

Persian Speakers' Recognition of English Relative Clauses: The Effects of Enhanced Input vs. Explicit Feedback Types

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Abstract

Despite consensus in focus on form (FOF) instruction over the facilitative role of noticing, controversy has not quelled over ways of directing EFL learners' attention towards formal features via implicit techniques like input-enhancement or explicit metacognitive feedback and interactive peer-editing on the output they produce. This quasi-experimental study investigated the impact of input enhancement (IE), metalinguistic feedback (MF), and peer-editing (PE), on 73 intermediate female Iranian EFL learners' recognition of relative clauses (RCs). The participants, in three intact classes ranged in age between 18 and 30, were randomly assigned as IE (N=23), MF (N=29), and PE (N=21) groups. The 18-session treatment in all groups was based on identical teaching materials and methodology following a reading to writing orientation focused on RCs. The only difference was related to the focus on form that was through enhanced reading texts in the IE group, metalinguistic feedback on discussion of content in the MF group, and peer-editing in pair-discussion of the content in the PE group. Two parallel sets of 40-item multiple choice researcher-made validated tests focused on RCs were employed to measure the participants' recognition of RCs at the onset and the end of the study. The one-way between-groups analysis of covariance demonstrated significantly higher gains in the MF and PE groups compared to the IE group; the MF achieved higher levels of mastery. The findings highlight the effectiveness of MF and offer implications for more effective teaching of RCs to Iranian EFL learners.

Keywords: accuracy, focus on form instruction, input enhancement, metalinguistic feedback, peer-editing, relative clauses

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INTRODUCTION

The pendulum in educational contexts has swung back and forth in the controversy surrounding form and function in language teaching and it might be an illusory hope for this pattern to disappear in the new millennium. Yet, since the last quarter of the twentieth century, the form-function tension in language teaching has been superseded by attempts to address the grammar gap in task work (Richards, 2001) through awareness-raising and conscious or subconscious focus on form. Recent developments in applied linguistics have underscored the role of implicit and explicit focus on form (FOF) instructional interventions that can mitigate the effect of crosslinguistic structural differences and facilitate the learning process for plethora of learners in EFL and ESL contexts. Proponents of implicit FOF speculate that provision of structured input provides the necessary condition for drawing learners' attention to formal features and suggest various forms of input-enhancement techniques that can promote learners' perception of formal features in meaning-oriented activities (VanPatten, 2004). Others, however, claim that the triggering effect of exposure is not sufficient and should be bolstered through feedback which can be offered implicitly or explicitly to sensitize learners' attention to the mismatches between their own output and the target language forms (Lyster & Ranta, 1997; White, 1988). The advocates of explicit FOF emphasize the role of explicit focus on form viably through consciousness-raising (CR) activities that can be implemented prior to, during, or at the end of the instruction to ensure noticing through conscious linguistic search, and thereby, the transformation of input into intake and subsequent output (Doughty & Williams, 1998; Long, 1996; Swain, 1985, Swain & Lapkins, 1995, Tomasello & Herron, 1989; Van Lier, 1995). Implicit feedback techniques such as *recast*, or the teacher's reformulation of all or part of a student's utterance excluding the error (Ellis, et. al, 2006), have been advocated for being less threatening. However, many researchers have endorsed explicit feedback for their precise nature in drawing learners' attention (DeKeyser, 1993; Doughty & Varela, 1998; Ellis, Loewen, & Erlam, 2006; Lyster & Ranta, 1997). Yet, a major criticism leveled against this feedback type, particularly when provided by the teacher, concerns its threatening effect on the learner. Hence, peer-feedback, which is mostly provided through peer-editing, has been suggested as an alternative to precisely directing learners' attention and enhance their

learning (Lundstorm & Baker, 2009; Min, 2008). Nonetheless, the optimal selection of implicit and explicit attention-focusing techniques seems to hinge on several variables including the type of error, the extent to which it hampers communication, and the source of error.

Relative Clauses (RC) errors are universal in nature and linger on for years. These universal features, as suggested by Izumi (2003), have unique syntactic properties and are the most commonly used structures that serve to modify a noun phrase (Velupillai, 2012). The formation of RCs entails embedding which is one of the most distinctive features of language as a cognitive system (Gibson, Desment, Grodner, Watson, & Ko, 2005). Yabuki-Soh (2007) proposed that owing to the complexity involved in their formation, accurate processing and use of RCs is often regarded as the last obstacle for learners to overcome. In many cases, the processing difficulties, as suggested by Schachter (1974), may predispose learners to avoid RC structures and lead to covert relativization errors in their basic communication. Ellis (2004) explained the difficulty in terms of realizing the noun phrase that the RCs might modify, the functions that the relative pronoun can serve and, by means of that, deciding on appropriate Relative Pronouns (RPs). Of central interest is the examination of how learners deal with variation over which elements in the RC may be relativized, Xiaorong (2007) suggests that some EFL learners may manage to overcome such difficulties while the intricate nature of embedding impedes the natural use of RCs and RPs for many others (Seifoori & Fatahi, 2014; Zare-ee & Farvardin, 2009).

