

# The Influence of Chinese University Students' English Grammar Proficiency on Self-Repair in Oral Speech

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**Abstract:** This study aims to examine whether Chinese university students' English grammar proficiency affects the frequency and types of self-repair. The experiment was conducted in two steps: a grammar proficiency test followed by an oral task. Data were analyzed using T-tests and SPSS. The results indicate no significant differences in the frequency and types of self-repair between high and low grammar proficiency groups. The distribution characteristics of self-repair align with previous research, but the high grammar proficiency group exhibited a higher frequency of grammatical repairs. These findings suggest that although individuals may exhibit a high level of grammatical knowledge, their oral proficiency may not necessarily correspond to the same level. Grammar proficiency is a component of overall English proficiency, but it does not represent the entirety of language ability. The emphasis on written expression in Chinese education provides an explanation for the study's results.

**Keywords:** Self-repairs; Second-language Speech Production; Grammar Proficiency.

## 1. Introduction

Since the seminal findings on self-repair behavior by Schegloff, Jefferson, and Sacks, extensive research on self-repair has been conducted both domestically and internationally. Various factors influencing self-repair have been studied, including age, gender, task difficulty, self-efficacy, and second language proficiency. Recent studies have increasingly focused on the combined influence of multiple factors, such as English proficiency and foreign language anxiety, as well as English proficiency and task type on oral self-repair.

In the study by Cai Jinting and Chen Jiayi, the accuracy rate of morphological repairs (79%) was higher than that of lexical repairs (75%) [3], which is inconsistent with previous research. Kova and Milatović (2012) found that the accuracy rate of lexical repairs was higher than that of morphological repairs [7]. This discrepancy reflects the different sensitivities to grammatical forms among learners from different native language backgrounds. They attributed this to the influence of Chinese classroom English teaching, where students are more likely to notice grammatical errors and thus find it easier to correct them, leading to a higher accuracy rate of morphological repairs. This conclusion highlights the impact of grammatical awareness on oral self-repair.

Given these findings, this study aims to explore whether there are differences in the frequency and types of self-repair based on the levels of English grammar proficiency. This research intends to contribute to the body of literature on oral self-repair by examining the specific influence of grammar proficiency.

## 2. Literature Review

### 2.1. Definition and Classification of Self-Repair

Schegloff (1977) first introduced the concept of self-repair, defining it as a common phenomenon in conversation. [10] From a psycholinguistic perspective, Levelt [8] [9], Kormos [6], and Van Hest [14] defined self-repair based on the monitoring mechanism, positing that speakers stop talking

and self-repair their output upon realizing a linguistic error or inappropriate expression.

Levelt elaborated on the self-repair process in his perceptual loop theory, categorizing self-repair into covert repairs and overt repairs. He further subdivided overt repairs into inappropriate information repair, ordering repair, and message abandonment repair [8]. Kormos retained Levelt's main types of self-repair while refining different information repairs into inappropriate information repairs, ordering repairs, and message abandonment repairs [6]. In research applications, the classification of self-repair has seen numerous modifications. In China, the primary classifications still follow Levelt's system with some adjustments. For example, Yang added "lexical error repair" due to its high frequency [16] and, based on Van Hest (1996), subdivided appropriateness repairs into appropriate replacement repairs and appropriate insertion repairs [13].

### 2.2. Influence of English Proficiency on Self-Repair

Research on the relationship between language proficiency and self-repair is popular and has been adopted by Shonerd (1994), van Hest (2000), and Kazemi (2006). Most studies in this area indicate that lower English proficiency correlates with higher self-repair frequency, with significant differences in the types and structures of self-repair among students of varying proficiency levels. Low-proficiency students use more self-repairs, focusing mainly on lower-level "error repairs," whereas high-proficiency students predominantly employ advanced repair types such as "syntactic error repairs" and "appropriateness repairs." Additionally, the former group tends to use more "immediate repairs" and "retraced repairs," while the latter group uses more "restarts" [16]. Other researchers found that as English proficiency increases, the preference for repetition repairs and different repairs decreases, but higher proficiency students are more accurate in using appropriateness repairs and error repairs [12]. Clearly, English proficiency is closely related to self-repair in oral speech, with significant differences in repair types associated with proficiency levels. The fluency of grammatical encoding affects oral output, with Levelt categorizing lower-level

language features as grammatical encoding and lexical access. Learners with lower second language proficiency exhibit more instability and disfluency in the grammatical encoding process [11].

