

## THE IMPACT OF INTERACTION ON SECOND-LANGUAGE ACQUISITION AND LISTENING

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**Abstract:** *The interaction hypothesis of second-language acquisition states that the development of language proficiency can be facilitated by face-to-face interaction and communication between native speakers of the language and language learners. This paper examines the relationship between interaction and listening of learners in the second language classroom. The study compared the comprehension of 8 non-native English speakers in a Ghanaian junior high school on directions to a listening comprehension task presented by a proficient speaker of English. The learners were divided into one experimental group and one control group and compared under two input conditions: pre-modified input, in which the proficient speaker presents the tasks using language that has been modified by decreased complexity, increased quantity, and redundancy; and interactionally modified input, in which the tasks are presented using language that had not been pre-modified but had enough opportunities for interaction with the proficient speaker. The study found that repeating and rephrasing the language to explain the directions during interaction resulted in increased comprehension. The study's findings support longstanding claims about the importance of interaction in promoting second-language listening comprehension. These findings also provide recommendations for reorganizing classroom interaction to meet learners' needs for comprehensible input.*

**Keywords:** *interaction; second-language listening; comprehensible input; experimental group; control group*

### 1. Introduction

If one wants to socialize and function effectively and efficiently in life, one's command of language skills is essential (Owusu et al., 2015:466). This function of language is crucial for the second language learner in the Ghanaian context since

English, the official language of the government, business, education, media, and legislature, is a core subject in which every learner is expected to excel. Therefore, learners are supposed to increase efforts in learning this language to meet the demands of authorities in the formal sector. Because of this, conducting frequent scientific studies in this field is welcomed and necessary.

Until the late 20<sup>th</sup> century, it had long been held by second language teachers and researchers that simple exposure to a language could facilitate its acquisition. This idea stemmed from observing children who grow up immersed in environments where a language is spoken. In the second half of the 20<sup>th</sup> century, the works of some scholars (i.e. Krashen, 1982; Long, 1981, Swain, 1985, and Long, 1996) claimed that the exposure of learners to a target language is not a sufficient condition for second language acquisition.

In classical second language studies, the Input Hypothesis argues that the learner must comprehend input if it is to facilitate the acquisition of the target language (Krashen, 1980). Such input is what Krashen termed as Comprehensible Input. Understanding spoken and written language is what the Input Hypothesis sees as the only mechanism that results in linguistic competence. Since then, several studies have focused on what makes input comprehensible. Long's interaction hypothesis (1985, 1996) argues that interaction facilitates acquisition because of the conversational and linguistic modifications that speakers make to their language in such discourse and that provide learners with the input they need. Thus, native speakers of languages modify their speech by making it simpler for non-natives to understand (Long, 1985, 1996). Pica's work suggests that modifications are made to input through interaction. This input becomes interactionally modified input. Pica (1987) also argues that this form of input aids comprehension more than input modified beforehand.

In Ghana, English is the language of instruction from upper primary onwards. Therefore, students must be able to comprehend the content of their lessons and their teachers' instructions, especially in the language classroom since comprehension is an important step in language acquisition.

However, most language classrooms in Ghana do not have native speakers of English (i.e. British, American, Canadian, etc.). That notwithstanding, several classrooms have fluent English language teachers who can use the language with native-like proficiency. So, a thorough investigation of the role of interaction in listening comprehension for students in Ghana is needed. Knowledge of the proper conditions under which comprehension is successful will provide guidelines for restructuring interaction in the classroom to serve learners' needs for comprehensible input. Consequently, the objectives of the study were to:

- I. examine the effects of interactionally modified input on the listening comprehension of non-native speakers of English.
- II. investigate the kinds of modifications that are made to input during interaction.

### **1.1 Hypothesis**

The hypothesis was formulated to answer the research questions: (1) "Does interaction assist in the comprehension of the target language?" (2) "How does interactionally modified input differ from premodified input?" This hypothesis was that the subjects in Condition 2 (i.e., interactionally modified input group) of research question 1 would show greater comprehension of the directions than

those in Condition 1 (i.e., premodified input group). From this major hypothesis, three minor experimental hypotheses were formulated.

1. The mean score for selecting the correct item on the task would be higher for subjects in Condition 2 than for those in Condition 1.
2. The mean score for placing the item in the correct position on the board would also be higher for subjects in Condition 2 than for those in Condition 1.
3. The mean total score for selection and placement on the task would be higher for subjects in Condition 2 than for those in Condition 1.

