The Effect of Input-based and Output-based Focus on Form Instruction on Learning Grammar by Iranian EFL Learners

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Abstract
This quasi-experimental study investigated the effects of input-enhancement and production of sentences, containing the target structures, on learning grammar by Iranian Intermediate EFL learners. Sixty male students in three input, output, and control groups participated in the study. After checking the homogeneity of the participants with a proficiency test, the researchers administered a pretest. Input-based group received input enhancement within reading texts in which the target structures were highlighted with different techniques such as bolding and underlying. The output-based group were required to produce some sentences including target structures based on reading texts. The control group received traditional grammar instruction. The results of ANCOVA revealed that both experimental groups learned the target structures better than the control group; however, the input-based group outperformed output-based group in learning target grammatical structures. The findings of the study suggest the widespread use of input-enhancement, as one of the techniques of focus on form, plays a significant role in enhancing grammatical accuracy.

Keywords: Input-enhancement, output-based instruction, focus on form, grammar
Introduction

Grammar instruction is valuable, if not indispensable, within the context of EFL teaching and learning. Instruction needs to help learners understand meta-linguistically, comprehend or produce language with a focus on specific forms (Ellis, 2006). Some of the researchers like Krashen (1985) and Prabhu (1987) claimed that grammar which has only a minimal effect on SLA is learned automatically if the learners are exposed to opportunities for meaningful communication in the classroom. Unlike them, some others like Ellis (1990) maintained that focus on form instruction would be necessary for learners to achieve accuracy as well as fluency in SLA. These contradictory results have led to attention to form as complementary to meaning focused treatments, bringing about the notion of Focus on Form (FonF) (Long, 1991) in language learning. "FoF is a type of instruction in which the primary focus is on meaning and communication, with the learners' attention being drawn to linguistic elements only as they arise incidentally in lesson" (Long, 1991, pp. 45-46).

Along with FonF, focused tasks, according to Ellis (2004), help learners to process some specific linguistic feature within a meaningful context such as highlighting target structures within the text (i.e., input-enhancement). This technique can be considered as FonF instruction, because within a meaningful context, with primary attention on meaning, provided by the text; it aims at drawing learners’ attention to formal aspects of language. It is worth noting that the fundamental assumption of FonF instruction mentioned by Doughty and Williams (1998) is that "meaning and use must already be evident to the learners at the time that attention is drawn to the linguistic apparatus needed to get the meaning across" (p. 4). In addition, input-based instruction and output-based instruction have widely been discussed within the FonF approach. Ellis (2012) defines input-based instruction as an instruction that "involves the manipulation of the input that learners are exposed to or are required to process" (p. 285).

Input is the language to which the learner is exposed (Smith, 1993) and it is the most important factor in SLA. It has a great effect on the progress of the learner in the L2 (Yazici, 2007). Van Patten and Cadierno (1993) believe that there should be more emphasis on input processing rather than production in language acquisition. Van Patten (2004) asserts that it seems to be universally
accepted that SLA is dependent upon input. Ellis (1990) has already stated that processing of linguistic data known as ‘input’ is the principle requirement for acquisition of both the native language and an L2. According to Simard (2009), textual enhancement (TE) is one way to modify the input to draw learners' attention to linguistic forms and arise their noticing by modifying the typographical or physical appearance of the target structures. The significant typographical keys introduced in the literature include bolding, underlining, choice, background, CAPITALIZATION, font size, italics, etc. All these techniques are used to enhance the saliency of certain linguistic features in written texts (Simard, 2009). The intake of a particular linguistic feature results from the learner's paying attention to that feature (Farahani, 2012). This idea is in line with that of Schmidt (2001) who states that linguistic features which are salient or enhanced are more likely to be paid attention to and more noticeable.

In addition to input, output is considered as another essential component of second language acquisition (Swain, 1985, 1995). According to Swain (2005), the word ‘output’ is used to indicate the outcome, or product, of the language acquisition device. Swain (2000) claims that "output-based instruction may stimulate learners to move from the semantic open-ended strategic processing prevalent in comprehension to the complete grammatical processing needed for accurate production, and students' meaningful production can lead to language development" (p. 99). Swain (1985) maintains that when the students are pushed to produce linguistic structures, they will be able to deliver the messages which are precise, coherent and appropriate. Moreover, Swain (1995, 2005) claimed that the production of output could enhance fluency and accuracy. In support of this position, Nation (2011) asserts that output-based tasks must consider various different text types. With using various different texts the students are helped to create a broad range of grammatical features and vocabularies.

