L2 pairs' interactivity and their use of linguistic features