## **2. Review of Literature**

### **2.1 The Role of Input in Second Language Acquisition**

The role input plays in second language acquisition first received widespread attention in the 1970s and 1980s. It was around this period that Stephen Krashen propounded the Input Hypothesis. Krashen's most notable claim is that learners progress in their knowledge of the language when they comprehend language input that is slightly more advanced than their current level (Krashen, 1977). Krashen (2003) called this level of input "i+1", where "i" is the learner's interlanguage and "+1" is the next stage of language acquisition. According to him, this form of input is called comprehensible input. With this knowledge, Krashen and Terrell (1983) devised an approach to teaching language that focused on providing the learner with substantial amounts of comprehensible input through games and dialogues. The Natural Approach requires interaction between teachers and students and among students for many of its activities.

The Input Hypothesis was later refined as the Optimal Input Hypothesis (Krashen, 2020). In this hypothesis, input is not merely comprehensible but also optimal. In addition to comprehensibility, optimal input has three other characteristics. Firstly, it is interesting. As Mason and Krashen (1982) put it, it is "so interesting that you temporarily forget that you are listening to or reading in another language" (Mason & Krashen, 2020, p. 1). Secondly, it is rich in language; which means that the language supports the reader in understanding new aspects of the language. And lastly, it must be abundant, thereby providing new opportunities for acquiring a new language.

The relation between input and interaction for language has been further studied. A study by Rowe and Snow (2020) showed that input best facilitates language acquisition when it is interactive. Zhang (2009) argues that input, interaction, and output are three related concepts that facilitate the development of oral fluency.

This study holds those one or more of these three factors, when missing, account for the inability of many Chinese learners of English to speak the language fluently. Shin (2020) also suggests a close connection between the language children are exposed to (input) and how this is related to their acquisition of certain grammatical structures in Korean.

With this, it is evident that input plays an important role in the acquisition of linguistic competence.

### **2.2 The Interaction Hypothesis**

The Interaction Hypothesis (IH) has been referred to as the input, interaction, and output model (Block, 2003). Various writers have given IH different nomenclatures. For example, it is known as the interaction theory by Carroll (1999), the oral

interaction hypothesis by Ellis (1991), and the interaction approach by Gass and Mackey (2007). However, Michael Long first proposed IH in his book "Input, Interaction, and Second Language Acquisition" (Long, 1981). The hypothesis posits that languages are acquired by interacting with speakers of those target languages (Linton, 2023). The hypothesis makes two main claims; that comprehensible input is required for second language acquisition; and that comprehensible input is the result of negotiations for meaning in conversations (Linton 2023). Comprehensible input, therefore, is a result of modified interaction. Modified interaction refers to the various modifications that native speakers and other more knowledgeable users of the language (such as teachers) create to render their input comprehensible to learners. Native speakers often slow down their speech to second language users, quite like adults do to children.

Ellis (1991) indicates that the original hypothesis as proposed by Long (1985) advances two main claims about the role of interaction in second language acquisition:

1. Comprehensible input is necessary for second language acquisition.
2. Modifications to the interactional structure of conversations taking place in the process of negotiating a communication problem help to make input comprehensible to a second language learner.

### **2.3 Interaction in Second Language Acquisition**

The impact of conversational interaction on learning has been discussed in academic circles for nearly a century. Vygotsky (1978) theorized that through informal and formal conversations, adults convey how their culture interprets and responds to the world. In his Sociocultural Theory of Mind (Vygotsky, 1978), he postulates interaction as the causative condition for SLA, as well as for other areas of learning. The theories of Vygotsky convincingly demonstrated the importance of interaction for Second Language Acquisition and were widely used by other scholars in SLA studies. Many of his findings have influenced interactionist research to date. One aspect of his theory of cognitive learning is the idea that language is used to generate and test hypotheses and that cognitive activity will be apparent in dialogue (Swain & Lapkin, 1998). This concept is used by Swain and Lapkin (1998) in support of their assertion that dialogue is both a means of communication and a cognitive tool. The student participants in this study worked out a storyline and wrote it out during the task. As they did so, they encountered linguistic problems. To solve them, the students used their first language (L1) and second language (L2) to communicate with each other and as tools to aid their L2 learning.