In China, research on English grammar proficiency primarily focuses on its impact on reading comprehension, summary writing, and teaching design, with few studies examining the relationship between grammar proficiency and oral skills. Furthermore, studies on English proficiency and oral self-repair often concentrate on overall English proficiency rather than specifically on grammar proficiency. Although existing research has explored oral self-repair from single and multiple factor perspectives, studies on English proficiency as a single factor are limited to overall proficiency, with few examining the specific impact of grammar proficiency. Therefore, this study aims to investigate whether English grammar proficiency affects the frequency and types of oral self-repair and to analyze the underlying reasons.

### 3. Research Methodology

#### 3.1. Research Question

This study aims to answer the question: Does the level of English grammar proficiency influence the frequency and types of self-repair in oral speech?

#### 3.2. Participants and Data Collection

The study involved 20 undergraduate English majors from Ningbo University, all of whom had received systematic instruction in full-time English-related courses and had never lived in an English-speaking country. The experiment comprised two steps: a grammar proficiency test and an oral task.

#### 3.3. Grammar Proficiency Test

The grammar test consisted of items from the Language Usage section of the TEM-4 (Test for English Majors, Band 4) and grammar cloze tests from the official sample papers of Cambridge English C1 Advanced. The test included 20 questions: 12 multiple-choice questions and 8 fill-in-the-blank questions. Participants were required to complete the test within 15 minutes to prevent time constraints from affecting the results.

#### 3.4. Oral Task

After completing the grammar test, participants undertook an oral task involving a picture description test. The task featured 24 images depicting a story in which a cat family experiences events after eating cloud bread. The main plot revolves around the cat brothers delivering the cloud bread made by their mother to their father to prevent him from being late for work. Participants were given 1 minute to familiarize themselves with the series of images. Given that seemingly similar tasks can elicit different language responses [4], a brief introduction to the key information was provided by the researcher after the 1-minute familiarization period. To maintain the experiment's validity, participants were informed that the oral task should last approximately 3 minutes. After the oral task, participants performed the same description in Chinese to aid in the classification of self-repair types during data analysis. The tests were conducted in a quiet study room, with recordings collected and transcribed for analysis.

### 3.5. Classification of Self-Repair

Based on the classifications by Levelt, Van Hest, and Kormos, and referencing Wu's [15] study on self-repair types among Chinese students, self-repairs were categorized as follows:

- Covert Repairs (RR): Repairs made without interrupting the flow of speech.
- Different Information Repairs (DIR): Changes to provide new or different information.
- Appropriateness Repairs (AR): Adjustments made to ensure the appropriateness of the expression.
- Error Repairs (ER): Corrections of mistakes, further divided into:
  - Phonological Error Repairs (PER)
  - Lexical Error Repairs (LER)
  - Grammatical Error Repairs (GER)

By categorizing and analyzing the types and frequencies of self-repair, this study aims to determine the influence of grammar proficiency on self-repair behaviors in oral English among Chinese university students.

**Table 1.** Repair types with examples

Self-repair Names	Subcategories	Examples
Repetition/Covert-repair		And the mom add some milk to make this cloud into into some bread.
Different-repair		Then there're,then the two kids bring their umbrella with the bread.
Appropriate-repair		And at this time the father didn't, because of the raining day,didn't catch to the work
Error-repair	Phonetic-repair	And the mother cat punched the cloud and mixed them with some floor,flours
	Lexical-repair	And actually,and finally their father go to work on time.
	Grammatical-Repair	They explain,they explained to their mother

### 3.6. Data Analysis

Upon completing the grammar test scoring and transcription of the oral task recordings, the data analysis proceeded as follows:

#### 3.6.1. Grouping by Grammar Proficiency

The participants' grammar test scores were averaged and used to divide them into high and low grammar proficiency groups.