Persian allows all different types of relativization that are present in English; however, Persian and English RCs differ in a number of ways (Karimi, 2001). First, there is a relative particle ‘-I’ attached to the head noun in all restrictive clauses in Persian while English lacks this particle. Secondly, unlike English RCs that are introduced by variant RPs following the head noun phrases, all RCs in Persian are introduced by the invariant relative complementizer ‘*ke*’ which follows the head noun (Karimi, 2001; Taghavipour, 2005) and serves the same function as English RPs. Moreover, Persian allows either a gap or a clitic pronoun, representing the missing head noun, within the CP (Abdolmanafi & Rahmani, 2012). Another basic difference relates to pronoun retention; English does not permit resumptive pronouns (Comrie, 1989), whereas Persian speakers use them with indirect objects, objects of preposition, and genitive case (GEN).

Exploration of the way learners process RC structures, hence, can elucidate processing difficulties that second and foreign language learners encounter (Gass & Selinker, 2001; Gibson & Wu, 2008). Previous research studies of RCs have delved into the implicational universals of language (Keenan & Comrie, 1979) which reflect the ease of relativization or the difficulty order of different types of relative clauses (Doughty, 1991; Eckman, Bell, & Nelson, 1988; Gass, 1979; Hamilton, 1994; Izumi, 2003; Sadighi, 1994; Sadighi & Jafarpur, 1994). Others have examined the effects of L2 instruction on RC as a target item (Ammar & Lightbown, 2004; Doughty, 1991; Gass, 1982). However, to the best of our knowledge, no previous research has addressed the impact of input enhancement and explicit feedback types on EFL learners' recognition of RCs. The present study was inspired by the unresolved controversy over the role of positive and negative evidence in language learning and set out to investigate the effectiveness of input enhancement, as an implicit focus on form, with those of metalinguistic awareness and peer-editing, as two explicit techniques on Iranian EFL learners' recognition of RCs as a highly frequent error produced by Iranian EFL learners.

LITERATURE REVIEW

Learning of RCs pose a major challenge to many EFL learners who decide to either skip these complex structures through avoidance (Chang, 2004; Seifoori & Fatahi, 2014; Tavakolian, 1977) or confront mostly at the cost of reduced accuracy (Fedorenko, Piantadosi, & Gibson, 2011; Xiaorong, 2007). Chang (2004) explored the difficulties that 237 Chinese English-major freshmen encountered in a test on RCs and in producing RCs in writings. The findings revealed that around 48% of the participants did not employ any RC at all and, if any, the majority limited their application to one RC with object RCs used more frequently. They also preferred to embed RCs in the matrix object position supporting Kuno's (1974) Perceptual Difficulty Hypothesis (PDH) according to which center-embedded syntactic construction interrupts the flow of the sentence and strains more on the short-term memory and is, thus, perceptually more difficult than the right- or left-embedded construction.

Similarly, Xiaorong (2007) analyzed the frequency of the occurrence of RPs in lower positions on the Noun Phrase Accessibility Hierarchy (NPAH) and in center-embedded RCs (SS and SO) and right-branching

RCs (OS and OO) based on picture elicitation, sentence combination, and grammaticality judgment tasks administered to 120 Chinese EFL learners at intermediate and advanced levels. The outcomes revealed the agreement of the frequency of RPS with the reverse order of the implicational hierarchy of NPAH. No correlation, however, was found between occurrence of RPs and the types of RCs.

In another study, Fedorenko et al. (2011) explored the role of supportive contexts in processing subject and object RCs to find out if the local discourse context would eliminate the object vs. subject-extraction complexity effect. They noticed a larger difference between object and subject RCs in supportive contexts compared to null contexts and proposed that the difference might be attributed to either the presence of supportive context or the different experimental procedures.

Likewise, Iranian researchers have addressed the challenge Persian speaker EFL learners have to encounter when learning RCs (Marefat & Abdollahnejad, 2014; Rezai, 2011; Sadighi, 1994; Sadighi & Jafarpur, 1994, among others). Rezai (2011) investigated the use of RPs and the acquisition of uninterpretable features by 60 Persian learners in both intermediate and advanced levels that completed a 45-item grammaticality judgment test. The statistical analysis revealed that intermediate learners were significantly more variable in their use of RPs compared to the advanced counter group. Additionally, no significant difference was reported between the groups' performance on subject extraction context compared to other contexts.

In another study, Abdolmanafi and Rezaee (2012) employed sentence combination tasks and grammaticality judgment tests to examine 92 EFL learners' underlying knowledge of English RCs and the factors constraining their learning processes based on three predictor hypotheses. The findings revealed that the process of all RCs was constrained by the universal markedness and by NPAH except that of GEN. The learners were also found to experience more problems learning center-embedded RCs which matched Perceptual Difficulty Hypothesis (Kuno, 1974) asserting that processing center embedded RCs is perceptually more demanding than right branching RCs and, on this account, suggested that OS and OO should be easier to learn than SS and SO (Doughty, 1991; Schumann, 1980). The learning process of RCs was found to be predicted by SO Hierarchy Hypothesis (SOHH) (Hamilton, 1994). According to SOHH, center embedding of RC sets reflects a processing discontinuity in the main clause. The results of the

grammaticality judgment test revealed the participant's greater difficulty in learning typological least marked position like SU compared to marked ones.