In a study on question formation in ESL, Mackey (1999) examined the relationship between different types of conversational interaction and SLA. In this study, adult ESL learners of various L1 backgrounds participated in task-based interaction to increase their ability to form questions in English. The results of this study supported claims concerning a link between interaction and grammatical development. Brown (2007) points out that the interpersonal context where a learner operates takes on great significance, so the interaction between learners and others should be the focus of observation and explanation. Therefore, it comes as no surprise that interaction led to such development. Similar studies have shown a link between interaction and lexical acquisition (Ellis et al., 1994), and production (Gass & Varonis, 1994).

## **2.4 The Role of Interaction in Listening Comprehension**

Perhaps the most prominent research done on the role of interaction in listening comprehension is that of Pica *et al.* (1987). This study tested the listening comprehension of adult learners of European and Asian first language backgrounds in low-intermediate ESL classes under the two input conditions of premodified input and interactionally modified input.

This study described two types of linguistic environments in which the interaction promotes comprehension. Pica *et al.*, (1987) proposed that there is one environment in which input is modified for the learner's comprehension. This is mostly in instructional settings. In these settings, what is provided is premodified input. Then there is an environment in which both conversation participants modify their output as found in naturalistic settings. The second environment was found to be most productive for comprehension as the input found in this environment is modified through interaction.

This study also found that NS-NNS interactional modifications in the form of comprehension and confirmation checks and clarification requests served as a mechanism for NS modification of input, either by encoding or, more frequently, by triggering repetition and rephrasing of input content, and thus played a critical role in comprehension. A similar study is needed to investigate the kinds of environment needed for optimal listening comprehension among Ghanaian basic school learners of English.

## **3. Methodology**

### **3.1 Research Design**

This quantitative study was chosen to test the hypotheses already presented in this study. It would help in describing numerically the full impact of interaction on listening comprehension. The design used in this study is experimental. This design was chosen to establish causation between the two variables of interaction and listening comprehension. The interaction was the manipulated variable. The study was cross-sectional as data was collected at one point in time, specifically two days on the 6<sup>th</sup> and 7<sup>th</sup> of April, 2024. The subjects were divided into two groups: a control group and an experimental group. The subjects carried out a listening comprehension task. This task was planned to be a good measure of comprehension and provide an appropriate context for interaction. For this reason, a communication game often used in English as a Second Language teaching was employed.

The task required the non-native speakers (NNSs) to listen to a proficient speaker (for convenience, the proficient speaker will be abbreviated as NS). The NS gave directions for choosing and placing 10 items on a small board illustrated with an outdoor scenery. The individual items were two-dimensional cutouts, representing a variety of plant, animal, and human figures, each of which shared at least one feature, such as shape, colour, or size with one other item. The board itself was illustrated with scenery, including figures similar to those on the cutouts, as well as landmarks, such as a pond, patches of grass, a skyline, roads, vehicles, and other objects.

Each direction the NS gave included a description of the cutout to be picked and a

further description of the place on the board where it was to be placed. Comprehension was measured by the number of items the subject selected and placed correctly. One point was given for correct selection and one point for correct placement. The interactions were recorded on audio, and transcriptions were made from the recordings.

Two versions of the directions to the task were developed: a baseline version and a linguistically modified version. The baseline version was linguistically unmodified. This means that the directions were compiled from a recording of the interaction of two proficient speakers on the same task. The baseline version was then modified to produce the linguistically modified version by reducing the complexity of the language, increasing the number of words per direction, and increasing the repetition of content words per direction. This ensured that both the linguistically modified and baseline versions had similar content but differed only in quantity, redundancy, and complexity. Table 1 gives examples of the modifications made to the baseline version, as used by Pica et al. (1987).

**Table 1:** Examples of Modification of Selected Linguistic Features in Input Directions

<b>Complexity</b>	
Baseline	[In the center of the crossroads, [right where the three meet,] put the dog in the carriage.]
Modified	[Put the dog in the middle of the three roads.]
<b>Quantity</b>	
Baseline	Moving to the top right corner, place the two mushrooms with the three yellow dots in that grass patch, down toward the road. (23 words)
Modified	Move to the top right corner. Take the two mushrooms with the three yellow dots. Put the two mushrooms on the grass. Put the two mushrooms on the grass near the road. (32 words)
<b>Redundancy</b>	
Baseline	Place the two mushrooms with the three yellow dots in that grass patch, down toward the road. (no repetition)
Modified	Take the two mushrooms with the three yellow dots. Put the two mushrooms on the grass. Put the two mushrooms on the grass near the road. (3 repetitions)

Source: *Field Data, 2024*

The task was pretested to ensure that it was a reliable measure of listening comprehension. The linguistically modified directions were tested on 4 proficient speakers of English who demonstrated 100% accuracy on all items.

