The Impact of Recast and Scaffolded Feedback on Elementary Chinese Learners' Acquisition of Sentence "Ba"

Yutong Zhang[1,a,*]

[1]School of Liberal Arts, Nanjing University, Nanjing, China
[a]522023080020@smail.nju.edu.cn
*Corresponding author

Abstract: The study aims to investigate and compare the effects of different types of corrective feedback from the perspectives of cognitive interaction theory and sociocultural theory on second language learners' acquisition of complex Chinese sentence patterns. The research employs a "pretest—treatment—immediate post-test—delayed post-test" design to compare the effects of two types of corrective feedback (recast and scaffolded feedback) on elementary Chinese second language learners' acquisition of sentence "Ba". The results show that compared to recast, scaffolded feedback has a more significant positive effect on learners' acquisition of sentence "Ba", indicating that scaffolded feedback helps to stimulate learners to modify and restructure their existing second language knowledge, which is more conducive to the acquisition of complex Chinese sentence patterns in second language learning.

Keywords: corrective feedback, Chinese sentence "Ba", second language acquisition

1. Introduction

Corrective feedback (CF), as a critical component in the classroom instructional interaction, has a significant impact on learners' language learning [1][2] (Hattie & Timperley, 2007; Thiri, 2022). From a theoretical development perspective, research on CF has provided valuable insights into understanding the impact of interactive communication on second language development [3] (Fan & Xu, 2016). From a pedagogical perspective, these studies help teachers to understand and apply CF strategies effectively. Therefore, research on CF is not only crucial for theoretical development but also has profound implications for teaching practice.

Early researches on CF were primarily conducted within the theoretical framework of cognitive interaction, which emphasizes that learners engage in language output and feedback processing through interaction with others [4] (Loewen & Sato, 2018). Researchers explored the impact of different types of CF on second language acquisition from the perspective of cognitive interaction theory [5][6] (Ellis, Loewen, & Erlam, 2006; Hong, 2013). Studies have found that recasts help learners correct errors [7][8] (Carroll & Swain, 1993; Shi, 2004). However, Lyster (1998) found that the correction level following recasts was lower than that after explicit correction, indicating that learners may not notice the critical changes in language form during recasts, suggesting that recasts are ambiguous [9]. On the other hand, research has pointed out that feedback types that can induce learner self-correction have more significant positive effects [10][11] (Chaudron, 1988; Gooch, Saito, & Lyster, 2016).

With the widespread application of sociocultural theory in the field of second language acquisition, research on CF from this theoretical perspective has increasingly gained attention. Sociocultural theory posits that providing appropriate scaffolded feedback based on learners' zone of proximal development (ZPD) can positively influence their language acquisition [12][13] (Frawley & Lantolf, 1985; Nassaji & Swain, 2000). Rassaei (2014) focused on comparing the effects of CF from cognitive interaction theory and sociocultural theory, examining the impact of recasts and scaffolded feedback on the second language development of Persian EFL learners. The results showed that although both feedback types have facilitative effects, scaffolded feedback is more conducive to promoting higher levels of development [14].

Numerous studies have investigated the effects of different CF types on second language acquisition [15][16] (Zu, 2008; Sato & Loewen, 2018). However, consensus on which type of feedback is

most effective has yet to be reached. Meanwhile, despite some progress in sociocultural theory-based research domestically and internationally in recent years, these studies have often been limited to second language acquisition of Indo-European languages [17][14] (Aljaafreh & Lantolf, 1994; Rassaei, 2014). There remains a significant lack of empirical research on the acquisition of Chinese as a second language, especially comparative analyses of CF effects from the perspectives of cognitive interaction theory and sociocultural theory. Therefore, this study further expands the research scope, delving into the effects of different types of CF from cognitive interaction and sociocultural perspectives to compare and explore the roles of CF in Chinese second language acquisition and classroom interactive teaching.

