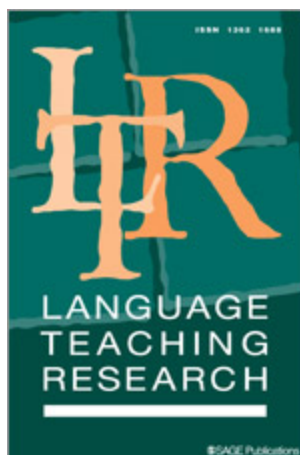




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The Role of Recasts and Negotiated Prompts in an FL Learning Context in China with Non-English Major University Students

Journal:	<i>Language Teaching Research</i>
Manuscript ID	LTR-17-0148.R4
Manuscript Type:	Full Research Article
Keywords:	corrective feedback, recasts, negotiated prompts, second language acquisition, questions, the past tense
Abstract:	<p>This quasi-experimental classroom study examines the effects of recasts and negotiated prompts on oral interactions in a foreign language (FL) context where the instructional approach primarily focuses on grammar and accuracy. Ninety adult native speakers of Mandarin Chinese from two intact classes were randomly assigned to one of two experimental groups (recast or negotiated prompt) or a control group, and were asked to complete pre-/post-tests on their use of question and past tense forms in English. Between the pre-test and the post-tests, the learners of the two experimental groups had three treatment lessons for feedback outside their usual English classes, the interaction data of which are reported. ANOVA analyses revealed that recasts were highly effective for accuracy development of Wh- questions, interrogative questions and irregular past tense verbs. Negotiated prompts showed moderate effectiveness at most times for accuracy development of interrogative questions and both irregular and regular past tense verbs. These findings provide further insights into the role of corrective feedback (CF) in L2 development.</p>

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3 **The role of recasts and negotiated prompts in an FL learning context**
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10 **ABSTRACT**

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13 This quasi-experimental classroom study examines the effects of recasts and
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15 negotiated prompts on oral interactions in a foreign language (FL) context where the
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17 instructional approach primarily focuses on grammar and accuracy. Ninety adult
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19 native speakers of Mandarin Chinese from two intact classes were randomly assigned
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21 to one of two experimental groups (recast or negotiated prompt) or a control group,
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33 interrogative questions and irregular past tense verbs. Negotiated prompts showed
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35 moderate effectiveness at most times for accuracy development of interrogative
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37 questions and both irregular and regular past tense verbs. These findings provide
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49 *Keywords:* corrective feedback; recasts; negotiated prompts; second language
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51 acquisition; questions; past tense
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I Introduction

There has been considerable interest in investigating the role of two types of CF, namely, recasts and prompts, in second language acquisition (SLA) research. Many studies have reported a positive role of these two CF types in second language (L2) development by comparing their effects on different structures within laboratory and classroom settings (Lyster & Saito, 2010; Lyster, Saito, & Sato, 2013; Russell & Spada, 2006). While both CF types are similarly effective for L2 learning in the laboratory setting (Li, 2010; Lyster & Izquierdo, 2009; Nicholas, Lightbown, & Spada, 2001), their role in L2 learning in the classroom setting remains unclear (Goo & Mackey, 2013; Lyster & Ranta, 2013; Lyster et al., 2013). This lack of clarity might result from the fact that a combination of variables in a classroom context (e.g., learner age) interacts with the CF types and will have an impact on their effectiveness. As a result, we suggest, as do others (Lyster & Ranta, 2013; Lyster et al., 2013), that further classroom research is needed to obtain a better understanding of how the two CF types work for L2 learning in the classroom setting, and to offer implications for L2 pedagogies.

This article reports on a quasi-experimental classroom study that investigated the effectiveness of recasts and prompts in the English-as-an-FL context. Specifically, this context involved non-English major students at a Chinese university. To our knowledge, little research has investigated how this group of learners utilizes CF for accuracy development in their English classes. Given that non-English major students constitute a large majority of the annual five million enrollees in Chinese higher education (Chen & Klenowski, 2009; Liu, Xu, & Ran, 2015), it is of significance to examine their L2 learning of English, including their use of CF when they are

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2
3 engaged in language tasks. Moreover, built on a few experimental classroom studies
4 that targeted two structures (e.g., Ellis, 2007; Mifka-Profozic, 2013; van de Gauche,
5 Braaksma, Rijlaarsdam, & Bimmel, 2015; Yang & Lyster, 2010), this study further
6 tested the differential effects of recasts and prompts on two types of questions (Wh-
7 and interrogative questions) and two types of past tense verbs (irregular and regular
8 past tense verbs). Finally, in contrast with previous experimental classroom research
9 (e.g., Ammar & Spada, 2006; Ellis, 2007; Gooch, Saito, & Lyster, 2016; Lyster, 2004;
10 Mifka-Profozic, 2013; van de Guchte et al., 2015; Yang & Lyster, 2010), this study
11 used a new combination of prompts to determine their effectiveness in relation to
12 recasts. This combination includes three prompts that provide opportunities for output
13 only: clarification requests, repetitions, and elicitations. We refer to the three prompts
14 as negotiated prompts. Through these variations in method, this study aims to cast
15 further light on how recasts and prompts work for L2 learning in the classroom
16 setting.

1. *Theoretical background*

17 Recasts are the most widely studied CF in oral interaction research. They constitute
18 partial or full reformulation of L2 learners' non-target-like utterances with target-like
19 models while keeping the learners' central meaning. Theoretical support for the
20 contribution of recasts to SLA draws largely on Long's (1996, 2007) updated
21 interaction hypothesis, which refers to Schmidt (1990, 1993, 1995) to highlight the
22 role of noticing in L2 learning. Long believes that the utility of recasts lies in the
23 feedback's semantic transparency in freeing up learner attention to form, contingent
24 juxtaposition of incorrect and correct utterances to induce a cognitive comparison of
25 form, and unobtrusiveness in conversation flow to encourage form-function mapping.

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3 Some other scholars (e.g., Doughty, 2001; Nicholas et al., 2001) add that recasts can
4
5 also be a scaffolding technique when the targeted forms are beyond learners'
6
7 interlanguage capacity to produce.
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10 Prompts are often compared to recasts in SLA research. Whereas recasts
11
12 provide models of language and are referred to as input-providing CF, prompts
13
14 encourage L2 learners to modify their non-target-like utterances and are referred to as
15
16 output-promoting CF (Ellis, 2006). According to Lyster and his colleagues (Lyster,
17
18 2004; Lyster et al., 2013), prompts contain clarification requests, repetitions,
19
20 elicitations, and metalinguistic clues. Theoretical support for the contribution of
21
22 prompts to SLA can be found in the output hypothesis (Swain, 1985, 1995, 2005) and
23
24 skill acquisition theory (Anderson, 1993, 2000). According to the output hypothesis,
25
26 modified or pushed output following prompts helps learners to notice their deviant L2
27
28 use, to search in their rule-based knowledge system to test their hypotheses, and to
29
30 talk about language forms. These functions of modified or pushed output induce a
31
32 processing of language form at the conscious level, which Lyster (2004) argues will
33
34 make prompts more informative for resolving problematic interlanguage forms. With
35
36 reference to skill acquisition theory, prompts are postulated to provide “guided
37
38 practice in the context of communicative interaction” (Lyster et al., 2013, p. 11),
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40 which contributes to the gradual transition from effortful production of the target
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42 language to more automatic use.
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49 Drawing on the theories explained above, many studies have examined the
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51 effectiveness of recasts and prompts. The existing observational and experimental
52
53 classroom studies seem to point to recasts being overall less effective than prompts.
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55 However, as many factors can affect CF effectiveness, the results are not conclusive
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57 (e.g., Ellis, 2007; Goo & Mackey, 2013; Lyster & Ranta, 2013; Lyster et al., 2013;
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1
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3 Russell & Spada, 2006). In the following sections, relevant studies will be reviewed,
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5 with a focus on the factors that have motivated the current study.
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13 2. *Classroom context*