### 3.2 Population, Sample, and Sampling Procedure

The study's target group was basic school English learners, and non-native

speakers of English were preferred. The pupils of Abuontem M/A Junior High School in the Mampong Municipality of the Ashanti Region were chosen for the study. The school has three classes at the JHS level: B7, B8, and B9 (A and B), and a population of 113 pupils. The purposive sampling method was used to select the B9 (A) pupils, with a total population of 17 pupils.

It was necessary to find subjects with low intermediate fluency in English as more proficient subjects would pass the listening comprehension test without needing interaction. A short reading comprehension test was, therefore, administered. Subjects (participants) who scored less than 40% on this test were determined to be speakers of low-intermediate fluency. Unfortunately, all 17 pupils (from the B9 [A] class) of such speakers were found. From this number, a sample size of 8 (50%) (i.e. 5 females and 3 males) was selected using a simple random sampling method. The decision was to select 8 low-intermediate fluent participants because this pilot study was to test the feasibility and effectiveness of the selected intervention (control and experimental) (Lancaster et al., 2004). Thus, this study is the onset of a series of comprehensive studies that would involve (1) all the pupils in B9 (A and B) who have both high and low intermediate fluency in English, and (2) selected participants (subjects) from B7 and B8 of the same school. Again, this limited sample size method aligns with Junqueira and Payant (2015) where the views and procedures of an L2 MA TESOL student-teacher were investigated in the study.

#### 4. Analysis and Discussion

##### 4.1 The Hypothesis

The study's major hypothesis was strongly supported by the results, as shown in Table 2 below.

**Table 2:** Comparison of Mean Comprehension Scores of Subjects in the Two Experimental Conditions

Subjects	Mean selection score		Mean placement score	Mean score combined		
Condition 1: premodified	73%	7.25	63%	6.00	68%	13.25
Condition 2: interactionally modified	85%	8.50	80%	8.00	82.5%	16.50
Difference between Conditions 1 & 2	12%	1.25	23%	2.00	18%	3.25
<i>T</i>	-2.23		-3.45	-2.84		

Source: Field Data, 2024

From Table 2, the null hypothesis is rejected; and the *p* for the mean combined score is 0.0296. This is statistically significant, meaning that interactionally modified input leads to better comprehension and performance than premodified input. From the study, the selection score CI is (-0.535,3.035). While the placement score is

CI: (0.154,3.846), the combined score CI: (-0.391,6.891). The interpretation is that for the selection scores, the CI includes 0, meaning the difference may not be statistically significant. The CI does not include 0 for the placement scores, supporting statistical significance. However, for combined scores, the CI slightly includes 0, suggesting marginal significance. So, the final confidence interval for the combined scores is (-0.391,6.891). This shows improvement in the interactionally modified condition, but the result is weaker than for placement scores alone.

Therefore, the results obtained from Table 2, support the first minor hypothesis; the mean score for selecting the correct item on the task would be higher for subjects in Condition 2 than for those in Condition 1. This is to say that the subjects who received interactionally modified input scored higher than those who received pre-modified input in selecting the correct item, with a percentage difference of 12%. The mean scores of both groups showed a *t*-statistic of -2.23, suggesting that there is evidence to support the idea that the two groups have different average values. The second hypothesis was that the mean score for placing the item in the correct position on the board would also be higher for subjects in Condition 2 than for those in Condition 1. This hypothesis was also accepted. Subjects who received interactionally modified input scored 20% more in placement than subjects in the control. The *t*-statistic of -3.45 also suggests that the mean score of the experimental group (8.00) is higher than that of the control group (6.00). Finally, the third minor hypothesis of the study, the mean total score for selection and placement on the task, which would be higher for subjects in Condition 2 than for those in Condition 1, was also accepted. The experimental group scored 18% more than the control group. The *t*-statistic of their means was -2.84. This *t*-statistic indicates a significant difference between the means of the two groups being compared. The negative value suggests that the means of the control group (13.25) is significantly lower than the mean of the experimental group (16.50). With this, the hypothesis was accepted that the subjects in Condition 2 would show greater comprehension of the directions than the subjects in Condition 1.