#### 3.6.2. Annotation and Frequency Calculation

Each instance of self-repair in the transcribed data was identified and categorized according to the types defined in the study (covert repairs, different information repairs, appropriateness repairs, and error repairs, including

phonological, lexical, and grammatical error repairs).

The total frequency of self-repairs and the frequency of each type of self-repair were calculated for both the high and low grammar proficiency groups.

### 3.6.3. Statistical Analysis

T-tests and SPSS were used to calculate the p-values for the differences in self-repair frequency between the high and low grammar proficiency groups.

## 4. Results

The grammar test had a total score of 40 points, with an average score of 23.6 points. Thirteen participants scored above the mean and were classified into the high grammar proficiency group, while seven participants scored below the mean and were classified into the low grammar proficiency group.

### 4.1. Covert and Overt Repairs in High and Low Grammar Groups

Based on the collected data, the frequency of self-repairs was calculated. Descriptive statistics for self-repairs among high and low grammar proficiency students are presented in Table 2.

**Table 2.** Self-Repair Statistics by Grammar Proficiency

Group	Total covert repairs(RR)	Total overt repairs	Mean covert repairs(RR)	Mean overt repairs
High Grammar Group	67	92	5.15	7.08
Low Grammar Group	30	39	4.29	5.57

Table 2 indicates that the total number of covert self-repairs for the high grammar proficiency group was 67, and the overt self-repairs were 92. For the low grammar proficiency group, the covert self-repairs totaled 30, and the overt self-repairs were 39. Dividing these numbers by the respective group sizes gives the averages: covert self-repairs for the high grammar proficiency group averaged 5.15 and overt self-repairs averaged 7.08; covert self-repairs for the low grammar proficiency group averaged 4.29 and overt self-repairs averaged 5.57.

According to the transcripts in the Word document, the total word count for the oral tasks was 2743 words for the high grammar group and 1155 words for the low grammar group. Dividing each group's total word count by the number of covert and overt self-repairs provides the average number of words per self-repair. Dividing 100 by the results of the previous step yields the self-repair rates per 100 words for each student.

**Table 3.** Overt and Covert Repair Rates by Grammar Proficiency

Group	Covert Self-repair Rate	Overt Self-repair Rate
High Grammar Group	2.44	3.35
Low Grammar Group	2.60	3.38

Table 3 shows that students in the high grammar

proficiency group made 2.44 covert self-repairs and 3.35 overt self-repairs per 100 words. In contrast, students in the low grammar proficiency group made 2.60 covert self-repairs and 3.38 overt self-repairs per 100 words.

### 4.2. Frequency of Different Types of Self-repairs in High and Low Grammar Proficiency Groups

**Table 4.** Frequency of Self-Repair Types by Grammar Proficiency Level

Group	Total Self-repairs	Covert Self-repairs	Different Information Repairs	Appropriateness Repairs	Error Repairs
High Grammar Group	159	67	11	25	56
Low Grammar Group	69	30	5	7	27

Table 4 shows the frequency of different types of self-repairs for both high and low grammar proficiency groups. The high proficiency group made a total of 159 self-repairs, with 67 being covert, 11 for different information, 25 for appropriateness, and 56 for errors. The low proficiency group made a total of 69 self-repairs, with 30 being covert, 5 for different information, 7 for appropriateness, and 27 for errors.

**Table 5.** Self-Repair Rates by Grammar Proficiency Level

Group	Covert Self-repairs Rate	Different Information Repairs Rate	Appropriateness Repairs Rate	Error Repairs Rate	Total Self-repairs Rate
High Grammar Group	2.44	0.40	0.91	2.04	5.80
Low Grammar Group	2.60	0.43	0.61	2.34	5.97

Table 5 indicates that students in the high grammar proficiency group made 2.44 covert self-repairs, 0.40 different information repairs, 0.91 appropriateness repairs, and 2.04 error repairs per 100 words, with a total self-repair rate of 5.80. Meanwhile, students in the low grammar proficiency group made 2.60 covert self-repairs, 0.43 different information repairs, 0.61 appropriateness repairs, and 2.34 error repairs per 100 words, with a total self-repair rate of 5.97.