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16 While the effects of recasts and prompts differ between laboratories and classrooms
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18 (Li, 2010; Lyster & Izquierdo, 2009), the effects of the two CF types may also differ
19
20 across classroom contexts. In a study that compared the rate of uptake following CF
21
22 across two Canadian classrooms, English L2 classrooms in New Zealand, and English
23
24 FL classrooms in Korea, Sheen (2004) found that the rate of uptake following recasts
25
26 differed substantially. Comparably, Lyster and Mori (2006) reported that a much
27
28 higher proportion of uptake followed recasts in Japanese immersion classes in the
29
30 USA, where a focus-on-form was emphasized with repetition and reading aloud
31
32 exercises, than in French immersion classes in Canada, where the instruction was
33
34 mainly focused on meaning or content. Based on the differential rates of uptake in
35
36 different classrooms, researchers (Han & Kim, 2008; Loewen & Philp, 2006;
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38 Nicholas et al., 2001; Sheen, 2004, 2006) speculate that recasts should work as well as
39
40 prompts in a classroom context that is more oriented to language form because this
41
42 orientation reduces the ambiguity of recasts. Conversely, when the instructional
43
44 context is mainly focused on meaning or content, recasts can be ambiguous as
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46 confirming meaning rather than disapproving form (Lyster, 1998, 2015).
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53 Although observational classroom studies are invaluable in showing the role of
54
55 recasts and prompts according to classroom contexts, these studies can be criticized
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57 for using uptake as a measure of learning. Uptake is not equivalent to evidence of
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3 learning (Goo & Mackey, 2013; Lyster et al., 2013). Therefore, experimental
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5 classroom studies (e.g., Ammar & Spada, 2006; Ellis, 2007; Gooch et al., 2016;
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7 Loewen & Nabei, 2007; Lyster, 2004; Mifka-Profozic, 2013; van de Guchte et al.,
8
9 2015; Yang & Lyster, 2010) have used pre-/post-tests to measure the effects of recasts
10
11 in comparison to a single prompt or a combined category of prompts on different
12
13 structures (see Table 1). For example, in an early but influential study, Lyster (2004)
14
15 examined the effects of recasts vs. four prompts in form-focused instruction on the
16
17 learning of French gender agreement. Results indicate that subjects who received
18
19 recasts embedded in form-focused instruction were superior in five of the eight
20
21 measures when compared with the control group, but subjects who received prompts
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23 with form-focused instruction significantly out-performed the control group in all
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25 measures.
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31 Collectively, the quasi-experimental classroom studies have tended to show less
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33 effectiveness of recasts than prompts. However, the studies offer a limited insight into
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35 how CF effectiveness differs according to classroom contexts. Experimental
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37 classroom studies are limited in number, less than 10 to our knowledge, and some
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39 studies only tested CF effectiveness without reporting the classroom context (Gooch
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41 et al., 2016; Loewen & Nabei, 2007). Among the studies that reported the classroom
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43 context, the greater effectiveness of prompts was achieved mainly in classroom
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45 contexts where the L2 was used as a tool for communication, such as an intensive
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47 language program or bilingual content-based program (Ammar & Spada, 2006; Ellis,
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49 2007; Lyster, 2004; Yang & Lyster, 2010). There seems to be limited research in the
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51 classroom context that emphasizes grammar and accuracy, which is typically
52
53 associated with the formal language classroom in the FL setting (Collentine & Freed,
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55 2004). Only two studies, van de Guchte et al. (2015) and Mifka-Profozic (2013), were
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2
3 conducted in this latter context. Although Yang and Lyster (2010) claimed their study
4 was conducted in a context focusing on language form, the learners in their study
5 were English-major second year students at a Chinese university. Those students
6 receive various language-related classes in the instructional language of English at
7 university (Fang, 2009; Syllabus for the English Major in Higher Education, 2000),
8 and their learning environment provides an extensive amount of input but may lack
9 the opportunity for output.
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20 Compared to Yang and Lyster's (2010) English-major second year students,
21 non-English major university students in China undertake weekly classes of three to
22 four hours in their first two years of study. As Cortazzi and Jin (1996a, 1996b, 2001)
23 describe, the lessons usually start with an explanation of new words or phrases (i.e.,
24 parts of speech, collocations), continue with the teacher's explanation of the text
25 sentence-by-sentence, and end with written exercises that mostly focus on language
26 points. Also noted by Jin and Cortazzi (1998) and observed by us, due to waves of
27 top-down reforms to promote communicative or task-based language teaching in
28 China, language tasks are now infrequently used in the English classes of non-English
29 major students. In this classroom context, where there is a strong focus on grammar
30 and accuracy, the provision of recasts during the performance of language tasks may
31 facilitate learning equally as well as the provision of prompts. This prediction,
32 however, would need to be supported by empirical data.
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56 3. *Target structures* 57 58 59 60

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3 Research has found that CF works for one structure in one condition but may not
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5 work for another structure. This structure-dependent effect of CF is reflected in the
6
7 findings of four experimental classroom studies that targeted two different structures
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9 (Ellis, 2007; Mifka-Profozic, 2013; van de Guchte et al., 2015; Yang & Lyster, 2010).
10
11 With adult Asian learners from three small language classes that formed the recast,
12
13 metalinguistic clue, or control groups, Ellis (2007) investigated the effects of recasts
14
15 vs. metalinguistic clues on the comparative and regular past tense in English. He
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17 rationalized his selection of the two structures in terms of learning difficulty, with the
18
19 comparative being the more difficult. Ellis found metalinguistic clues were more
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21 effective in the comparative than in the regular past tense, with nil effects of recasts
22
23 on both structures. Also with adult Asian learners, Yang and Lyster (2010) compared
24
25 the effects of recasts and prompts on regular and irregular past tense verbs based on
26
27 the two forms' distinction in rule-based vs. exemplar-based learning. It was found that
28
29 there were larger effects for the prompt group than for the recast group in the learners'
30
31 use of regular past tense verbs, and the two groups had comparable effects with
32
33 irregular past tense verbs. Therefore, Yang and Lyster concluded that prompts are
34
35 more effective than recasts in triggering access to the rule-based system, whereas both
36
37 CF types are alike in triggering access to the exemplar-based system.
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45 Another two experimental classroom studies involved secondary school
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47 learners. Van de Guchte et al. (2015) examined the interaction of recasts and prompts
48
49 with two structures that differed in relatedness to the students' mother tongue (L1).
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51 Results showed that while prompts were effective for Dutch students' acquisition of
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53 both comparative and dative structures in German, recasts yielded positive findings
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55 only in the relatively easier, L1-related comparative structure. On the other hand,
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57 Mifka-Profozic (2013) found recasts were more beneficial than clarification requests
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3 for English learners' development of passé composé and imperfect structures in
4 French. Specifically, the learners in the recast group significantly improved their
5 accurate use of both structures in all the tests, whereas those in the clarification
6 request group showed gains over time only for the imperfect structure. Accordingly,
7 Mifka-Profozic suggests that recasts work better than clarification requests for the
8 acquisition of morphologically complex structures, though both CF types can
9 facilitate the acquisition of morphologically simple structures.

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11
12 It can be seen that the number of experimental classroom studies that have
13 investigated the efficacy of recasts and prompts on the acquisition of different
14 structures is limited. The question raised by Yang and Lyster (2010) about how
15 recasts and prompts work differently for different structures has been inconclusively
16 answered. A number of studies have chosen English questions (e.g., Mackey & Philp,
17 1998; McDonough, 2005) or past tense verbs (e.g., Ellis, 2007; Yang & Lyster, 2010)
18 to examine the effects of CF on L2 development. However, no study has compared
19 the effects of CF on questions and the past tense in the same study. Robinson (2001)
20 discusses whether the learning of syntax may differ from the learning of morphology
21 or lexicon regarding the level of attention required. A study that investigates the
22 effects of recasts and prompts on both syntactic questions and morphological past
23 tense will develop further understanding of how the two CF types work for L2
24 development.