Besides, Enjavinezhad and Paramasivam (2014) scrutinized the development of Persian speakers' interlanguage in terms of RCs and RPs based on the Full Transfer Full Access (FTFA) Hypothesis (Schwartz & Sprouse, 1996) and employing a grammaticality judgment task. The research findings conformed to the predictions made by 'full-transfer' claim of the FTFA and revealed that advanced learners could reconstruct the rule based on the L2 system.

PURPOSE OF THE STUDY

Most studies of Persian speakers learning RCs have deployed grammaticality judgment tests to find out cross-linguistic influences in RC acquisition. Very few researchers, if any, have examined the effect of feedback types on enhancing the learners' recognition of the same structures. Hence, this study aimed at investigating the impact of the three feedback types of MF, IE, and PE, on intermediate Iranian EFL learners' recognition of RCs. To serve the purpose, the following research question was formulated:

Is there a significant difference in the recognition of relative clauses (RCs) among the IE, MA, and PE groups while controlling for their pre-test scores?

The focus on recognition might be substantiated in terms of levels of learning which might be envisaged as a five-stage process comprising input, intake, acquisition, access, and output (Ellis, 1994; Skehan, 1998). Perception of the meaning and form may occur either at the level of exposure to input and ignite the language learning process through various input-enhancement techniques or through various feedback types on learners' output. Such techniques along with other factors like complexity, saliency, and frequency of the features, on the one hand, and the needs of the learners, on the other, can help to convert input into intake, and thereby, to acquisition via noticing (Schmidt, 1990; Schmidt & Frota, 1986).

METHOD

Participants

The participants in this quasi-experimental study comprised a convenient sample of 73 female intermediate Persian-speaker EFL learners within the range of 18-30. They were studying general English in three intact classes at Ostadan Language Institute in Tehran. The sample was recruited from a population of approximately 120 participants in six intermediate classes based on their performance on a Preliminary English Test (PET). The selected groups were randomly assigned as the metalinguistic feedback (MF) group (N=29), the input enhancement (IE) group (N=23), and peer-editing (PE) group (N=21). They had English classes two sessions a week and ninety minutes per session. The materials taught in the three groups was English Results Intermediate Book during the integrated-skill course; it includes 12 units which are covered in four semesters. It also offers different sentence combining techniques including restrictive RCs to motivate students to produce more descriptive speeches and thereby to enhance their proficiency.

Instrumentation

In order to collect the research data, we employed two sets of instruments. A modified version of PET (2012), comprising listening and reading sections, was utilized to verify the participants' initial homogeneity in listening and reading comprehension. The speaking and writing subcomponents of PET were excluded since the focus of the study was on recognition of RCs.

The second instrument employed was an 80-item focused grammar (FG) test employed to measure the participants' recognition of RCs. It included 40 multiple-choice items (MCI) and 40 error-correction (EC) items that had been selected from Longman Complete Course for the TOEFL Test (2001) and various available TOEFL mock exams. The test was initially piloted to estimate its reliability, which was proved to be acceptably high (.81). Further, it was sub-divided into two parallel tests of 40-item, each comprising 20 MCI and 20 EC items addressing the use of six categories of subject (SU=8), direct object (DO=7), indirect object (IO=8), Genitive (GEN=7), Place (PL=5), and Time (T=5) based on Keenan and Comrie (1979). The tests were administered at the onset of the study to verify the groups' initial homogeneity in their recognition of

RCs and as the post-test at the end of the study to detect the impacts of the instructional variables.

Data Collection Procedure

The treatment began following the pre-test during which all the groups received the same amount of instruction based on identical content and methodology. Each session lasted for 90 minutes twice a week, and for eight running weeks; the classes were taught by one of the researchers. Owing to the focus of the study, restrictive RCs were maintained in the focus during all teaching sessions. The RC structures were initially divided into RC types and each of the types was presented explicitly and similarly in all the groups every session. Depending on the three instructional conditions, the formal constructs of RCs were practiced interactively based on picture description activities and reading tasks that were performed in the form of whole class discussion in the MF and IE groups and pair discussion in PE group. Further, the formal features of each RC type were practiced through supplementary reading texts. The texts were identical in MF and PE group but were enriched with more instances of RCs which were highlighted for the IE group to draw the participants' attention to the formal features.

The MF Group

In the MF group (N=29), the original reading texts were covered through a three-stage approach of pre-reading, reading, and post-reading. During the pre-reading stage, the teacher would present new vocabulary items along with the particular type of RCs designed for that session through description of pictures that were related to the text. The focus of the questions was on RCs in a way to encourage students to use them in their responses. The RC structures would then be presented on the board and the participants were invited to combine similar sentences based on the teachers' picture-based questions. The pre-reading would end with highlighting a number of questions for the students to answer while reading. The participants would then begin their silent reading of the text to answer the predetermined questions.