In addition, according to Larsen-Freeman (2002), grammar will not lead to fluent use of language if the instruction is based on enabling learners to know the rules of language. On the other hand, teachers know that achieving accuracy and fluency is tied to knowing the rules of the language though they prefer not to teach it explicitly, and this is a real challenge to them (Soleimani & Khandan, 2013). As Amizadeh (2014) reported, it seems that Iranian EFL learners suffer considerable communication breakdown in the absence of
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correct use of grammar. She further states that though the learners are exposed to grammar courses in their educational syllabus, they sometimes face problems in using and producing accurate and fluent grammar.

While a number of empirical studies examined the effect of enriched input, the results are far from consistency. For example, Reinders and Ellis (2009) reported that adult ESL learners of English could benefit from input enrichment in learning English negative adverbs. However, Loewen, Erlam, & Ellis. (2009), employing written and oral input, reported that results of their study did not reveal any positive effect for the acquisition of English third person –s by adult ESL learners.

The controversy regarding the role of input and output in language acquisition has been widely extended by Swain (1985, 1995, 2000, 2005) by introducing output hypothesis in which output was considered essential in developing target-like precision in L2 system and its causal role was emphasized. It is worth noting that scholars, believing in the decisive role of output in language acquisition, also believe in important role of input in giving rise to the linguistic system development. What they emphasize is that the role of output needs not to be ignored and relying too much on input will be far from reality of language acquisition (e.g., Bigelow & Izumi, 2000; Izumi, 2002; Toth, 2006).

Conflicting views regarding the primary role of input or output for L2 system development were supported by research. For instance, the primary role of input and secondary role of output in developing language system was the focus of some studies which stated that output has the role of facilitating access to input which has already been developed (e.g., Benati, 2001; Van Patten & Cadierno, 1993; Van Patten & Wong, 2003). The evidence these authors offered was the equal performance of participants in their studies in comprehension and production tasks while they had excluded output practice from their treatment, and it was solely based on input-based tasks. A more recent study in the Iranian EFL context, conducted by Javadi and Bagheri (2017), has also reported supreme results for textual enhancement, as one type of input-based instruction, on learning simple and complex grammatical structures.
On the contrary, the results of Izumi’s (2002) study, focusing on input/output enhancement, attributed the supreme position for output-based instruction to learners’ deep integrative and elaborative processing. Rassaei (2012) also reported a better performance on learning grammatical target structures (so vs. such) in the Iranian EFL context comparing different input-based instructed groups (in terms of saliency of input and the number of tokens of the target structures), output-based group (producing meaningful output that contained target structures), and explicit group (receiving explicit instruction). Results of another study, focusing on writing performance, conducted by Salimi and Shams (2016), indicates that output-based instruction has positive effects on learners’ writing production in terms of accuracy, fluency, and complexity.

In the absence of consistent results, as the research literature above shows, the present study employed a different output-based instruction, which is producing meaningful sentences containing the target grammatical structures based on the reading texts, with grammatical structures of conditional sentences, passive, and past tense. The reading text, in fact, has the role of input, but not enhanced, prior to producing output, which is the unique feature of this study. More specifically, this study was undertaken to investigate the effects of input-based instruction (input-enhancement in reading texts) versus output-based instruction (producing meaningful sentences based on the target structures used within the reading texts, unenhanced input) on learning the target grammatical structures. To this end, we asked the following research question: Does input-based instruction versus output-based instruction affect learning of target grammatical structures differently?

Method

Participants

The initial participants of the study were 90 male Iranian EFL learners, with the age range of 18-22 at intermediate level at Tandis-e-No language institute in Tabriz. In order to conduct this study, the researcher got the permission from the manager of the institution. By administering a proficiency test, the Preliminary English Test (PET), we selected 77 students in four classes with the criterion of one standard deviation below and above the mean. There was a pilot group with 17 students for estimating
reliability of the constructed test. The remaining three classes (with total number of 60) were chosen randomly as two experimental groups of Input-based (N=20) and Output-based (N=20), and one control group (N = 20).

**Instruments and Materials**

The first instrument employed in this study was the Proficiency Test of Preliminary English Test (PET, 2009) to check the homogeneity of the participants in the beginning of the study. The reading and writing parts of PET were used to extract a sample of homogenous students. The scoring of the writing section was based on the average of two raters’ scoring. Due to the practicality problems, listening and speaking parts of PET were not used. The second instrument was the pre-test, designed and piloted on 17 participants for calculating the reliability of the test. Its reliability, based on Kuder-Richardson (KR-21), was 0.89. The test contained two parts with total number of 40 questions: Part A included 20 questions in discrete-point multiple-choice form, and Part B contained two selective deletion cloze tests with total number of 20 items. Post-test was similar to the pre-test with minor changes, such as shuffling the order of some of the items, not to affect the difficulty level of the test.