25 26 27 4. *Feedback operationalization*

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29 Another factor that leads to the lack of clarity in the role of recasts and prompts in
30 previous experimental classroom studies is the varied administration of the two CF
31 types. As shown in Table 1, prompts come in a variety of categories, involving only
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3 metalinguistic clues in Ellis (2007), a clarification request in Mifka-Profozic (2013), a
4 metalinguistic clue followed by an elicitation in van de Guchte et al. (2015), a
5
6 clarification request followed by an elicitation in Gooch et al. (2016), and
7
8 metalinguistic clues with two or three other prompts in the rest of the studies (e.g.,
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10 Ammar & Spada, 2006; Lyster, 2004; Yang & Lyster, 2010). The operationalization
11
12 of metalinguistic clues in the studies also varies. In Lyster (2004), metalinguistic clues
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14 did not refer to grammar rules about the non-target-like parts of learner utterances;
15
16 however, the other studies that used this CF did refer to grammar rules. When
17
18 metalinguistic information is provided via metalinguistic clues, it is not clear whether
19
20 the effects of prompts are due to metalinguistic input, opportunities for output or both
21
22 (Goo & Mackey, 2013). Therefore, to clearly determine the role of prompts, future
23
24 research on CF would need to compare the effects of recasts with prompts that
25
26 provide opportunities for output only or with metalinguistic clues.
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34 The same variation of administration occurs with recasts. While three studies
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36 (Ellis, 2007; Gooch et al., 2016; Mifka-Profozic, 2013) were specific in
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38 operationalizing recasts, other experimental classroom studies were not. In the other
39
40 studies, recasts could come in a variety of forms, and the relative efficacy of these
41
42 forms may be significantly different (Loewen & Philp, 2006; Sheen, 2006). This
43
44 variation in the operationalization of recasts further complicates the results of
45
46 experimental classroom research. Much remains unknown; for instance, what kind of
47
48 recasts work more or less effectively than what kind of prompts, and to what extent do
49
50 prompts contribute to learning due to opportunities for output? Researchers (Lyster &
51
52 Ranta, 2013; Lyster et al., 2013) then argue that CF in the form of treatment should be
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54 documented so that the information obtained can help to interpret any differing
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56 results.
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3 To summarize, within the prolific research that has examined the effects of
4 recasts and prompts on L2 development, there are still issues warranting further
5 investigation. Such issues include the relative effectiveness of recasts and prompts in
6 terms of different classroom contexts and target structures, and whether the effects of
7 prompts are due to output, metalinguistic input, or both. We believe that the claim
8 made by Russell and Spada (2006) a decade ago is still applicable to the current
9 research on CF effectiveness:
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20 Without a sufficient accumulation of studies on any one of these variables and
21 without researchers' attention to the constellation of moderating variables that
22 could make a difference regarding CF effectiveness, we will not be able to
23 establish clear patterns across studies. (p. 32)
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30 **II Research questions**

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32 In order to enhance further understanding of CF effectiveness in L2 development, this
33 study investigated the effects of recasts vs. negotiated prompts on the non-English
34 major university students' acquisition of English question and past tense forms in oral
35 interaction. Four research questions were raised:
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42 RQ1. To what extent will recasts and negotiated prompts facilitate accurate use of
43 Wh- questions, and which type of feedback shows a larger effect?
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48 RQ2. To what extent will recasts and negotiated prompts facilitate accurate use of
49 interrogative questions, and which type of feedback shows a larger effect?
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53 RQ3. To what extent will recasts and negotiated prompts facilitate accurate use of
54 irregular past tense verbs, and which type of feedback shows a larger effect?
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58 RQ4. To what extent will recasts and negotiated prompts facilitate accurate use of
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regular past tense verbs, and which type of feedback shows a larger effect?

III Method

1. *Student participants and their L2 learning environment*

The first-year students from two intact English classes in the physics department at a provincial university in China were invited to participate in the study during the first author's visit to their classes. Ninety students volunteered to take part in the study, of which 72 were females and 18 were males. They all had Mandarin as their mother tongue and were between 17 and 18 years old. They had studied English for six years at secondary school. Their English classes in secondary school were large and delivered with traditional teacher-centered pedagogical practices. At the university, their learning situation did not seem to change much, remaining teacher-centered and grammar-focused but involving the occasional use of language tasks.

2. *The teacher participant and training*

The teacher participant was a native speaker of English from New Zealand and had a Master of Arts degree. He had taught oral English in the School of Foreign Languages at the university for a number of years before the data collection and was willing to assist throughout the study.

The teacher was instructed to use the required form of correction (recasts with the recast group and negotiated prompts with the prompt group) to correct the learners' non-target-like utterances of the target structures. For the provision of recasts, he could negotiate for meaning with a learner if the learner's utterance was

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2
3 incomprehensible to him. For the provision of negotiated prompts, he could provide a
4 negotiated prompt of his choosing to address a learner's non-target-like utterance. If
5 the learner could not provide the correct utterance after being prompted several times,
6 he was instructed to ask another learner to help with the correction. The teacher
7 practiced providing the CF before the experiment commenced.
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18 *3. Design*

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21 The experimental design of the study contained a pre-test, three treatment lessons, and
22 two post-tests, all of which were completed within four weeks. Participant assignment
23 followed the stratified random sampling method. That is, the 90 learners were
24 classified into three levels according to their scores on the National Matriculation
25 English Test, and those at the same level were assigned into the recast, negotiated
26 prompt, and control groups in a random manner. They were briefed about the study
27 procedure on Day 1 and took the pre-test on Day 2. On Days 3–9, the experimental
28 group learners participated in three treatment sessions outside their usual English
29 classes; these sessions were video-recorded for the purpose of documenting the
30 treatment. Immediate and delayed post-tests were administered on Days 10 and 31,
31 respectively. While the control group learners also had their usual English classes,
32 they took the three tests only and did not have any treatment lessons.
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52 *4. Target structures*

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55 The target structures in this study involved questions and the past tense in English.
56 While the complexity of Wh- and interrogative questions varies, questions and regular
57 past tense verbs involve rule-based learning, and irregular past tense verbs involve
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3 exemplar-based learning. Given the variation, this study investigated the effects of
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5 recasts and negotiated prompts on two types of questions (i.e., Wh- and yes/no
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7 questions) and two types of past tense verbs (i.e., irregular and regular past tense
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9 verbs).
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13 The 90 learners were able to use the structures in their spontaneous
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15 communication with the explicit knowledge they had acquired in secondary
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17 schooling. A summary of the descriptive statistics showing the learners' attempts of
18
19 the four structures in the three tests is provided in Appendix A. However, their
20
21 production of the structures included many non-target-like features. They randomly
22
23 varied between the past and present tenses when a consistent use of the past tense was
24
25 required, which is a common phenomenon in L2 production (Han, 2002). Similarly,
26
27 variation existed in their production of varied question types regarding word order and
28
29 accurate use of the moved elements when correct word order was followed (i.e., Wh-
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31 words, auxiliaries/modals/copulas in relation to subjects or main verbs and subject
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33 cases). It is common to see a co-existence of the following questions in a learner's
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35 production: "What *he is* drinking?", "What *are* other people *doing*", "Where is the
36
37 umbrella?", "Where *are* his right arm?", "Is he *sit* the left of the bench or the right?"
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39 and "Is the boy drinking water?". These patterns of variation in L2 learners'
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41 production of questions were also observed in other studies (e.g., Spada & Lightbown,
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43 1993; Smith & Truscott, 2005).
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53 *5. Materials and administration for testing and treatment*

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56 The pre-/post-tests and the treatment lessons comprised various communicative
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58 activities to elicit the learners' oral production of the target structures. The pre-/post-
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3 tests were made up of three versions of oral production tasks (A, B, and C). Each
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5 version contained a warm-up, spot-the-difference, story-discovery, and storytelling
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7 tasks; the second and third tasks were to elicit the learners' use of questions and the
8
9 fourth task was to determine their consistent use of past tense in narrative storytelling.
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11 To avoid any test order effects, the order of the three versions was counterbalanced,
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13 with a version being used by one third of the learners in each group and then rotated.
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18 Pre-, immediate post-, and delayed post-test sessions were all conducted in three
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20 language labs, with an instructor in each lab to control the mainframe computer and to
21
22 supervise the oral test. The first task was the warm-up, which took five minutes,
23
24 during which the learners answered questions about their recent activities. The spot-
25
26 the-difference task also took five minutes, during which the learners were instructed
27
28 to ask questions to discover 20 differences between the picture on their individual
29
30 monitor and a hidden picture. During the third task, story-discovery, four pictures
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32 were shown one-by-one on the monitor, and the learners were given one minute per
33
34 picture to ask questions to discover the story. The last task was the storytelling. The
35
36 four pictures used in the third task, along with another two pictures, were arranged
37
38 sequentially on the monitor. The students then had one minute for preparation and
39
40 subsequently had to tell a story, beginning with "Last Sunday". Most of them finished
41
42 their story within five minutes.
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49 Each of the three treatment lessons comprised 2 x 40-minute sessions. In the
50
51 first session, the learners completed a question task, and in the second, they were
52
53 assigned a task on past tense verbs. The tasks included interviewing vs. sharing
54
55 experiences, spot-the-differences vs. chain storytelling, and guessing objects vs.
56
57 storytelling. The question tasks were carried out either by the teacher interacting with
58
59 a group of students or by one group of students interacting with another group in front
60