The post-reading stage comprised eliciting answers from the students and engaging them in describing another picture that was presented as a supplementary material. The focus of this activity was on RCs and the questions were posed in a way to motivate the participants

to use RCs in their descriptions. At this stage teachers' questions, containing RCs, also directed students' output towards the use of RCs. Meanwhile, the teacher would draw the participants' attention to a few erroneous forms using metalinguistic corrective feedback. Further errors would be highlighted by the teacher and the participants would be invited to identify the error, to explain it and to rectify the form either individually or interactively with reference to the grammar source available to them.

Finally, the participants were required to write a paragraph describing a scene depicted in a picture. They were required to use a number of NPs that were written under the pictures. The same writings were collected by the teacher the following session and were corrected by underlining the erroneous forms. The teacher refrained from giving any explicit feedback on form and employed a coding system based on which the participants were required to identify their error types and to correct them based on self-review of the grammatical features covered in the class as well as the supplementary grammar booklet given to them. It was assumed that the self-review would provide a kind of metalinguistic awareness for the participants. The revised versions of the same texts were collected and re-evaluated by the teacher the following week merely to make sure that the participants had reviewed the material and corrected their original writings.

The IE Group

In the IE group (N=23), however, the focus of teaching reading was on content review with no explicit focus on RCs. During the pre-reading stage, the participants were engaged in setting the context by thinking about the topic while the teacher would present the new active vocabulary along with embedded RCs. In other words, the RCs were not highlighted metalinguistically but were presented implicitly. Instead, all RCs used in the text were highlighted and the participants were exposed to an additional text containing more highlighted RCs to draw the participants' peripheral attention to formal features. The texts were read silently by the participants while they were required to answer pre-reading questions.

During the post-reading stage, the participants were engaged in the discussion of the text. The questions contained instances of RCs as well but teachers' feedback was focused on content; feedback on RC errors

was implicitly offered through recast. Following the class discussion, the participants received the same picture as the MF group and were assigned to write a paragraph describing the picture while using specified NPs. The assignments were collected the following session and corrected by the teacher who offered corrective feedback by revising the erroneous forms including RCs. That is, the teacher would identify the incorrect use of erroneous forms and provide the correct form. The corrected assignments were returned the following session and the participants were required to rewrite the correct version of the text and to turn it in the following session.

The PE Group

In the PE group (N =21), in the initial session, the participants were informed about the need for peer-editing in discussion and writing tasks and they were taught how to edit the formal features of their peers' assignments and speech. This session was added to make sure that the learners know what they were expected to do. During the treatment, the same procedure was followed in teaching the content up to the reading stage. The groups participated in pre-reading and reading activities similar to those performed in the IE group.

The difference, however, was related to the post-reading stages the first phase of which was in the form of pair discussion. Instead of whole class discussion, the participants were divided in pairs and were asked to discuss a set of pre-determined questions in pairs. They were also to provide peer-feedback on their partners' erroneous forms produced in this text-based discussion. An example was set at the beginning of this stage by the teacher and one of the students.

After the discussion, the same picture as used on the other two groups would be introduced to be described in a paragraph based on the NPs provided by the teacher. The following session, each pair member would collect his peer's written text and start editing it in the class in about ten minutes. They were required to underline the errors and to provide the correct form. These corrected papers were to be rewritten by the original writers. The first draft corrected by the peers and the revised version would be collected and re-evaluated by the teacher the following session to ascertain that the participants would take peer-editing and rewriting seriously.

Data Analysis

The research data obtained from the grammar pre-test and post-tests were analyzed to answer the research questions. To answer the research question addressing the comparative impact of IE, MA, and PE on recognition of RCs, a one-way between-groups analysis of covariance (ANCOVA) was conducted.

RESULTS

A one-way between-groups analysis of covariance was conducted to compare the effectiveness of the three different interventions designed to enhance the participants' recognition of RCs, as posed in the research question. The independent variable was the type of intervention (IE, MA, and PE), and the dependent variable consisted of scores on the focused grammar test administered after the intervention was completed. Participants' scores on the focused grammar pre-test administered at the onset of the study were used as the covariate in this analysis.

Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate (see the appendix).

The groups' pre-adjusted descriptive statistics and adjusted estimates were computed and are presented in Table 1.

Table 1: Estimates and descriptive statistics

		Dependent Variable: POSTGR				95% Confidence Interval	
grouping	N	Adjusted Mean	Std. Deviation	Pre-Adjusted Mean	Pre-Adjusted Std. Deviation	Lower Bound	Lower Bound
IE	23	23.15 ^a	.613	23.34	3.14	21.93	21.93
MF	29	27.85 ^a	.548	28.24	4.61	26.76	26.76
PE	21	25.46 ^a	.649	24.71	3.74	24.17	24.17
Total	73						

a. Covariates appearing in the model are evaluated at the following values: PREGR = 20.547.

As shown in Table 1, the MF group ($M = 28.24$) surpassed the IE group ($M = 23.34$) and the PE group ($M=24.71$).