The main textbook "American Cutting Edge 3" by Sarah Cunningham and Peter Moor (2007), which is taught for intermediate level, was the material used in this study. Three modules of this textbook were devoted to the target structures (past perfect, passive sentences, and conditional sentences). Some appropriate reading passages at intermediate level were selected as supplementary material from the English book of the third grade of Iranian high school (Birjandi, Norouzi, & Mahmoudi, 2010), which is the official text book developed by the Ministry of Education.

**Procedure**

After taking PET test in the first session, in the second session the pre-test was administered. After the pre-test, the teacher (one of the researchers) started to conduct the treatment in the experimental groups. Three target grammar structures (conditional structures, past perfect, and passive structures) were taught in seven treatment sessions. It should be noted that, the classes met two
times in a week and each session lasted 90 minutes. All groups were taught the same target forms with the same teacher. In total, this study took ten sessions.

In the experimental group one, the Input-group, Input-Enhancement technique, including textual enhancement, was applied. That is, the participants received a set of materials (i.e., reading texts) in which the target forms were enhanced with different techniques such as bolding and underlying. While the students were reading the texts, they noticed the highlighted items within the texts. After being exposed to the target structures, the students were required to do related exercises such as fill in blanks and the choice of correct answers. The following is one of the reading texts with input enhancement:

The Titanic was built in 1912. It was designed in a new way and it was thought to be unsinkable. Because of this, it wasn’t given enough lifeboats for the passengers and crew. The hull was damaged by a collision with a huge iceberg and it sank very fast. A total of 1,513 people were drowned that day. Because of this disaster, a lot of magazines were printed in many languages, new Patrol was established.

In the experimental group two, the output group, the students received the same reading texts. The teacher asked them to read and take notes of whatever they think they need to know, including grammatical structures, vocabulary, etc. and then close the book and construct some sentences of their own with the grammatical structures used in the text. Although the reading texts and structures in both groups were the same, they were not highlighted or bolded in the text in the output group. However, as students were asked to construct their own sentences using the grammatical structures within the text, they used the target grammatical structures in the sentence production activity after being exposed to the target structures in the reading text, unenhanced input. The following refers to one of the students’ sentence production after reading the same text:

The Titanic was a ship. That ship was very big with a lot of passengers in it. It was built so many years ago. It was sunk and all the passengers were sunk too.

The participants in the control group were taught the target structures in a traditional method (i.e., teaching grammatical structures explicitly). The teacher
provided some explicit grammatical explanations and asked students to answer the questions posed by the teacher, for example fill in the blanks with the given words.

After fulfilling the treatments, in the tenth session, a post-test was taken by each group to investigate the effect of using input-based and output-based instructions on students’ grammatical knowledge by comparing the post-tests of the three groups.

Results

First, we analyzed the results of PET to ensure the homogeneity of participants. Table 1 shows the normal distribution of the pet scores.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>One-Sample Kolmogorov-Smirnov Test for Normal Distribution of the Pet Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>pet</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>60</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.037</td>
</tr>
<tr>
<td>P value</td>
<td>.076</td>
</tr>
</tbody>
</table>

As the results in Table 1 indicate, the significance level in pet scores is higher than the p value of .05 (p=.076 > .05) indicating normal distribution of the scores. As the normality of the distribution was confirmed, a one way ANOVA was used to analyze the proficiency test scores of the three groups (Table 2).

<table>
<thead>
<tr>
<th>Table 2</th>
<th>One Way ANOVA for Comparing Pet Test Scores in Three Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>control</td>
<td>20</td>
</tr>
<tr>
<td>Output</td>
<td>20</td>
</tr>
<tr>
<td>input</td>
<td>20</td>
</tr>
</tbody>
</table>
As illustrated in Table 2, the mean scores of PET of all three groups are as Output group = 27.70, Input group = 27.05, and Control group = 26.10, P = 0.95 > 0.05. The ANOVA statistical analysis of variances shows that there is not any significant difference among the mean scores of PET for three groups. Therefore, the groups were homogeneous.

The researcher conducted ANCOVA. But before conducting ANCOVA, some assumptions on the normal distribution of the scores, homogeneity of regression, and equivalence of the variances need to be met. Therefore, the mentioned tests were applied to the data analysis.