1
2
3 of the whole class. For the tasks on past tense verbs, the students were sometimes
4
5 divided in small groups and were given a few minutes for preparation. Then, the tasks
6
7 were carried out by one student speaking in front of the whole class to share/tell a
8
9 story or to add a sentence building up the story. It should be noted that there was no
10
11 grammar instruction on the target structures in the treatment lessons or in the learners'
12
13 usual English classes, despite their usual English classes focusing on language forms.
14
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17
18 The selection of task types used for the test sessions and the treatment lessons
19
20 was based mainly on several previous studies on question and past tense forms (e.g.,
21
22 Han, 2002; Mackey, 1999; Mackey & Philp, 1998; Philp, 2003). All the tasks were
23
24 piloted prior to the data collection and were found to elicit successful oral production
25
26 of the target structures (see sample tasks in the Appendices B and C).
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33 6. *Analyses and coding*

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35 The present study operationalized acquisition as the learners' accurate use of the
36
37 target structures. The accuracy analyses for questions followed Spada and Lightbown
38
39 (1993). The accuracy rate of Wh- questions a learner produced in a test was calculated
40
41 by applying the following formula, and the same calculation was applied to
42
43 calculating the accuracy rate of interrogative questions. A target-like question was
44
45 defined as being not only correct in word order, but also correct in the use of the Wh-
46
47 question word, the auxiliary/modal/copula verb relative to the subject/the main verb,
48
49 and the subject case. This method of analysis examined whether the CF treatment
50
51 could help the learners to become more proficient in their use of question types.
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$$\frac{n \text{ target-like Wh- questions}}{n \text{ total production of Wh- questions}} \times 100 = \text{Percentage frequency}$$

To code questions, certain question utterances were excluded: incomplete and formulaic questions (e.g., “What’s the weather like?”), statement questions with rising intonation (e.g., “The boy is crying?”), and Wh- subject questions (e.g., “Who is near the door?”). For the remaining utterances of questions, each was labeled as a target-like Wh- question or target-like interrogative question when it complied with the above-mentioned definition of being target-like.

The accuracy analyses for regular and irregular past tense verbs adopted target-like use analysis (TLU) (Pica, 1983, p. 33). For instance, to calculate the accuracy rate of irregular past tense verbs that a learner used in a test, we tallied the numbers for correct suppliance of irregular verbs in the obligatory contexts where the past tense was required (i.e., n correct suppliance in obligatory contexts), incorrect suppliance of irregular verbs in the obligatory contexts, and the over-suppliance of irregular verbs in the contexts where the past tense was not required (i.e., n suppliance in non-obligatory contexts). Then we added the first two numbers as n obligatory contexts and applied the three n numbers in the formula below. A similar calculation was undertaken separately for regular past tense verbs.

$$\frac{n \text{ correct suppliance in obligatory contexts}}{n \text{ obligatory contexts} + n \text{ suppliance in non-obligatory contexts}} \times 100 = \text{Percentage accuracy}$$

Three considerations were taken into account when coding past tense verbs. First, the verbs that could be ambiguous in the learners’ oral production were excluded from the analyses. Because the learners in the study had poor pronunciation, it was difficult to differentiate between the present and past tenses of certain verbs in their oral production (such as the present tense form “run” and the past tense form

1
2
3 “ran”). Second, when self-correction or repetition occurred, the learner’s first
4
5 production of the verb was counted as one obligatory context and rated. Finally,
6
7 tokens of past tense were tallied; if a learner used the verb “think” twice at different
8
9 places in their story, then there were two obligatory occasions.
10
11
12

13 A trained research assistant double-coded 15% of the test data, with the inter-
14
15 rater reliability being 97.7%. The inter-rater reliability was then calculated separately
16
17 with 15% of the test data taken from each experimental group. The inter-rater
18
19 reliability was 95.5% for the recast group, 99.5% for the negotiated prompt group and
20
21 98.2% for the control group.
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28 **IV Results**

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31 This section reports the preliminary and main analyses in examination of the research
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33 questions.
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36 *1. Preliminary analyses*

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39 *a. Interaction data.* The interaction data that is presented below was from one
40
41 treatment lesson randomly selected by drawing lots. The tasks involved in the selected
42
43 lesson were guessing objects for questions and storytelling for past tense verbs. In the
44
45 transcription, feedback episodes, feedback moves, and learner responses to feedback
46
47 were identified. A feedback episode starts with a learner’s non-target-like utterance of
48
49 the target structures, which is then addressed by the assigned feedback type, and ends
50
51 with a change back to topic focus or another linguistic form (Ellis, Basturkmen, &
52
53 Loewen, 2001). Feedback moves indicate the type and number of feedback incidences
54
55 provided in the identified episodes.
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3 As summarized in Table 2, three findings are worthy of comment regarding the
4 provision of recasts and negotiated prompts as treatment. First, the two experimental
5 groups received a fairly even number of feedback episodes for the learners' non-
6 target-like utterances of both questions and the past tense. For both groups, the
7 majority of the CF episodes were given to Wh-questions and irregular past tense.
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15 <INSERT TABLE 2 ABOUT HERE>
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17

18 Second, the recast group was provided with recasts and the negotiated prompt
19 group received the vast majority of negotiated prompts, two thirds of which were
20 elicitations. This provision of CF indicated the teacher's consistency in providing
21 feedback according to the experimental conditions. Unsurprisingly, feedback types
22 other than the assigned feedback type occurred; that is, six clarification requests for
23 Wh-questions occurred in the recast group, and four recasts (two for Wh- questions
24 and two for regular past tense verbs) and one incidence of explicit feedback occurred
25 in the negotiated prompt group. As mentioned earlier, the treatment was carried out in
26 the L2 classroom, so pedagogical considerations were necessary, such as allowing
27 meaning clarification when the teacher could not understand a student in the recast
28 group and providing a resolution to the problematic utterance in the prompt group
29 when no student could help with the correction.
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46 A final note addresses the manner of delivery of the two CF types. Most of the
47 recast episodes contained a single CF move and were provided in full reformulation
48 of a learner's non-target-like utterance without stress or chance for repair, as shown in
49 EXAMPLE 1. However, among the 16 recast episodes for the past tense, five learner
50 responses were identified and they were all simple acknowledgments with the word
51 "yeah", as shown in EXAMPLE 2. Negotiated prompt feedback can also be short, like
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3 recasts (EXAMPLE 3). This short episode of negotiated prompt feedback occurred
4
5 only a few times. However, most of the negotiated prompt episodes contained
6
7 multiple negotiated prompt moves and learner responses, and sometimes a negotiated
8
9 prompt triggered multiple responses, with one response or two from the student who
10
11 was interacting with the teacher and one from his/her peers, as shown in EXAMPLE 4
12
13 and EXAMPLE 5.
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15

16 17 EXAMPLE 1

18
19 Recast for question

20
21 S: Is your first object is a famous man?

22
23 T: Is your first object a famous person?

24
25 S: not a person.
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27

28
29 Note: S = speaking student; T = teacher; Ss = peers
30

31 32 EXAMPLE 2

33
34 Recast for past-tense form

35
36 S: All of a sudden, a man behind him who held a stick hitted his head.
37

38
39 T: All of a sudden, a man behind him with a stick hit his head.
40

41
42 S: Yeah.
43

44 45 EXAMPLE 3

46
47 Negotiated prompt for question

48
49 S: Is it glasses?