Table 2: Tests of between-subjects effects

Dependent Variable: POSTGR						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Model	48991.67 ^a	4	12247.92	1419.56	.000	.99
Pregr. grouping	497.49 303.24	1 3	497.48 101.08	57.65 11.71	.000 .000	.46 .34
Error	595.33	69	8.63			
Total	49587.00	73				

a. R Squared =.988 (Adjusted R Squared =.987)

As shown in Table 1, After adjusting for pre-intervention scores, there was significant difference between the three intervention groups on post-intervention scores on the Recognition of RCs, $F(3,69) = 1419.56$, $p=.000$, partial eta squared=.988. This indicates that about 98% of variance (large effect size) in the students' recognition of RCs is explained by the independent variable (the three intervention or treatments). There was a strong relationship between the pre-intervention and post-intervention scores on the focused grammar test, as indicated by a partial eta squared value of .45.

The difference among the groups was more precisely investigated through a pairwise comparison test, as presented in Table 3.

Table 3: Pairwise comparison test

Pairwise Comparisons						
Dependent Variable: POSTGR						
(I)	(J)	Mean	Std.	Sig. ^b	95% Confidence	
grouping	grouping	Difference	Error		Interval for	
		(I-J)			Difference ^b	
					Lower	Upper
					Bound	Bound

IE	MA	-4.70*	.82	.000	-6.33	-3.06
	PE	-2.31*	.90	.012	-4.09	-.52
MA	IE	4.70*	.82	.000	3.06	6.33
	PE	2.39*	.86	.007	.67	4.09
PE	IE	2.31*	.90	.012	.52	4.09
	MA	-2.39*	.86	.007	-4.09	-.67

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

The results, in Table 2, indicates a statistically significant difference at the $p < .05$ between all groups. The MF stood significantly higher than the PE group that, in turn, showed significantly higher levels of achievement in recognition of RCs compared to the IE group.

DISCUSSION

The present study dealt with the impact of three techniques of FOF instruction, IE, MA, and PE, on the participants' recognition of RCs measured by a FG test. The findings emerging from the present enquiry revealed significant improvements in the recognition of RCs in the MF and PE groups while the IE group failed to significantly enhance their recognition. Among these three treatments, however, MF was found significantly more beneficial than the other two.

The failure of the IE group might be explicated in terms of Interpretability Hypothesis (IH) (Tsimpli & Dimitrakopoulou, 2007) which explicates variability of IL in terms of critical period hypothesis (Johnson & Newport, 1989; Smith & Tsimpli, 1995). According to IH, some language features are assumed to carry L1 parametric values like animacy contrast that are resistant to re-setting. Such features are inaccessible to L2 learners and uninterpretable at logical form (LF) and subject to the constraints of the critical period. That is, adult L2 learners find it difficult to re-set such parametric values linked to uninterpretable features. Chomsky (1995), Rezai (2011), and Tsimpli (2006) categorized RCs as uninterpretable features that are uninterpretable to adult L2 learners. Therefore, the failure on the part of the IE participants to notice the features of RCs might be associated to the already established

parameters of their first language which seem to have abrogated the effect of formal instruction. This finding provides further support for the uninterpretable nature of RCs.

Cognitively, the failure of IE approach might be explicated in terms of Feature Detection Approach (FDA) of input processing (Ashcraft, 2002) which emphasizes the competition among various input features to be noticed. From this perspective, input is broken apart and the core features are checked against the mental prototypes. The paramount role of attention is evident in the vitality of cognitive resources that are needed to focus on the input during bottom-up processing, on the conceptual mental representations during top-down processing, or concomitantly on both in spontaneous communicative contexts. In addition, selective attention is essential to specify what features to attend to in the input. Adequate employment of data-driven and conceptually-driven attentional resources might be closely linked to L2 proficiency (Bylund, Abrahamsson, & Hystenstam, 2012) with less proficient learners at a loss for time and precision. The intermediate participants seem to have lacked the vigilance to adequately benefit from the textually enhanced input; as suggested by Ellis (2015), a mixture of textually enhanced input plus explicit instruction could have boosted the learning outcomes.

Besides, the anxiety-generating testing conditions of the post-test with the similarity of the 40 items and the time restrictions could have constrained the IE group's bottom-up attentional resources and imposed onerous burden upon their processing mechanisms causing excessive perplexity. The results lend support to those of Kim and Mathes (2001), Carroll (2001), and Sanz (2004) who found no significant effect from implicit and explicit feedback.

The improvement in the recognition of RCs in the MF and PE groups underscores the necessity of instruction mingled with metalinguistic awareness. The findings might be substantiated in terms of Schmidt (1990) who accentuated noticing as the prerequisite and sufficient condition for the conversion of input to intake. He further identified frequency of a form, perceptual saliency, instruction, the current state of learners' interlanguage, and task demands as cornerstone requirements for noticing to take place. Noticing might happen at different stages of teaching and learning. The proponents of processing instruction underscore the significance of frequency of occurrence and perceptual saliency and opt for techniques like input enhancement that

implicitly draw learners' attention to formal features of the target language during exposure at the preview or view stages of teaching. Advocates of output hypothesis, on the other hand, endorse various forms of negative evidence proposing that inclusion of feedback on learners' output will help them consolidate what they have learned and serve to escalate the effectiveness of instruction in the long run (Swain, 1985; Swain & Lapkins, 1995). The participants in the present study seem to have benefited from the explicit negative evidence more adequately than the other two techniques.