2. Experimental Design

2.1. Participants

The experiment selected 52 elementary-level Chinese language learners from a university in Nanjing, including 22 males and 30 females. These learners had initially studied the grammar and usage rules of the Chinese sentence "Ba" but had not fully mastered them. To ensure that improvements in post-test and delayed post-test results could be maximally attributed to the experimental interventions, participants who scored above 60% in the pre-test were excluded (7 participants: 2 males and 5 females). Ultimately, 45 elementary-level learners were selected, including 21 males and 24 females, with an average age of 22.6 years and an average Chinese learning duration of six months. The 45 participants were evenly divided into three groups: the recast feedback group (hereafter referred to as the "Recast"), the scaffolded feedback group (hereafter referred to as the "Scaffold"), and the control group, with 15 participants in each group (7 males and 8 females in each). During the experiment, participants' learning of the sentence "Ba" was limited to the experimental interventions.

2.2. Experimental Procedure

The experiment employed a "pre-test—intervention—immediate post-test—delayed post-test" design, lasting a total of five weeks. In the first week, a pre-test was conducted to understand participants' mastery of the sentence "Ba", excluding those who scored above 60%. In the second and third weeks, experimental interventions were carried out. All three groups received the same language rule instruction and interactive communicative practice. The Recast Group and the Scaffold Group were provided with recast feedback and scaffolded feedback, respectively, for errors related to the sentence "Ba", while the control group received no feedback or correction for errors. An immediate post-test was conducted immediately after the interventions in the third week, followed by a delayed post-test two weeks later. All three tests included both written and oral tests. Written tests included tasks such as true/false judgment, multiple choice, and sentence reordering to assess participants' mastery of the sentence "Ba". Oral tests included tasks such as picture description and situational communicative exercises to assess participants' ability to use the sentence "Ba" in specific contexts.

3. Results and Brief Analysis

3.1. Results and Brief Analysis of Two Experimental Interventions

The experimental interventions lasted approximately 380 minutes for the 45 participants across the three experimental groups. The results are shown in Table 1:

Table 1: Statistics of Errors, CF, and Corrections during Experimental Interventions

Group	Number of Errors	Number of CF	Number of Corrections
Recast	79	76	33
Scaffold	72	70	59
Control	69	2	3

All three groups had approximately 70 errors each, but there was a significant difference in the number of corrections. The Recast Group had 79 errors, with teachers providing 76 instances of recast feedback, resulting in only 33 corrections, which accounted for just 41.8% of the errors. This finding supports the notion that "recasts are ambiguous [9] (Lyster, 1998)". The Scaffold Group had 72 errors, with 70 instances of scaffolded feedback, leading to 59 corrections, accounting for 81.9% of the errors. In the Control Group, there were 69 errors, with only two instances of CF (one repetition of the student's error and one instance of scaffolded feedback), resulting in only three corrections: one from

scaffolded feedback and two from student self-correction, accounting for just 4.3% of the errors.

Based on these statistics, it can be preliminarily concluded that while some students may notice recast feedback from teachers, others do not. However, the majority of students notice the negotiation moves in scaffolded feedback and subsequently correct their errors.

3.2. Test Results and Brief Analysis

During the experimental interventions, participants in the three groups received recast feedback, scaffolded feedback, or no CF (only content feedback), respectively, and participated in the same language rule instruction and communicative language practice. The study compared the acquisition of sentence "Ba" among the three groups using pre-tests, immediate post-tests, and delayed post-tests (including both written and oral tests). To draw more scientific and effective conclusions, data analysis was conducted using SPSS 26.0, applying one-way ANOVA and post-hoc comparisons to analyze the differences.