### 4.3. Subtype Analysis of Error Repairs in High and Low Grammar Proficiency Groups

**Table 6.** Subtype Analysis of Error Repairs by Grammar Proficiency Level

Group	Phonological Error Repairs	Lexical Error Repairs	Grammatical Error Repairs
High Grammar Group	0.073	1.17	0.91
Low Grammar Group	0	1.30	0.78

Table 6 shows the subtype analysis of error repairs for both

high and low grammar proficiency groups. The high proficiency group made a total of 56 error repairs, including 25 grammatical error repairs, 32 lexical error repairs, and 2 phonological error repairs. The low proficiency group made a total of 27 error repairs, including 9 grammatical error repairs, 15 lexical error repairs, and no phonological error repairs.

These data indicate that the high proficiency group had a higher frequency of grammatical error repairs and a lower frequency of lexical error repairs compared to the low proficiency group.

#### 4.4. The Impact of Different Grammar Proficiency Levels on Total Self-repair Frequency

**Table 7.** Statistical Significance of Total Self-Repair Frequency by Grammar Proficiency

Group	Sample Size (n)	Mean	Standard Deviation (SD)	t-statistic	p-value	Cohen's d
High Grammar Group	13	5.80	1.2	-0.367	0.719	-0.145
Low Grammar Group	7	5.97	1.3			

In Table 7, a p-value > 0.05 indicates that the difference in total self-repair frequency between the high and low grammar proficiency groups is not statistically significant.

#### 4.5. Impact of Different Grammar Proficiency Levels on Types of Self-repairs

**Table 8.** Statistical Significance of Self-Repair Types by Grammar Proficiency

Types of Self-repair	High Grammar Group number	Low Grammar Group number	High Grammar Group Expected Frequency	Low Grammar Group number Expected Frequency
Covert Self-repairs	67	30	65.6	31.4
Different Information Repairs	11	5	11.2	4.8
Appropriateness Repairs	25	7	22.4	9.6
Error Repairs	56	27	59.8	23.2
Chi-square value	p-value		Degrees of freedom (df)	
0.813	0.846		3	

In Table 8, a p-value > 0.05 indicates that the differences in types of self-repairs between the high and low grammar proficiency groups are not statistically significant.

## 5. Discussion

### 5.1. Self-repair Frequency and Distribution of Main Types

From the data, it is evident that covert self-repairs constitute a significant proportion. According to Levelt's monitoring theory, internal monitoring loops can lead to covert self-repairs, manifested as hesitations or repetitions in speech[9]. The most commonly used self-repair strategy involves delaying the production of the next lexical item [5]. Participants, influenced by factors such as unfamiliarity with oral tasks or anxiety, tend to repeat lexical items. Previous

studies have indicated that foreign language anxiety and eye contact with interlocutors [2] are psychological factors that can also affect the frequency of covert self-repairs.

While most studies suggest that higher proficiency in a second language (L2) reduces the frequency of covert self-repairs, this study finds that even in the high grammar proficiency group, the frequency of covert self-repairs remains high. This may be due to the short preparation time for oral tasks and participants' lack of confidence in their spoken English abilities. Many participants completed the grammar test quickly but expressed distrust in their spoken English abilities during the oral tasks, reflecting a common trend in Chinese education where there is a stronger emphasis on written expression over oral practice.

In overt self-repairs, error repairs are the most frequent, with grammatical repairs making up the highest proportion, followed by lexical and phonological repairs. Different information repairs and appropriateness repairs are much less frequent, which aligns with findings from previous research.

### 5.2. Impact of High and Low Grammar Proficiency Levels on Self-repair Frequency

From the data, it is apparent that there is no significant difference in the total frequency of self-repairs between the high and low grammar proficiency groups. While previous research often concludes that participants with higher English proficiency tend to have lower frequencies of self-repairs, it's important to consider that language proficiency can vary across different language skills such as speaking, listening, reading, and writing. One individual may excel in conversational skills and be fluent in spoken language but struggle with reading and writing fluency. Conversely, another individual may have a strong understanding of both spoken and written forms of a second language but struggle with speaking or writing fluently [1].