CONCLUSION AND IMPLICATIONS

RC structures are powerful expressive devices that can contribute to the complexity of output and are, thus, highly demanded for all learners and have been found to be difficult to learn. Exploration of the impact of three feedback types on the recognition of RC structures by Farsi-speaking EFL learners was an attempt to promote Iranian EFL learners' learning of these structures. The findings revealed that MF and PE, as two explicit feedback types, were significantly more effective than IE and suggest some conclusions. First, the smaller magnitude of the enhancement in the PE group could allude to the convoluted nature of RCs, on the one hand, and the learners' inability to notice formal deviations in their peer's performance or their failure in providing adequate feedback on them. This was also reflected in the IE group's failure in noticing formal features that were highlighted in the input to which they were individually exposed. In other words, as suggested by Richards and Renandya (2002), explicit consciousness-raising techniques seem to more adequately help learners notice delicate crosslinguistic variation in grammatical structures (Richards & Renandya, 2002). Second, the findings also suggest the need to reconceptualize our understanding of crucial learner-engagement techniques that seem to be culture-bound. Not all learners can be left out on their own to learn through pair-work and peer-editing; years of cooperative learning from early childhood is required to train learners to learn from each other and to take the responsibility for their own and their peers' learning. Hence, we should remember that many Iranian EFL learners who lack such experience need the teacher's support at various stages of learning and during pair-work and peer-editing to realign their attempts and redirect their attention when they go astray.

Like many other features of learning, however, noticing might be subject to individual differences that can exert influence on the nuances of what is noticed, how it is noticed and how noticing might contribute to learning. The participants in the present study were not differentiated in terms of their individual differences. Thus, one fertile soil for further research might be replicating the study with a focus on learners' cognitive styles, dominant multiple intelligences, or other personal characteristics.

Second, the present study was limited to the impact of the three instructional conditions on the participants' recognition of RCs. Other levels of language learning like comprehension and production as well as language skills of listening and reading comprehension might be explored as well. Alternatively, interested researchers may employ other qualitative devices like interviews, journal writing, or portfolios to find out EFL learners' perception of the target forms and the changes in them.

Finally, we should bear in mind that more recent findings investigating the application of ZPD in error correction underscore the need for graduated and contingent feedback that is initially offered implicitly and becomes more explicit and is withdrawn when the learner achieves self-control (Aljaafreh & Lantolf, 1994). Hence, a very fertile research soil would be exploring the effect of optimal feedback along the input-providing implicit and output-promoting explicit feedback on Iranian learners' recognition and production of RCs.

Bio-data

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References

- Abdolmanafi, S. J., & Rahmani, Z. (2012). An investigation of the learnability of relative clauses by EFL learners. *World Journal of English Language*, 2(3), 29-37.
- Aljaafreh, A., & Lantolf, J. P. (1994). Negative feedback as regulation and second language learning in the zone of proximal development. *Modern Language Journal*, 78(4), 465-483.
- Ammar, A., & Lightbown, P. M. (2004). Teaching marked linguistic structures—more about the acquisition of relative clauses by Arab learners of English. In A. Housen & M. Pierrard (Eds.), *Investigations in instructed second language learning* (pp. 167-198). Berlin: Mouton de Gruyter.
- Ashcraft, M. H. (2002). *Cognition* (3rd ed.). New Jersey, NJ: Prentice-Hall.
- Bylund, E., Abrahamsson, N., & Hystenstam, K. (2012). Does first language maintenance hamper nativelikeness in a second language: A study of ultimate attainment in early bilinguals. *Studies in Second Language Acquisition*, 34(2), 215-241.
- Carroll, S. (2001). *Input and evidence: The raw material of second language acquisition*. Amsterdam: John Benjamins.
- Chang, Y. F. (2004, May). *Second language relative clause acquisition: An examination of cross-linguistic influences*. Paper presented at the Annual Meeting of the American Association for Applied Linguistics Portland, OR.
- Chomsky, N. (1995). *The minimalist program*. Cambridge, MASS: MIT Press.
- Comrie, B. (1989). *Language universals and linguistic typology* (2nd ed.). Oxford: Basil Blackwell.
- DeKeyser, R. M. (1993). The effect of error correction on L2 grammar knowledge and oral proficiency. *Modern Language Journal*, 77(4), 501-514.