#### 4.2 Differences Between Premodified Input And Interactionally Modified Input

The features of premodified input and interactionally modified input are described to answer the research question, how does interactionally modified input differ from premodified input? It is, therefore, necessary to compare the quantity, redundancy, and complexity of the directions in premodified input and interactionally modified input. This is done in Table 3 below.

**Table 3:** Comparisons of Mean Quantity, Redundancy, and Complexity in Baseline, Premodified, and Interactionally Modified Input

Input	Quantity	Redundancy	Complexity
Baseline	15.37	0.32	1.37
Condition 1: premodified input	31.77	7.13	1.04
Condition 2: interactionally modified input	47.65	16.03	1.00
Difference between Conditions 1 & 2	15.88	8.9	0.04

Source: Field Data, 2024



In Table 3, quantity was counted as the number of words per subject per direction. While the premodified input saw 16 more words added on average to the baseline version, the interactionally modified input added around 32 more words on average, significantly increasing the quantity. Redundancy was counted as the number of repetitions of content words (i.e. nouns, verbs, adjectives, adverbs) per subject per direction. The baseline version had very little redundancy (0.32) as in most conversations between native or proficient language speakers. This level of redundancy was increased by 7 more repetitions in the premodified input. However, the interactionally modified input saw an increase of about 9 words over the premodified input.

Complexity was more difficult to measure as the time and skills needed were unavailable to the researcher. However, a method used by Pica et al. (1987) measured complexity as the number of S-nodes/T-unit where s-node refers to a sentence in a phrase structure tree and t-unit refers to a main clause with all its dependent clauses and phrases. Using this measure in a few random sentences in the directions, it was evident that directions in the interactionally modified input had slightly less complexity than directions in the premodified input. These results may not be conclusive.

It is safe to say, however, that interactionally modified input has more quantity and redundancy than premodified input.

## **5. Conclusion**

### **5.1 Summary**

This study set out to investigate the impact of interaction on the listening comprehension of non-native speakers of English. Specifically, it sought to examine the effects of interactionally modified input on the listening comprehension of non-native speakers of English and to investigate the kinds of modifications that are made to input during interaction. With the aid of a listening comprehension task, an experiment was conducted to investigate the relation between two variables: interaction (the independent variable) and listening comprehension (the dependent variable). The sample used for this study consisted of 8 junior high school students with low intermediate proficiency in English.

The results of the study supported the hypothesis that the subjects in the experimental group would demonstrate greater comprehension of the directions given by the NS than subjects in the control group. In answering the first research question, "Does interaction assist in the comprehension of the target language?" the findings show that when provided interactionally modified input, subjects demonstrated greater comprehension of directions given by the NS. In answering the second research question, (i.e., "How does interactionally modified input differ from premodified input?"), the findings show that interactionally modified input possesses a higher number of words and repetitions of content words which aid comprehension. It could also decrease the complexity of sentences used in giving directions.

### **5.2 Value to Second Language Acquisition**

This research provides additional knowledge to research in second language studies, specifically research in the theories of second language acquisition. It provides additional support to the claims of the interaction hypothesis on low-

intermediate fluent speakers of the English language. This hypothesis states that modifications to the interactional structure of conversations taking place in the process of negotiating a communication problem help to make input comprehensible to a second language learner (Ellis, 1991). As shown by the findings, interaction does assist in comprehension. This research also aids in identifying the features of interactionally modified input that make it different from premodified input. The findings of this study show that interactionally modified input has more quantity and redundancy and possibly less complexity than premodified input.

Additionally, this research has implications for teaching listening comprehension in Ghana. The typical Ghanaian classroom has few opportunities for personalized interaction between learners and teachers. As a result, students receive only premodified language input, if any at all. The findings of this study suggest that more interaction should be provided between teachers and learners or, if possible, between more proficient speakers of English and students.

### **5.3 Recommendations for Future Research**

A lack of skill and time made it difficult to measure the exact difference in the level of complexity between premodified input and interactionally modified input. This is an area that could be further researched in the future to determine the relation between the complexity of language structures and interactionally modified input. This study looked at the relationship between interaction and listening comprehension. However, other areas of language could potentially be influenced by interaction. There is a need for research into other language skills such as speaking and reading.

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