3.2.1. Written Test Results and Analysis

Table 2: Written Test Scores of the Three Groups (M±SD)

Group	Pre-test	Immediate Post-test	Delayed Post-test
Recast	48.20±6.65	73.67±7.71	68.13±8.84
Scaffold	47.40±7.39	82.53±5.13	79.93±5.86
Control	48.40±7.43	54.07±5.26	50.13±6.40

As shown in Table 2, the written test scores of the three groups were similar in the pre-test. One-way ANOVA indicated no significant differences in pre-test scores among the three groups ($F_{(2, 42)}$ =0.082, P=0.922>0.05), indicating homogeneity of variance and ensuring comparability in the acquisition and development of sentence "Ba" among the groups. After the pre-test, two experimental interventions were conducted, providing different types of feedback to the groups. An immediate post-test conducted after the second intervention showed significant differences among the groups ($F_{(2, 42)}$=84.287, P=0.000<0.05). A delayed post-test conducted two weeks later also showed significant differences among the groups ($F_{(2, 42)}$=66.042, P=0.000<0.05). To specifically compare the differences in pre-test, immediate post-test, and delayed post-test scores among the groups, post-hoc comparisons were conducted, as shown in Table 3:

Table 3: Post-hoc Comparisons of the Three Tests

Group	Comparison	Mean Difference(I-J)	Significance (p-value)
Pre-test	Recast—Scaffold	0.800	0.761
	Recast—Control	-0.200	0.939
	Scaffold—Control	-1.000	0.704
Immediate Post-test	Recast—Scaffold	-8.867*	0.000*
	Recast—Control	19.600*	0.000*
	Scaffold—Control	28.467*	0.000*
Delayed Post-test	Recast—Scaffold	-11.800*	0.000*
	Recast—Control	18.000*	0.000*
	Scaffold—Control	29.800*	0.000*

* The significance level of the mean difference is 0.05.

The post-hoc comparisons of the three tests showed no significant differences in pre-test scores within each group (p-values: 0.761, 0.939, and 0.704, all greater than the significance level of 0.05). Significant differences were observed in the immediate post-test scores, indicating that the Scaffold Group performed significantly better than the Recast Group, the Recast Group performed significantly better than the Control Group, and the Scaffold Group performed significantly better than the Control Group (P=0.000<0.05). Similar significant differences were observed in the delayed post-test scores, with the Scaffold Group outperforming the Recast Group, the Recast Group outperforming the Control Group, and the Scaffold Group outperforming the Control Group (P=0.000<0.05). These results suggest that both recast and scaffolded feedback promote the acquisition of sentence "Ba" during instructional interactions, with scaffolded feedback being more effective than recast feedback.

To compare the acquisition and development of sentence "Ba" among the three groups after the experimental interventions, one-way ANOVA was conducted on the pre-test, immediate post-test, and delayed post-test scores. The results showed significant differences across the three tests for the Recast Group ($F_{(2, 42)}$ = 44.441, P=0.000<0.05) and the Scaffold Group ($F_{(2, 42)}$= 149.758, P=0.000<0.05). The

Control Group showed marginally significant differences across the tests ($F_{(2, 42)}$ = 3.063, P = 0.057, slightly above the significance level of 0.05). To further explore the differences in pre-test, immediate post-test, and delayed post-test scores within each group, post-hoc comparisons were conducted, as shown in Table 4:

Table 4: Post-hoc Comparisons of Written Test Scores among the Three Groups

Group	Comparison	Mean Difference(I-J)	Significance (p-value)
Recast	Pre-test—Immediate Post-test	-25.467*	0.000*
	Pre-test—Delayed Post-test	-19.933*	0.000*
	Immediate Post-test—Delayed Post-test	5.533	0.058
Scaffold	Pre-test—Immediate Post-test	-35.133*	0.000*
	Pre-test—Delayed Post-test	-32.533*	0.000*
	Immediate Post-test—Delayed Post-test	2.600	0.257
Control	Pre-test—Immediate Post-test	-5.667*	0.020*
	Pre-test—Delayed Post-test	-1.733	0.464
	Immediate Post-test—Delayed Post-test	3.933	0.101

* The significance level of the mean difference is 0.05.