50
51 T: Is it glasses? (Repetition)

52
53 S: Are they glasses?
54

55 56 EXAMPLE 4

57
58 S: where we can see it?

59
60 T: sorry. (Clarification request)

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2
3 S: where we can see it?
4

5 T: where. (Elicitation)
6

7 Ss: where can we.
8

9 T: where. (Elicitation)
10
11

12 S: where can we see it?
13

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15 EXAMPLE 5

16
17 Negotiated prompt for past tense form
18

19 S: They all very happy.
20

21 T: They (Elicitation)
22

23 S: xx [Silence]
24

25 T: They (Elicitation)
26
27

28 S: They are all very happy.
29

30 Ss: They were.
31

32 S: They were all very happy.
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38 b. *Equivalence of the groups (pre-test results)*. The descriptive statistics of the pre-test
39 scores of the three groups' accurate use of four structures can be found in the main
40 analyses. The one-way ANOVAs showed the three groups were equivalent in the pre-
41 test performances with regard to the learners' accurate use of each structure: $F(2, 87)$
42 $= 1.16, p = .32$ for Wh- questions; $F(2, 77) = .23, p = .80$ for interrogative questions¹;
43 $F(2, 87) = .98, p = .38$ for irregular past tense verbs; and $F(2, 87) = .05, p = .96$ for
44 regular past tense verbs.
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56 2. *Main analyses*
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3 The main analysis for each target structure involved the performance of a mixed-
4 design two-way ANOVA ($p \leq .05$). If the mixed ANOVA found any significant
5 effects, post hoc multiple comparisons, which applied a Bonferroni adjustment to the
6 p value to avoid Type I error (Pallant, 2010), were conducted to detect the significant
7 differences. Parametric statistics, such as ANOVAs, were justified for the analyses
8 based on the large sample size ($n = 30$ in each group) and the results of the normality
9 test (i.e., Shapiro–Wilk test). Partial eta-square (ηp^2) is reported for the mixed
10 ANOVA to show the effect size of a significant difference ($\eta p^2 = .01$ as small effect,
11 $\eta p^2 = .06$ as moderate effect, and $\eta p^2 = .14$ as large effect). Cohen's d is used for any
12 differences found in the post hoc analyses ($d < 0.2$ as small effect, $d > 0.5$ as medium
13 effect, and $d > 0.8$ as large effect).
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32 *a. Effects of feedback on accurate use of Wh- questions.* Table 3 summarizes the
33 descriptive statistics for pre-, immediate post-, and delayed post-test results for
34 learners' accurate use of Wh- questions. In the mixed ANOVA, the additional
35 assumptions of homogeneity of variances and inter-correlations were met. The results
36 indicated a significant time effect, $F(2, 86) = 13.35, p \leq .000, \eta p^2 = .24$, and a
37 significant group effect, $F(2, 87) = 4.19, p = .018, \eta p^2 = .09$. However, the interaction
38 between group and time was not significant, $F(4, 172) = 1.16, p = .33, \eta p^2 = .03$.
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49 <INSERT TABLE 3 ABOUT HERE>
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51 Subsequent post hoc comparisons found that the recast group significantly
52 improved its scores from the pre-test to the immediate post-test ($p = .001$) with
53 medium effects ($d = .73$), and from the pre-test to the delayed post-test ($p \leq .000$) with
54 large effects ($d = .83$). However, neither the negotiated prompt nor the control group
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3 significantly increased their scores from the pre-test to the post-tests. Further
4
5 comparisons regarding the group effect revealed that the differences lay in the
6
7 comparison of the recast group vs. the control group at the immediate post-test (p
8
9
10 = .009, $d = .87$) and at the delayed post-test ($p = .025$, $d = .71$).
11
12

13 In summary, the analyses revealed four significant differences with medium or
14
15 large effect sizes, and all the differences related to the recast group. Therefore, it can
16
17 be concluded that recasts were the only CF that benefited the learners' development
18
19 of Wh- questions.
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26 b. *Effects of feedback on accurate use of interrogative questions.* Table 4 presents the
27
28 descriptive statistics of how the learners in the three groups produced interrogative
29
30 questions in the pre-, immediate post-, and delayed post-tests. Satisfying the
31
32 additional assumptions of homogeneity of variances and inter-correlations, the results
33
34 showed that there was a significant group effect, $F(2, 77) = 4.30$, $p = .017$, $\eta p^2 = .10$,
35
36 and a significant group x time interaction, $F(4, 152) = 3.77$, $p = .006$, $\eta p^2 = .090$, but
37
38 there was no significant effect for time, $F(2, 76) = 1.32$, $p = .27$, $\eta p^2 = .03$.
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43 <INSERT TABLE 4 ABOUT HERE>
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45 Post hoc comparisons revealed that the recast group performed significantly
46
47 better at the delayed post-test compared to the group's pre-test ($p = .012$, $d = .59$) and
48
49 the control's delayed post-test ($p = .001$, $d = 1.01$). Instead, the negotiated prompt
50
51 group significantly outperformed at the immediate post-test with relation to the
52
53 group's pre-test ($p = .038$, $d = .49$) and to the control group's two post-tests ($p = .047$,
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56 $d = .65$ and $p = .003$, $d = .85$, respectively).
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3 It can be seen that both experimental groups made significant improvement at
4 one of the two post-tests and outperformed the control group at one post-test or two,
5 with the effect sizes from medium to large. As there were similar significant
6 differences and similar effect sizes for both experimental groups, it is then logical to
7 conclude that both CF types were similarly beneficial for the learners' development of
8 interrogative questions.
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19 *c. Effects of feedback on accurate use of irregular past tense verbs.* Table 5
20 summarizes the descriptive statistics for pre-, immediate post-, and delayed post-test
21 results regarding the learners' accurate use of irregular past tense verbs. The
22 assumptions of homogeneity of variances and inter-correlations were satisfied. The
23 results showed a significant time effect, $F(2, 86) = 5.04, p = .008, \eta^2 = .11$, a
24 significant group x time interaction, $F(4, 172) = 3.14, p = .016, \eta^2 = .068$, and a
25 significant group effect, $F(2, 87) = 4.94, p = .009, \eta^2 = .102$.
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36 <INSERT TABLE 5 ABOUT HERE>
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38 The results demonstrate that the recast group was the only group that showed
39 significant gains in scores from the pre-test to the delayed post-test ($p = .000, d$
40 $= .80$). Although the recast group achieved considerable gains in scores from the pre-
41 test to the immediate post-test, no significance was reached. With regard to the group
42 differences, the results of both feedback groups were significantly different from
43 those of the control group at the immediate post-test (recasts: $p = .01, d = .80$;
44 negotiated prompts: $p = .015, d = .72$). The recast group also significantly
45 outperformed the control at the delayed post-test ($p = .002$) with large effects ($d =$
46 1.02). In contrast, the results of the negotiated prompt group were not significantly
47 different from those of the control group at the delayed post-test.
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3 In summary, the recast group showed three significant differences in relation
4 to time and group, all with large effect sizes, whereas the negotiated prompt group
5 showed one significant difference in relation to group at the time of the immediate
6 post-test, with medium effect size. As such, the answer to RQ3 is that both feedback
7 types benefited the learners' development of irregular past tense verbs in narrative
8 storytelling, but recasts were more effective than negotiated prompts.
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20 d. *Effects of feedback on accurate use of regular past tense verbs.* Table 6 provides
21 the descriptive statistics for pre-, immediate post-, and delayed post-test results
22 regarding the learners' accurate use of regular past tense verbs. Again, there was
23 satisfaction of the assumptions about homogeneity of variances and inter-correlations.
24 The mixed ANOVA yielded a significant time effect, $F(2, 86) = 4.38, p = .015, \eta^2$
25 $= .092$. There was no significant difference for group x time interaction, $F(4, 170) =$
26 $1.06, p = .38, \eta^2 = .02$, or group effect, $F(2, 87) = 1.14, p = .33, \eta^2 = .025$.
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36 <INSERT TABLE 6 ABOUT HERE>
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38 Post hoc comparisons showed that the negotiated prompt group significantly
39 improved in test scores from the pre-test to the immediate post-test ($p = .012$) and
40 maintained the improvement at the delayed post-test ($p = .027$), both with medium
41 effects ($d = .46, d = .52$). Although the recast group showed gains in scores from the
42 pre-test to the post-tests, this group only approached significance ($p = .06$).
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50 Because the negotiated prompt group achieved significant differences in the
51 multiple comparisons and the recast group did not, the answer to RQ4 is that only
52 negotiated prompts were effective in the learners' accurate use of regular past tense
53 verbs.
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59 **V Discussion**