- Doughty, C. (1991). Second language instruction does make a difference: Evidence from an empirical study of SL relativization. *Studies in Second Language Acquisition*, 13(4), 431-470.
- Doughty, C., & Varela, E. (1998). Communicative focus on form. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 114-138). Cambridge: Cambridge University Press.
- Doughty, C., & Williams, J. (1998). Pedagogical choices in focus on form. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom second language acquisition* (pp. 42-63). Cambridge: Cambridge University Press.
- Eckman, F. R., Bell, L., & Nelson, D. (1988). On the generalization of relative clause instruction in the acquisition of English as a second Language. *Applied Linguistics*, 9, 1-20.
- Ellis, R. (1994). A theory of instructed second language acquisition. In N. Ellis (Ed.), *Implicit and explicit language learning* (pp. 79-114). London: Academic Press.
- Ellis, R. (2004). The definition and measurement of L2 explicit knowledge. *Language Learning*, 54(2), 227-275.
- Ellis, R. (2015). *Understanding second language acquisition* (2nd ed.). Oxford: Oxford University Press.
- Ellis, R., Loewen, S., & Erlam, R. (2006). Implicit and explicit corrective feedback and the acquisition of L2 grammar. *Studies in Second Language Acquisition*, 28(2), 339-368.
- Enjavinezhad, M., & Paramasivam, S. (2014). Interlanguage syntax of L2 Persian speakers: The case of resumptive pronouns in English relative clauses. *International Journal of Education and Research*, 2(10), 277-288.
- Fedorenko, K., Piantadosi, S., & Gibson, E. (2011). Using Mechanical Turk to obtain and analyze English acceptability judgments. *Language and Linguistics Compass*, 5(8), 509-524.
- Gass, S. M. (1979). Language transfer and universal grammatical relations. *Language Learning*, 29(2), 327-344.
- Gass, S. M. (1982). From theory to practice. In M. Hines & W. Rutherford (Eds.), *On TESOL '81: Selected papers of the fifteenth annual conference of teachers of English to speakers of other languages* (pp. 129-139). Washington, D.C.: TESOL.
- Gass, S. M., & Selinker, L. (2001). *Second language acquisition: An introductory course*. New Jersey, NJ: Lawrence Erlbaum Associates.
- Gibson, E., Desmet, T., Grodner, D., Watson, D., & Ko, K. (2005). Reading relative clauses in English. *Cognitive Linguistics*, 16(2), 313-353.
- Gibson, E., & Wu, H. H. I. (2008). Processing Chinese relative clauses in context. Retrieved from:

- https://tedlab.mit.edu/tedlab_website/researchpapers/Gibson_&_Wu_2013_LCP.pdf
- Hamilton, R. (1994). Is implicational generalization unidimensional and maximal?. *Language Learning*, 44, 123-157.
- Izumi, S. (2003). Processing difficulty in comprehension and production of relative clauses by learners of English as a second language. *Language Learning*, 53(2), 285-323.
- Johnson, J., & Newport, E. (1989). Critical period effects in second language learning: The influence of maturational state on the acquisition of English as a second language. *Cognitive Psychology*, 21(1), 60-99.
- Karimi, S. (2001). Persian complex DPs: How mysterious are they? *Canadian Journal of Linguistics*, 46(1-2), 63-96.
- Keenan, E. L., & Comrie, B. (1979). Noun phrase accessibility revisited. *Language*, 55(3), 649-664.
- Kim, H. R., & Mathes, G. (2001). Explicit vs. implicit corrective feedback. *The Korean TESOL Journal*, 4(1), 57-72.
- Kuno, S. (1974). The position of relative clauses and conjunctions. *Linguistic Inquiry*, 5, 117-136.
- Long, M. H. (1996). The role of the linguistic environment in second language acquisition. In W. R. Ritchie & T. J. Bhatia (Eds.), *Handbook of Second Language Acquisition* (pp. 413-468). New York, NY: Academic Press.
- Lundstorm, K., & Baker, W. (2009). To give is better than to receive: The benefits of peer review to the reviewer's own writing. *Journal of Second Language Writing*, 18(1), 30-43.
- Lyster, R., & Ranta, L. (1997). Corrective feedback and learner uptake: Negotiation of form in communicative classrooms. *Studies in Second Language Acquisition*, 19(1), 37-66.
- Marefat, H., & Abdollahnejad, E. (2014). Acquisition of English relative clauses by adult Persian learners: Focus on resumptive pronouns. *Journal of Teaching Language Skills*, 5(4), 19-40.
- Min, H. T. (2008). Reviewer stances and writer perceptions in EFL peer review training. *English for Specific Purposes*, 27(3), 285-305.
- Rezai, M. J. (2011). Acquisition of resumptive pronouns in interrogative embedded clauses by Persian learners of English. *Iranian EFL Journal*, 7(4), 24-44.
- Richards, J. C. (2001). *Curriculum development in language teaching*. Cambridge: Cambridge University Press.
- Richards, J. C., & Renandya, W. A. (Eds.). (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge: Cambridge University.