This study primarily focused on English grammar proficiency. Although participants in the high grammar proficiency group demonstrated superior syntactic and grammatical skills, this may have exacerbated their frequency of self-repairs. The data indicate that participants in the high grammar proficiency group more frequently utilized grammatical repairs, whereas participants in the low grammar proficiency group often failed to identify grammar errors and thus used fewer grammatical repairs. Phonological repairs were nearly absent in both high and low proficiency groups, reflecting the prevalent phenomenon among Chinese university students known as "mute English," where pronunciation errors often go unnoticed. Error correction types include phonological, lexical, and grammatical corrections, with phonological corrections having minimal impact on the overall frequency of error corrections. Given this premise, coupled with the higher frequency of grammatical corrections in the high proficiency group, the error correction frequencies between the high and low grammar proficiency groups converge.

Regarding appropriateness repairs, Levelt defines them as instances where speakers recognize a better way to express information and subsequently adjust their expression to provide a more precise manner of communication. Previous research has shown that as English proficiency increases, the frequencies of different and covert repairs tend to decrease, while the frequency of appropriateness repairs increases[12].

In this study, the high grammar proficiency group exhibited

an appropriateness repair rate of 0.91, whereas the low grammar proficiency group had a rate of 0.61, marking the largest difference among all types of repairs. Covert and different repairs also followed a trend of decreasing frequency with increasing proficiency levels, although not significantly different. This observation may be influenced by the relatively small sample size and the fact that English grammar proficiency does not necessarily represent overall English proficiency.

## 6. Conclusion

### 6.1. Key Findings

This study aimed to explore whether differences in English grammar proficiency levels influence the frequency and types of self-repairs in spoken English tasks. By refining English proficiency specifically to grammar proficiency, the study investigated the relationship between grammar proficiency and self-repair frequencies across various types. Based on the results and empirical data analysis, the study found the following insights:

Firstly, there were no significant differences between high and low grammar proficiency levels in terms of total self-repair frequency and specific types of self-repairs. The most common type of self-repair observed was covert repair, followed by error repair, appropriateness repair, and different information repair. Within error repairs, grammatical corrections were predominant, with the high grammar proficiency group using grammatical repairs more frequently than the low grammar proficiency group.

Secondly, English grammar proficiency does not necessarily represent overall English proficiency, and it does not significantly impact self-repair frequencies. This finding is consistent with previous research and suggests that within the context of Chinese educational backgrounds, there exists a significant divergence between grammar proficiency and oral proficiency. A high level of grammar proficiency does not inherently translate to more fluent spoken language abilities. Conversely, participants in the high grammar proficiency group demonstrated heightened grammar sensitivity, leading to more frequent use of grammatical repairs during self-monitoring.

### 6.2. Limitations of the Study

Despite rigorously reviewing literature, conducting experiments, and meticulously organizing data to achieve research goals, this study has several limitations:

(1) The sample size was relatively small, which may impact the generalizability of the results. Moreover, participants were selected from English majors to ensure task quality, limiting the ability to draw broad conclusions across diverse populations.

(2) Self-repair identification and classification were conducted by the researcher, which introduces potential subjectivity. Classification of self-repairs remains a topic of debate within academia, affecting the validity and objectivity of the findings.

### 6.3. Future Research and Recommendations

Given the limitations identified in this study, future researchers are encouraged to expand sample sizes and consider broader professional backgrounds when selecting participants. Further sub-categorization of self-repairs could provide deeper insights into the nuances of language

processing during spontaneous speech.

This study focused on the context of Chinese education, where grammar instruction receives significant emphasis. Future studies could incorporate participants from varied cultural backgrounds and language proficiencies to conduct comparative studies on the influences of different educational contexts on self-repair usage. Such investigations would contribute to validating the applicability of research findings across diverse settings.

These efforts will advance our understanding of how language proficiency and educational contexts shape self-repair behaviors in oral communication, thereby informing language teaching practices and pedagogical strategies.

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