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3 The present study investigated the effectiveness of recasts and negotiated prompts in
4 accuracy development of questions and past tense verbs in a pedagogical context that
5 focuses on grammar and accuracy. It found that recasts were effective in the accuracy
6 development of Wh- and interrogative questions and irregular past tense, but not in
7 the development of regular past tense. In comparison, negotiated prompts were found
8 to be helpful for the accuracy development of interrogative questions and irregular
9 and regular past tense verbs, but not helpful for the development of Wh- questions.
10 Most of the time, the recasts achieved large effect sizes, but the negotiated prompts
11 achieved only medium effect sizes. See the summary of results in Appendix D. The
12 findings of the present study will be discussed in relation to questions, past tense
13 verbs, and input-providing recasts vs. output-providing negotiated prompts.
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32 1. *Target structures*

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35 a. *Questions*. Several studies found a beneficial role of recasts and prompts for the
36 development of questions (Mackey & Philp, 1998; McDonough, 2005; McDonough
37 & Mackey, 2006). For example, Mackey and Philp (1998) found that recasts helped
38 learners not only to produce a higher stage of questions but also to increase the
39 production of already-acquired question types. McDonough (2005) provided evidence
40 that clarification requests facilitated the production of a higher stage of questions
41 when the learners successfully modified their initial, non-target-like utterances. The
42 present study supports the beneficial role of the two CF types in question
43 development by finding that both recasts and negotiated prompts yielded positive
44 impacts on production of more accurate interrogative questions.
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3 The present study found that Wh- questions with inversions were not amenable
4 to negotiated prompts but highly amenable to recasts. As shown in Table 2, for each
5 treatment group, there were similar numbers of CF episodes targeting this question
6 type (11 episodes for each type of CF). This similarity dispels any role of feedback
7 frequency in the differing effects of recasts and negotiated prompts on Wh- questions
8 with inversion. The differing effects may then result from the interaction of two
9 factors. One factor relates to Wh- questions with inversion being more complex than
10 interrogative questions regarding the number of elements that need to be moved and
11 changed, although both question types are classified as rule-based learning. The other
12 factor relates to the input-providing nature of recasts, which helps to reduce the
13 cognitive load in a learner's processing of complex structures (Mifka-Profozic, 2013).
14 These two factors in conjunction resulted in recasts being beneficial for the complex
15 structure of Wh- questions that involve inversion. Negotiated prompts, on the other
16 hand, cannot play a scaffolding role due to their non-provision of input, thereby
17 leading to a lesser or nil effectiveness in this question type.
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37 It is of interest to note that compared to Wh- questions, interrogative questions
38 received irregular provision of recasts and negotiated prompts (5 episodes for each
39 type of CF) but were responsive to the feedback treatment. This finding may result
40 from the relative simplicity of interrogative questions, and a few episodes of feedback
41 may be sufficient for the learners to gain improvement. This finding, along with what
42 was found for Wh- questions, seems to indicate that frequency of feedback did not
43 contribute to the effectiveness of both feedback types in question forms. Indeed,
44 Mifka-Profozic (2013) also found that recasts were the only CF that worked for the
45 acquisition of a more complex structure, but both recasts and clarification requests
46 facilitated the acquisition of a simple structure.
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6 b. *Past tense verbs*. The findings that recasts were effective only for irregular past
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8 tense verbs but that negotiated prompts were effective for both irregular and regular
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10 types are congruent with the findings of Yang and Lyster (2010). Such findings may
11
12 be explained in terms of the salience of structure and the manner of CF provision.
13
14 Yang and Lyster state that irregular past tense verbs are salient due to their distinctive
15
16 pronunciations from the base verbs and high frequency of use. In this study, the
17
18 salience of irregular past tense verbs was enhanced by a majority of instances of
19
20 recasts and negotiated prompts being provided to this structure (see Table 2: 11
21
22 episodes for each type of CF). In contrast, regular past tense verbs have low salience
23
24 because the addition of a voiceless *-ed* is less noticeable and semantically redundant
25
26 (DeKeyser, 1998; Ellis, 2007). Adding to its low salience, regular past tense was
27
28 provided with fewer instances of recasts (5 episodes) and negotiated prompts (7
29
30 episodes). Given the differences in salience and frequency of recasts, it may be little
31
32 wonder that recasts were effective in the development of irregular past tense verbs but
33
34 not in the development of regular past tense verbs.
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41 Compared to the consistent provision of implicit recasts (e.g., full
42
43 reformulation, single move, no prosodic stress, and no uptake opportunities), the
44
45 provision of negotiated prompts tended to be explicit. Most of the episodes contained
46
47 multiple prompt moves, and two-thirds of the moves were elicitations, which is a type
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49 of CF toward the explicit end on the implicit/explicit feedback scale (Lyster et al.,
50
51 2013). Moreover, each of the negotiated prompts afforded an opportunity for uptake,
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53 and if a learner could not produce a successful uptake after being prompted several
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55 times, the teacher asked for peer help. For regular past tense verbs with low salience,
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57 the explicitness of negotiated prompts was likely to draw the learners' attention to
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3 their problematic production of these verbs, despite the feedback on this structure
4 being infrequently provided. Given irregular past tense verbs owning high salience
5 and being frequently provided with feedback, the explicitness of negotiated prompts
6 would, of course, make the learners more aware of their problematic production of
7 these irregular past tense verbs. As such, in the current study, negotiated prompts
8 were found to be effective for both types of past tense verbs. However, the impact that
9 negotiated prompts yielded on the two types of past tense verbs did not seem to
10 exhibit any distinctive difference.
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22 In addition to the difference in salience between the two kinds of past tense
23 verbs, salience pertains to the comparison of questions and the past tense. Researchers
24 (N. Ellis, 2004; VanPatten, 1996; VanPatten et al., 2004) argue that questions carry
25 higher communicative value and are perceptually more salient than morphological
26 forms, such as the past tense. This difference seems to offer an explanation to the
27 finding that although recasts were implicit, they were effective for both question types
28 and that because negotiated prompts tended to be explicit, they were effective for the
29 learners' increased control in the use of the two types of past tense verbs.
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44 *2. Input-providing and output-promoting CF*

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47 Despite the finding that the effects of both recasts and negotiated prompts were
48 structure dependent, another trend emerged. That is, recast effectiveness was usually
49 associated with large effect sizes, whereas the effectiveness of negotiated prompts
50 was usually with medium effect sizes. These results were in contrast to Yang and
51 Lyster's study (2010), which found that large effect sizes were associated mainly with
52 the prompt group. It then can be argued that recasts showed a certain advantage over
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3 negotiated prompts in this study, whereas prompts were advantageous to recasts in
4
5 Yang and Lyster's study.
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8 The advantage of recasts as found in the present study may result from their
9
10 provision of input. Because the learners were irregularly exposed to language tasks
11
12 for communication and were not explicitly informed of what their errors were through
13
14 metalinguistic clues, they may have needed the input in recasts to scaffold their
15
16 noticing of a gap in their production, conducting of a cognitive comparison and
17
18 realizing of form and function mapping (Doughty, 2001; Long, 1996, 2007). As
19
20 discussed earlier, Mifka-Profozic (2013) emphasized the scaffolding role that recasts
21
22 play in the FL context where the instructional focus is on grammar and accuracy.
23
24 However, we have to acknowledge at the same time that the target-like utterances in
25
26 recasts may serve as exemplars for some learners (Leeman, 2003; Nicholas et al.,
27
28 2001).
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33 On the other hand, output-promoting negotiated prompts may be
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35 disadvantageous for some of our learners. Batstone (2002) believes that pushed output
36
37 can be face-threatening and risk-taking, and that L2 learners need time to develop the
38
39 risk-taking behavior that facilitates pushed output. Because the learners in the present
40
41 study were given little time for speaking up in their English classes, they may have
42
43 been anxious and unwilling to take risks when pushed for output. Therefore, there is
44
45 no guarantee that they were able to access the rule-based knowledge system through
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47 prompts and apply it in their responses, even if they had ample grammatical
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49 knowledge of the target structures. As shown in EXAMPLES 4 and 5 earlier, the
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51 learners could not self-correct their initial utterances until the peer students provided
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53 the corrections.
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3 The finding that our learners had difficulty in modifying their output following
4 negotiated prompts is different from that in Yang and Lyster's study (2010). Yang and
5 Lyster found that prompts consistently elicited successful uptake from their learners,
6 and then attributed the greater effectiveness of prompts partly to the self-repair being
7 elicited. The L1 Chinese learners in Yang and Lyster were second-year English-major
8 university students, whose classes were all conducted in English during their four-
9 year study and who had the intended purpose of becoming competent in their all-
10 round use of the L2. After being exposed to an extensive amount of input and being
11 conscious of practicing their spoken English, they may have developed the risk-taking
12 behavior when pushed for output. With the development of risk-taking behavior, the
13 provision of an explicit prompt in the form of metalinguistic clues and the receiving
14 of form-focused instruction, it may not be surprising that the learners in Yang and
15 Lyster were able to modify their output after prompts and then made substantial gains
16 in learning.
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39 **VI Conclusions**