**Testing the Hypothesis**

To test the hypothesis, input-based instruction versus output-based instruction do not affect learning of target grammatical structures differently, the researchers conducted ANCOVA. One-Sample Kolmogorov-Smirnov Test was used for examining the normal distribution of the data (Table 3).

<table>
<thead>
<tr>
<th>N</th>
<th>Pretest</th>
<th>posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.215</td>
<td>1.290</td>
</tr>
<tr>
<td>P value</td>
<td>.105</td>
<td>.072</td>
</tr>
</tbody>
</table>

As the results in Table 3 indicate, the significance level in both pretest and posttest is higher than the p value of .05 (p=.105 & .072 > .05) indicating normal distribution of the scores. Moreover, Leven’s Test of Equality of Error variance for three groups was carried out to examine the equality of variances (Table 4).

<table>
<thead>
<tr>
<th>F</th>
<th>df1</th>
<th>df2</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.083</td>
<td>2</td>
<td>57</td>
<td>.134</td>
</tr>
</tbody>
</table>
As the results in Table 4 indicates, the equivalence of the variances across posttest is confirmed (F=2.08, P=.134>.05) meeting the assumption of equal distribution of the scores among three groups.

Finally, regression analysis was conducted in order to examine the slope of regression for the scores in posttest, which yielded the results given in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group * Pretest score</td>
<td>.279</td>
<td>2</td>
<td>.139</td>
<td>.040</td>
<td>.961</td>
</tr>
<tr>
<td>Error</td>
<td>189.652</td>
<td>54</td>
<td>3.512</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As Table 5 displays, examining the interaction of group × Pretest score in predicting the dependent variable or posttest score indicated that the interaction effect is not meaningful (f=.04, p=.961 >.05). In other words, there is not a meaningful interaction between the independent variable and the intervening variable, and ANCOVA can be conducted with the assumption of the homogeneity of the slopes.

Table 6 shows the descriptive statistics in the three groups; pretest scores have been controlled. In other words, the effect of pretest scores has been eliminated from posttest scores so that the three groups are compared with each other based on the residual variance.

Table 6

<table>
<thead>
<tr>
<th>Source</th>
<th>Pre test</th>
<th>Post test</th>
<th>Post test (Final estimate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td>Input</td>
<td>15.10</td>
<td>1.803</td>
<td>17.45</td>
</tr>
<tr>
<td>Output</td>
<td>15.20</td>
<td>1.609</td>
<td>16.30</td>
</tr>
<tr>
<td>control</td>
<td>15.850</td>
<td>1.725</td>
<td>15.05</td>
</tr>
</tbody>
</table>
As the results in Table 6 show, the mean pretest score for Control group is 15.85, Input group is 15.1 and Output group is 15.2. The mean posttest scores for Control group 15.05, Input group is 17.45 and Output group is 16.3. The adjusted mean scores, is 14.9 for Control group, 17.53 for Input group and 16.35 for Output (F = 9.90, P < .05). According to this table (Table 6) the experimental groups showed a gain from pre-test to post-test; however, the improvements of Input group seem to be more prominent than output and control group.

Table 7 displays the results of the analysis of covariance (ANCOVA).

### Table 7
**Analysis of Covariance for Comparing the Immediate Post-test Scores in Three Groups**

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>P value</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>67.218</td>
<td>2</td>
<td>33.609</td>
<td>9.909</td>
<td>.000</td>
<td>.561</td>
<td>.979</td>
</tr>
<tr>
<td>Pre test</td>
<td>16.170</td>
<td>1</td>
<td>16.170</td>
<td>4.767</td>
<td>.033</td>
<td>.078</td>
<td>.574</td>
</tr>
<tr>
<td>Error</td>
<td>189.930</td>
<td>56</td>
<td>3.392</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As the results in Table 7 show, the group effect is significant (F=9.90, P<.05). Eta squared is .56 and the observed power is .97, which means that the analysis is 97 percent correct in exploring the significant difference.

Finally, Bonferroni test for pairwise comparison of posttest scores was conducted to compare the mean scores of the three groups in posttest and determine the significant difference among the groups (Table 8).