- Sadighi, F. (1994). The acquisition of English restrictive relative clauses by Chinese, Japanese, and Korean adult native speakers. *International Review of Applied Linguistics in Language Teaching*, 32(2), 141-153.
- Sadighi, F., & Jafarpur, A. (1994). Is there a role for learner treatment in comprehending relative clauses?. *RELC Journal*, 25(1), 56-74.
- Sanz, C. (2004). Computer delivered implicit versus explicit feedback in processing instruction. In B. VanPatten (Ed.), *Processing instruction: Theory, research, and commentary* (pp. 245-260). Mahwah, NJ: Lawrence Erlbaum Associates.
- Schachter, J. (1974). An error in error analysis. *Language Learning*, 24(2), 205-214.
- Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11(2), 128-158.
- Schmidt, R., & Frota, S. (1986). Developing basic conversational ability in a second language: A case study of an adult learner of Portuguese. In R. Day (Ed.), *Talking to learn* (pp. 237-326). Rowley, MA: Newbury House.
- Schumann, J. (1980). The acquisition of English relative clauses by second language learners. In R. Scarcella & S. Krashen (Eds.), *Research in second language acquisition: Selected papers from the Los Angeles second language research forum* (pp. 118-131). Rowley, MA: Newbury House.
- Schwartz, B. D., & Sprouse, R. A. (1996). L2 cognitive states and the Full Transfer/Full Access Model. *Second Language Research*, 12(1), 40-72.
- Seifoori, Z., & Fatahi, J. (2014). The comparison of the method section of applied linguistics articles written by native and Iranian writers in terms of grammatical complexity and clause types. *Procedia-Social and Behavioral Sciences*, 98, 1698-1705.
- Skehan, P. (1998). *A cognitive approach to language learning*. Oxford: Oxford University Press.
- Smith, N., & Tsimpli, I. M. (1995). *The mind of a Savant: Language learning and modularity*. Oxford: Blackwell.
- Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Rowley, MA: Newbury House.
- Swain, M., & Lapkins, S. (1995). Problems in output and the cognitive processes they generate: A step towards second language learning. *Applied Linguistics*, 16(3), 371-391.
- Taghavipour, M. A. (2005). An HPSG analysis of Persian relative clauses. In S. Muller (Ed.), *Proceedings of the 11th international conference on head-driven phrase structure grammar, center for computational linguistics, Katholieke University Leuven* (pp. 274-293). Stanford, CA: CSLI Publications.

- Tavakolian, S. L. (1977). *Structural principles in the acquisition of complex sentences*. Amherst: University of Massachusetts dissertation.
- Tomasello, M., & Herron, C. (1989). Feedback for language transfer errors: The garden path technique. *Studies in Second Language Acquisition*, 11(4), 385-395.
- Tsimpli, I. M. (2006). The acquisition of voice and transitivity alternations in Greek as native and second language. In S. Unsworth et al. (Eds.), *Paths of development in L1 and L2 acquisition*, (pp. 15-55). Amsterdam: John Benjamins.
- Tsimpli, I. M., & Dimitrakopoulou, M. (2007). The interpretability hypothesis: Evidence from Wh-interrogatives in SLA. *Second Language Research*, 23(2), 215-242.
- Van Lier, L. (1995). *Introducing language awareness*. London: Penguin English.
- VanPatten, B. (2004). Input processing in SLA. In B. VanPatten (Ed.), *Processing instruction: Theory, research, and commentary* (pp. 5-32). Mahwah, NJ: Lawrence Erlbaum Associates.
- Velupillai, V. (2012). *An introduction to linguistic typology*. Amsterdam: John Benjamins.
- White, L. (1988). Island effects in second language acquisition. In S. Flynn & W. O'Neil (Eds.), *Linguistic theory in second language acquisition. Studies in theoretical psycholinguistics* (Vol. 8, pp. 144-172). Dordrecht: Springer.
- Xiaorong, Z. (2007). *Resumptive pronouns in the acquisition of English relative clauses by Chinese EFL learners* (Unpublished master's thesis). The Chinese University of Hong Kong, Hong Kong.
- Yabuki-Soh, N. (2007). Teaching RCs in Japanese: Exploring alternative types of instruction and the projection effect. *Studies in Second Language Acquisition*, 29(2), 219-252.
- Zare-ee, A., & Farvardin, M. T. (2009). Comparison of university level EFL learners' linguistic and rhetorical patterns as reflected in their L1 and L2 writing. *Novitas-ROYAL*, 3(2), 143-155.

Appendix

Tables for assumption checking

Tests of between-subjects effects

Dependent Variable: POSTGR					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.

Model	49027.41 ^a	6	8171.23	978.35	.000
grouping	52.14	3	17.37	2.08	.111
PREGR	352.64	1	352.64	42.22	.000
grouping * PREGR	35.74	2	17.87	2.14	.126
Error	559.59	67	8.35		
Total	49587.00	73			

a. R Squared = .989 (Adjusted R Squared = .988)

Estimates and descriptive statistics

		Dependent Variable: POSTGR				95% Confidence Interval	
grouping	N	Pre-adjusted Mean	Std. Deviation	Adjusted Mean	Std. Deviation	Lower Bound	Upper Bound
IE	23	23.15 ^a	.613	23.34	3.14	21.93	24.76
MA	29	27.85 ^a	.548	28.24	4.61	26.76	30.72
PC	21	25.46 ^a	.649	24.71	3.74	24.17	25.25
Total	73			25.68	4.45		

a. Covariates appearing in the model are evaluated at the following values: PREGR = 20.547.

Levene's test of equality of error variances^a

Dependent Variable: POSTGR			
F	df1	df2	Sig.
2.146	2	70	.125

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: grouping + PREGR + grouping * PREGR