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42 The current study investigated the effects of recasts and negotiated prompts on the
43 development of questions and past tense verbs among 90 adult learners in an FL
44 environment in China. The results show that both CF types were effective for the
45 accuracy development of three structures, but not effective for one structure.
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47 However, the results show that recasts generated strong effects, but negotiated
48 prompts yielded mainly medium effects.
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56 The positive effects of CF that were found in this study, especially recasts, on
57 accuracy development in an FL learning context with grammar-focused instruction
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3 encourage teachers to devise various strategies to provide CF in their teaching.
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5 Information on the role of CF in accuracy development could be provided to all
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7 teachers in their in-service and pre-service training. Types of CF can be chosen
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9 according to target structures and instructional focuses. Recast feedback can be brief
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11 and given in a single move and non-segmentally when the structure is salient and the
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13 instructional focus is on grammar and accuracy. However, for negotiated prompt
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15 feedback, such as clarification requests and even elicitations, the corrective intention
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17 may need to be made clear in certain contexts, such as the context of the present
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19 study, so that students will be encouraged to revise their initial utterance.
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25 The results of the present study have enhanced understanding of the
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27 effectiveness of recasts and negotiated prompts in L2 classroom learning; however,
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29 the study had certain limitations, which can be addressed in future research. First, a
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31 limitation exists in the involvement of a control group, which took the three versions
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33 of the test without receiving any task-based treatment lessons. The positive outcomes
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35 for the two experimental groups may have resulted partly from the provision of CF,
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37 but also partly from the extra practice that the three treatment lessons provided. Future
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39 research needs to include a control group that has the lack of provision of CF as the
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41 only variable differentiating it from the experimental groups; therefore, any gains in
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43 the post-test scores can be purely credited to the feedback treatment.
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49 A second limitation lies in the delivery of recasts and negotiated prompts. As
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51 the present study was carried out in a classroom context, pedagogical issues were
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53 considered in the operationalization of the feedback; for example, allowing the
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55 teacher's occasional negotiation for meaning with the learners in the recast group
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57 when he did not hear or understand the learners' utterances, or allowing the teacher to
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59 seek peer correction when the learners were not able to self-correct after being
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3 prompted several times. These considerations resulted in the occasional provision of
4 clarification requests within the recast group, and of recasts and explicit feedback
5 within the negotiated prompt group, but the two experimental groups were obviously
6 distinguishable with regard to the vast majority of the CF they received.
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13 Furthermore, because the provision of CF depended on the learners' non-
14 target-like production of the target structures, this study could not predict which target
15 structure the learners would use more and/or which target structure the learners would
16 produce more errors in, especially for the differences in production between Wh- and
17 interrogative questions and between the regular and irregular past tense verbs. This
18 unpredictability subsequently resulted in more instances of recasts and negotiated
19 prompts being provided to Wh- questions and irregular past tense verbs and fewer
20 instances of both CF types to interrogative questions and regular past tense verbs,
21 although there were similar instances of both CF types being provided to the same
22 structure. While the provision of similar instances of recasts and negotiated prompts
23 on one structure did not affect the aim of the study to compare the effects of the CF on
24 the structure, the unevenness of CF provision across structures may contribute to the
25 CF being effective for one structure but not the other structure. While eliciting
26 learners' natural production of different target structures, future classroom studies
27 need to work out a method to control and balance the provision of CF so that feedback
28 frequency can be dismissed as being a contributing factor to the efficacy of the
29 feedback. Furthermore, as indicated in the discussion section that feedback frequency
30 did not seem to contribute to CF efficacy on the question form and may have affected
31 CF efficacy on the past tense form, future studies need to clarify the interacting
32 effects between feedback frequency, feedback types and target structures.
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3 The present study also excluded metalinguistic clues in the operationalization
4 of the prompt feedback, which is different from most previous experimental
5 classroom research. With this current operationalization, recasts became a favorable
6 CF technique for Wh- questions and irregular past tense verbs in an FL learning
7 environment with grammar-focused instruction. It would be interesting to test the
8 effects of recasts against metalinguistic clues in the same learning environment. It
9 would also be interesting for future research to follow the current operationalization to
10 test the effects of recasts and negotiated prompts on different structures in varied
11 classroom contexts with learners at different proficiency levels.
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25 Thirdly, the testing instrument used in the study was only of one type, the oral
26 production test, due to the limited availability of time for the volunteer learners.
27 Although our learners had grammatical knowledge of the target structures, we were
28 not able to measure their explicit knowledge through written tests and grammaticality
29 judgment tests. Future studies that compare the efficacy of recasts and prompts in L2
30 classroom learning should employ a variety of testing measures in their
31 methodological design.
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41 **Note**

- 42 1. Ten learners were removed from the analysis regarding the effects of recasts and
43 negotiated prompts on interrogative questions, because the learners' production of
44 this question type was not consistent across the three tests. Specifically, they did
45 not produce interrogative questions in one of the pre-test, the immediate post-test
46 or the delayed post-test, and then the data related to their production of this
47 question type became outliers in the ANOVA analyses. Of the 10 learners, two
48 learners were from each of the experimental groups and six from the control
49 group. Other than the 10 learners, the rest of the learners produced interrogative
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questions in a relatively consistent manner.

For Peer Review

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TABLE 1

Classroom Experimental Studies – Study Design and Contextual Variables

	Context	Class size	Treatment (duration, type)	Prompt type	Target structure(s) and mode of testing	Frequency of CF
Lyster (2004)	bilingual French program; 10-11 yr old, 3 schools, Canada	20-25	8-10 hrs over 5 wks; FFI + recasts or prompts, FFI only and control	elicitation, repetition, CR, MC	grammatical gender; written and oral production	not known
Amaar & Spada (2006)	intensive English class; Canada; N=64, 3 teachers	not specified	30-35 mins x 12 over 4 wks; recast, prompt and control	elicitation, repetition, MC	third person possessive; oral; listening	not known.
Ellis (2007)	general English class; private language school; adults; NZ	10-12	1 hr over 2 days; recast, MC, and control	MC	past tense verbs; comparative	recasts 42 (past), 22 (comparative); MC 25 (past), 19 (comparative)
Loewen & Nabei (2007)	general English class at university, adults,	4 in each group	30 mins (recast, CR, MC, and no	CR and MC	question forms; GJT, oral production	recasts 18.7; CR 18; MC 5.6