Post-hoc comparisons of the scores within each group revealed different impacts of various CF types on acquisition. The Recast Group showed significant improvement in immediate post-test scores compared to pre-test scores (P=0.000<0.05) and significant improvement in delayed post-test scores compared to pre-test scores (P=0.000<0.05), with marginal significance between immediate post-test and delayed post-test scores (P=0.058, slightly above the significance level). The Scaffold Group showed significant improvement in both immediate post-test (P=0.000<0.05) and delayed post-test (P=0.000<0.05) compared to pre-test scores, but no significant difference between immediate post-test and delayed post-test scores (P=0.257>0.05). This indicates that the positive effect of scaffolded feedback on the acquisition of sentences "Ba" demonstrated a delayed effect, whereas recast feedback did not show such a delayed effect. The Control Group showed a significant difference between pre-test and immediate post-test scores (P=0.020<0.05) but no significant differences between pre-test and delayed post-test (P=0.464>0.05) or between immediate post-test and delayed post-test (P=0.101>0.05), suggesting that content-only feedback had no significant impact on the acquisition and development of sentence "Ba". The significant effect between pre-test and immediate post-test may be attributed to language rule instruction and communicative practice, further confirming that CF (recast and scaffolded feedback) has a positive effect on the acquisition of sentence "Ba" during instructional interaction. Therefore, written test scores confirm the effectiveness of recast and scaffolded feedback, with scaffolded feedback being more effective and showing a delayed effect.

3.2.2. Oral Test Results and Brief Analysis

Oral test scores were also analyzed using one-way ANOVA and post-hoc comparisons to compare differences among the groups. The statistics of oral test scores for each group are shown in Table 5, and the post-hoc comparisons of the three tests are shown in Tables 6 and 7.

Table 5: Oral Test Scores of the Three Groups (M±SD)

Group	Pre-test	Immediate Post-test	Delayed Post-test
Recast	34.47±7.019	56.67±8.690	42.13±9.273
Scaffold	33.73±7.440	61.27±7.440	58.40±5.616
Control	34.87±6.468	38.73±6.497	35.13±7.210

* The significance level of the mean difference is 0.05.

Table 6: Post-hoc Comparisons of the Three Tests

Group	Comparison	Mean Difference(I-J)	Significance (p-value)
Pre-test	Recast—Scaffold	0.733	0.775
	Recast—Control	-0.400	0.876
	Scaffold—Control	-1.133	0.659
Immediate Post-test	Recast—Scaffold	-4.600	0.105
	Recast—Control	17.933*	0.000*
	Scaffold—Control	22.533*	0.000*
Delayed Post-test	Recast—Scaffold	-16.267*	0.000*
	Recast—Control	7.000*	0.014*
	Scaffold—Control	23.267*	0.000*

* The significance level of the mean difference is 0.05.

Table 7: Post-hoc Comparisons of Oral Test Scores Among the Three Group

Group	Comparison	Mean Difference(I-J)	Significance (p-value)
Recast	Pre-test—Immediate Post-test	-22.200*	0.000*
	Pre-test—Delayed Post-test	-7.667*	0.016*
	Immediate Post-test—Delayed Post-test	14.533*	0.000*
Scaffold	Pre-test—Immediate Post-test	-27.533*	0.000*
	Pre-test—Delayed Post-test	-24.667*	0.000*
	Immediate Post-test—Delayed Post-test	2.867	0.261
Control	Pre-test—Immediate Post-test	-3.867	0.123
	Pre-test—Delayed Post-test	-0.267	0.914
	Immediate Post-test—Delayed Post-test	3.600	0.123

* The significance level of the mean difference is 0.05.

As shown in Table 5, there were no significant differences in oral test scores among the three groups in the pre-test ($F_{(2, 42)}=0.102$, $P=0.904>0.05$). After two experimental interventions, all three groups showed significant improvement in immediate post-test ($F_{(2, 42)}=36.854$, $P=0.000<0.05$). However, there was a decline in delayed post-test scores for all three groups, with significant differences ($F_{(2, 42)}=37.828$, $P=0.000<0.05$). Comparing Tables 6 and 4 reveals that the post-hoc comparisons of the three oral and written tests show similar trends. Comparing Tables 7 and 4 reveals that differences between pre-test and immediate post-test scores are significant only for the Control Group, indicating no significant difference between pre-test and immediate post-test scores ($P=0.123>0.05$). Therefore, the oral test results further confirm the effectiveness of recast and scaffolded feedback, with scaffolded feedback being more effective and showing a delayed effect.