### Table 8
**Bonferroni test for pairwise comparisons of post-test scores (Final estimate)**

<table>
<thead>
<tr>
<th>Group (I)</th>
<th>Group (J)</th>
<th>Mean Difference (I-J)</th>
<th>P value</th>
<th>95% Confidence Interval for Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>Output</td>
<td>1.181°</td>
<td>.047</td>
<td>.014</td>
</tr>
<tr>
<td>Input</td>
<td>control</td>
<td>2.633°</td>
<td>.000</td>
<td>1.447</td>
</tr>
<tr>
<td>Output</td>
<td>control</td>
<td>1.452°</td>
<td>.017</td>
<td>.271</td>
</tr>
</tbody>
</table>
The means of posttest scores, after controlling the intervening variable, indicate that the means of Input group (17.53) was significantly higher than that of the Output group (P = .047) and control group (P = .000). In addition, it indicates that the means of output group (16.35) was significantly higher than that of control group (P = .017). Thus, the null hypothesis, input-based instruction versus output-based instruction do not affect learning of target grammatical structures differently, was rejected.

Figure 1 displays the performance of the three groups after controlling for the pretest scores.

According to Figure 1, the mean of Input group was significantly higher than that of the two other groups. It also indicates that the mean of output group was significantly higher than that of control group. In other words, the input-based instructed group has significantly affected Iranian EFL learners' grammar learning.

Discussion

The results emerging from the present study revealed that participants receiving input-based instruction (i.e., input-enhancement), in comparison with output-based instruction (i.e., sentence production containing the target structures used within the text) and control groups, outperformed in the post-
test. In addition, participants in both input-based and output-based instruction groups outperformed the participants in the control group. The increase in the participants’ scores in input-based instruction group delineate the significant effect of applying input-enhancement technique of FonF to learners’ grammar learning. In line with Smith’s (1993) view about the effects of input-enhancement on learning grammatical structures, one of the factors that might be the reason for outperforming input-based group in this study can be the fact that students were exposed to the target structures by increasing their perceptual saliency in the input.

The findings of this study lend also support to Benati (2001) who presented similar results indicating that the participants who received input-enhancement outperformed learners who received output-based instruction. In addition, Benati reported that input-based instructed learners were better in the interpretation of tasks; a result also confirmed by DeKeyser and Sokaski (2005) who reported that input-based instruction was better for interpretation and understanding. Javadi and Bagheri (2017) focusing on the effect of textual enhancement types on EFL learners’ grammatical awareness of simple and complex structures have also reported significant positive effects for textual enhancement.

In contrast, there were some studies, the results of which were incompatible with the outcomes of this research. That is, they reported that output-based instruction was better than input-based instruction in L2 learning (e.g., Izumi, 2002; Rassaei, 2012; Salimi & Shams, 2016). Izumi (2002) concludes that input enhancement against output enhancement makes learners focus on input, which is external and ensures their detection and rehearsing in short-term memory; however, output enhancement fosters internal attention of students to pay more attention on the inter-language and filling the gap. Among the different results reported for his complex design in terms of types of treatments and types of tests, Rassei (2012) also concludes that output practice is superior to textual enhancement in improving target grammatical structures. Salimi and Shams (2016) also report that output-based instruction had significant positive effect on learners’ writing production in comparison with input-based instruction in terms of accuracy, fluency and complexity.

The results of this study illuminated the significant impact of input-based and output-based instructions against traditional teaching of grammar in the Iranian EFL context. The superior performance of participants receiving input-enhancement suggests that Iranian EFL learners need to attend to grammar in meaningful contexts while the saliency of the target structures are increased. As mentioned previously, foreign language learners do not usually succeed in learning of grammatical forms as native speakers do (Soleimani & Khandan,
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2013); therefore, not using an appropriate methodology of grammar instructions will propel learners toward facing a striking problem.

The results of this study may furnish Iranian EFL teachers with the empirical evidence that implicit learning through input-based instruction during grammar learning process can help learners L2 system successfully. In addition, learners need to be made aware by teachers that being exposed to texts with enhanced-input can lead to learning target structures more effectively, and learning grammar does not equal with learning the rules explicitly. Moreover, the results of this study legitimize textbook writers to design and incorporate some input-enhancement within the textbooks, which enhance learners’ grammatical learning. If so, the textbooks will be more in accordance with the needs of the learners in Iranian EFL context.

Further studies can be conducted in ways to eliminate possible deficiencies of this study. The subsequent research can be done by considering more participants to reach valid results. If both male and female learners take part in the future research, the results may be more generalizable to both genders. This study has dealt with the impact of input and output based instructions on learning three grammatical structures (passive structures, past perfect, conditional structures); in further studies, researchers can investigate the effect of these instructions on learning other grammatical structures. Finally, the participants of this study were at intermediate level, yet another study can be carried out with learners at different proficiency levels.

References


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