	Japan			feedback)		tasks	
Yang & Lyster (2010)	general English class at university, English major students, adults, China	22-25	2 hr over 2 wks; recast, prompt and control group	MC, CR, elicitation, repetition	regular and irregular past tense verbs; oral and written production	prompt 27; recasts 20	
Mifka-Profozic (2013)	French, Croatia, 2 secondary schools Year 11-12	18 each	20-25 mins per treatment over 3 wks; recast, CR, and control	CR	passé compose, imperfait; oral and written production	CR 40; recasts 68	
van de Guchet et al. (2015)	14 year old (9 th grade), German, N=64; secondary school in the Netherlands	20-23 per class	1 hr per week over 3 wks; recast, prompt and control	MC followed by elicitation	dative and comparative; written and oral production	not known.	
Gooch et al. (2017)	English learners at a Korean university	6-9	4 hrs over 2 wks FFI + recasts or prompts, FFI only	CR followed by elicitation	/ɪ/ pronunciation	recasts (68) prompts (97)	

Note: CR = clarification request; MC = metalinguistic clues;

TABLE 2

Distribution of Feedback Episodes, Feedback Moves and Learner Responses

Groups	Feedback Episodes	Feedback Moves		Responses	
		Assigned Feedback	Other Feedback		
Recasts	Wh-	11	11	6	0
	Interrogative	5	5	0	0
	Irregular	11	11	0	4
	Regular	5	5	0	1
Negotiated prompts	Wh-	11	22	2	29
	Interrogative	5	9	1	9
	Irregular	11	21	0	29
	Regular	7	6	2	6

TABLE 3

Descriptive Statistics of Pre-, Immediate Post- and Delayed Post-tests for Wh- Questions

Groups (<i>n</i> =30 each)	Pre-test		Immediate post-test		Delayed post-test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Recasts	.53	.15	.64	.15	.65	.14
Negotiated prompts	.52	.19	.59	.22	.59	.19
Control	.47	.17	.49	.19	.53	.20

TABLE 4

Descriptive Statistics of Pre-, Immediate Post- and Delayed Post-tests for Interrogative Questions

Groups	Pre-test		Immediate post-test		Delayed post-test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Recasts (<i>n</i> =28)	.69	.16	.73	.18	.79	.16
Negotiated prompts (<i>n</i> =28)	.66	.22	.76	.19	.77	.21
Control (<i>n</i> =24)	.68	.20	.63	.21	.58	.24

TABLE 5

Descriptive Statistics of Pre-, Immediate Post- and Delayed Post-tests for Irregular Past Tense Verbs

Groups (<i>n</i> =30 each)	Pre-test		Immediate post-test		Delayed post-test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Recasts	.46	.18	.53	.20	.60	.18
Negotiated prompts	.47	.21	.52	.22	.50	.23
Control	.41	.18	.37	.20	.41	.18

TABLE 6

Descriptive Statistics of Pre-, Immediate Post- and Delayed Post-tests for Regular Past Tense Verbs

	Pre-test		Immediate post-test		Delayed post-test	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Groups (<i>n</i> =30 each)						
Recasts	.52	.23	.62	.19	.62	.17
Negotiated prompts	.54	.22	.64	.18	.65	.21
Control	.54	.26	.57	.24	.53	.26

Appendix A

Summary of the learners' attempts in using four target structures

Descriptive Statistics of the Learners' Attempts of Four Target Structures (Pre-test)

Groups (<i>n</i> =30 each)		<i>M</i>	<i>SD</i>
Recasts	Wh-	51.90	15.33
	Yes/no	18.63	12.39
	Irregular	21.87	6.80
	Regular	10.67	3.69
Negotiated prompts	Wh-	48.10	13.42
	Yes/no	20.53	12.68
	Irregular	21.57	5.58
	Regular	11.03	4.35
Control	Wh-	54.47	15.21
	Yes/no	14.37	9.06
	Irregular	22.67	8.44
	Regular	10.57	4.47

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3 *Descriptive Statistics of the Learners' Attempts of Four Target Structures*
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12 *(Immediate Post-test)*

Groups (n=30 each)		<i>M</i>	<i>SD</i>
Recasts	Wh-	62.03	21.52
	Yes/no	18.57	11.72
	Irregular	20.20	8.48
	Regular	10.63	2.90
Negotiated prompts	Wh-	55.23	22.85
	Yes/no	17.40	11.99
	Irregular	19.47	6.72
	Regular	11.70	3.48
Control	Wh-	61.97	21.47
	Yes/no	15.40	10.06
	Irregular	20.57	6.34
	Regular	11.23	4.07

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3 *Descriptive Statistics of the Learners' Attempts of Four Target Structures (Delayed*
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5 *Post-test)*
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Groups (<i>n</i> =30 each)		<i>M</i>	<i>SD</i>
Recasts	Wh-	59.63	17.61
	Yes/no	16.80	11.22
	Irregular	19.50	5.37
	Regular	12.87	4.38
Negotiated prompts	Wh-	58.70	18.97
	Yes/no	16.13	11.46
	Irregular	20.80	6.20
	Regular	11.43	3.72
Control	Wh-	60.57	17.42
	Yes/no	14.07	11.53
	Irregular	22.63	6.76
	Regular	11.77	6.16

Appendix B

Samples of the Tests

I: Warming up

Directions:

Please use English to describe how you spent your winter holiday.

II: Spotting the difference

Directions:

1. Two pictures are similar but have 20 differences between them. One picture will be shown on your computer's monitor, and the other is hidden.
2. You have to ask as many questions as you can to identify the differences between the two pictures. Please imagine that someone will answer all your questions after you finish so that you can find the differences.
3. Please start now.

III: Story discovery

Directions:

1. Four pictures will be shown one by one on your computer's monitor. When each picture is shown, you have one minute to ask questions. Please imagine that someone will answer all your questions so that you can figure out details about the story.
2. Now let's look at the four pictures one by one.

Iv: Storytelling

1. Let's look at the whole set of the pictures (6 pictures). You have one minute to prepare a story in detail. The story must start with: **Last Sunday...**
2. Please start to prepare now.
3. Please start to tell your story now: **Last Sunday...**

Appendix C

Sample of the treatment Lessons

Guess the object: Questions (40 minutes)

1. Divide the class into groups of three or four and ask each group to make a list of three or four subjects. The subjects could be famous people, famous books, TV programs or anything else.
2. Guide the students to make a list. It would be better if they know how to describe the items on their list in English.
3. One group stands in front of the class, and the rest of the class guesses the objects by asking questions.
4. The limit for each object is seven questions.
5. Give a point to the guessing group if the object is guessed within the number of questions allowed, and also give a point to the other group if the object is not guessed.
6. Total the points to decide the winner.

Story Building: Past Tense Form (40 minutes)

1. The teacher divides the students into groups of four or five and gives each group a set of pictures in random order.
2. The group has 2 or 3 minutes to reorder the pictures and then to make up a story based on the sequence of their pictures.
3. The story should be **creative and detailed, starting with “Last Sunday”**.
4. After the group discussion, each group will tell their story.
5. The whole class decides which group’s story is the best.

Appendix D

Summary of the Findings (Main analyses)

Significant Within-group Contrasts and Magnitude of Effects

Test	Pre vs. Imm	Pre vs. Delayed	Imm vs. Delayed
Wh- Question			
Recasts	Medium ($d = .73$)	Large ($d = .83$)	ns
Negotiated prompts	ns	ns	ns
Control	ns	ns	ns
Interrogative			
Recasts	ns	Medium ($d = .59$)	ns
Negotiated prompts	Medium ($d = .49$)	ns	ns
Control	ns	ns	ns
Irregular past tense			
Recasts	ns	Large ($d = .80$)	ns
Negotiated prompts	ns	ns	ns
Control	ns	ns	ns
Regular past tense			
Recasts	ns	ns	ns
Negotiated prompts	Medium ($d = .46$)	Medium ($d = .52$)	ns

Control ns ns ns

Significant Between-group Contrasts and Magnitude of Effects

Test	Recasts vs. Control	Prompts vs. Control	Recasts vs. Prompts
Wh- Question			
Immediate post-test	Large ($d = .87$)	ns	ns
Delayed post-test	Medium ($d = .71$)	ns	ns
Interrogative			
Immediate post-test	ns	Medium ($d = .65$)	ns
Delayed post-test	Large ($d = 1.03$)	Large ($d = .85$)	ns
Irregular past tense			
Immediate post-test	Large ($d = .80$)	Medium ($d = .72$)	ns
Delayed post-test	Large ($d = 1.02$)	ns	ns
Regular past tense			
Immediate post-test	ns	ns	ns
Delayed post-test	ns	ns	ns