4. Discussion

Results revealed that all groups had similar pre-test levels. However, the immediate post-test scores of three groups were all higher than their respective pre-test scores. This finding supports the facilitating role of language rule instruction and communicative language practice in second language acquisition. In the immediate post-test, the performance of the Recast and Scaffold groups was significantly better than that of the Control group. This suggests that relying solely on language rule instruction, communicative language practice, and feedback on content (meaning negotiation) during interactions is insufficient. Corrective feedback (form-focused negotiation) is also necessary to direct students' attention to language forms [18][9] (Long, 1996; Lyster, 1998), enabling them to consciously notice the discrepancies between their output and the target language's correct forms, thus enhancing their understanding and application of the target language.

Furthermore, data from all three tests (written and oral) indicate that both in the immediate and delayed post-tests, the Recast and Scaffold groups outperformed the Control group, with the Scaffold group demonstrating the best performance. This finding highlights the positive impact of both recasts and scaffolded feedback on the acquisition and development of the Chinese sentence "Ba" with scaffolded feedback showing a superior effect. Additionally, the non-significant difference between the immediate and delayed post-tests in the Scaffold group suggests that scaffolded feedback has a long-term, stable positive effect on second language acquisition and development. In contrast, the significant difference between the immediate and delayed post-tests in the Recast group, combined with the fact that the immediate post-test scores were significantly higher than the pre-test scores, indicates that recast feedback has a short-term positive effect on the acquisition of sentence "Ba".

Before the experiment, participants had initially been exposed to and learned some language knowledge and rules regarding the Chinese sentence "Ba". These knowledge elements were stored in their long-term memory to varying degrees of stability, but they were not fully mastered. The retrieval and application of linguistic information depend on the process of restoring memory traces, which involves activating the linguistic information stored in long-term memory. Scaffolded feedback provides learners with targeted memory cues, aiding them in deeper cognitive processing, enhancing the retrievability of language rules in memory, and facilitating the more effective matching, retrieval, and application of linguistic information stored in memory, thereby promoting the overall development of their language ability. Thus, as a type of feedback that encourages output, scaffolded feedback can stimulate recall and is more conducive to the development of second language proficiency. In contrast, recast feedback, due to its implicit and ambiguous nature [19] (Zhang & Pan, 2015), may not effectively promote students' understanding and response to feedback or their self-correction of errors.

Additionally, when learners repeat the correct forms provided by the teacher after recasting, it is uncertain whether they have genuinely noticed the discrepancies between their interlanguage and the correct language forms or whether they have truly comprehended and mastered the correct language rules. As an implicit feedback method that provides input, recasting may not easily capture learners' attention, may not trigger complex cognitive processing, and may fail to ensure deep encoding and consolidation of linguistic information in long-term memory [20] (Wang, 2009).

In conclusion, a comparative analysis of the data indicates that both recast feedback, based on the cognitive interaction theory, and scaffolded feedback, based on the sociocultural theory, have positive effects on the acquisition and development of the Chinese sentence "Ba" among elementary Chinese learners. However, compared to recast feedback, scaffolded feedback shows more pronounced positive effects and better long-term outcomes.

5. Conclusion

CF, as an important instructional tool, plays a crucial role in second language acquisition. Scaffolded feedback, as an explicit, output-oriented form of feedback, is more effective in drawing learners' attention due to its directness and clarity, thereby facilitating their understanding and reconstruction of grammatical rules. Conversely, recast feedback, as an implicit, input-oriented form of feedback, can be made more effective by increasing its saliency, encouraging learners to more closely monitor and process language input, thereby enhancing their language awareness. In classroom interactions, teachers should consider integrating different types of CF strategies, leveraging the synergistic effects of multiple strategies to more effectively promote the acquisition and development of second language knowledge. Understanding and effectively utilizing this tool is key for international Chinese teachers to improve teaching outcomes and help students better learn and master the target language.

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