

## The effect of processing-based and output-based instruction on the acquisition of present simple tense of EFL learners

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Received: 2024/01/09

Accepted: 2024/11/23

### Abstract

This study investigated the effects of processing-based instruction (PI) and output-based instruction (OI) on learners' development in comprehension and production of the English present simple tense. The findings contribute to the ongoing debate on the effects of PI versus OI. Among 70 EFL learners at a private language center in Iran, 40 pre-intermediate learners were assigned to the PI group, and 20 learners were assigned to the OI group (n=20). The PI group received structured processing input activities, while the OI group engaged in structured output activities. Descriptive and analytical statistics revealed that participants in the PI group significantly outperformed the participants in the OI group in receptive knowledge of the target structure. However, both instructional methods affected the participants' productive understanding of the present simple tense, and the difference between the efficacy of these two types of instruction on participants' productive knowledge was not significant.

**Keywords:** processing instruction; output-based instruction; productive knowledge; receptive knowledge; present simple tense

### How to Cite:

Mardani, M; Khoram, A (2025), The effect of processing-based and output-based instruction on the acquisition of present simple tense of EFL learners, *Journal of Language Research*, 16 (53), 173-193.

<https://doi.org/10.22051/jlr.2024.46134.2397>

homepage: <https://zabanpazhuhi.alzahra.ac.ir>

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## 1. Introduction

In Second Language Acquisition (SLA), input has received considerable attention as it plays a fundamental role in second language (L2) learning. Consequently, SLA research has recently demonstrated a need for classroom activities that encourage both receptive and productive knowledge of language, with a focus on form in L2 classrooms (Ellis, 2016; Long, 2015). One way to promote such opportunities is through instructional tasks that encourage the processing received input while simultaneously providing opportunities to focus on form during production activities. Farahian and Avarzamani (2018) stated that researchers have been searching for a version of Focus on Form (FonF) that is more beneficial and practical than others. The answer to their quest is processing instruction as an input-based instruction which, in this study is compared with an output-based approach.

Processing Instruction (PI) is a type of focus-on-form input enhancement proposed and updated by VanPatten (2004). Rasuki (2017) defines PI as a unique form of input-based grammar instruction that helps learners acquire grammar through brief provision of input and guides them to mentally process and use the structure. Rassaei (2012) describes the concept as a context where learners demonstrate that they have learned the target structure by providing either a verbal or non-verbal reply. What all these definitions have in common is that PI aims to raise or incidentally draw learner's attention to a linguistic feature while their attention is engaged in another task.

To accomplish this goal, PI must provide learners with explicit information regarding the target form that they are learning and the processing strategy that may influence how they process that target form during comprehension. Additionally, PI includes comprehension practice (structured input activities) designed to require learners to process the target form in the input and to make form-meaning connections. PI offers a more powerful practice (through organized input practice) to equip learners with the tools to convert input to intake.

In contrast to input-based instruction, output has also been assigned a

major role in SLA. As noted by Rassaei (2012), proponents of output do not refute the role of input. Instead, they reject the notion that an input-alone hypothesis is sufficient. This viewpoint suggests that both input and output are essential for the development of comprehension and production skills (DeKeyser & Botana, 2014). The output hypothesis, as proposed by Swain and Lapkin (1995), suggests that even though input is crucial to SLA, output may also result in mental processes that directly and indirectly affect acquisition. In accordance with the argument that both input- and output-based instruction are beneficial for SLA, various studies have sought to compare the two using various research designs (Farley & Aslan, 2012).

To summarize, the debate between the dichotomy of the comparative contribution of input-based and output-based instruction remains ongoing. This study focuses specifically on research comparing the effects of PI to OI and to widen horizons regarding the roles attributed to PI and OI.

## **2. Review of literature**

There are different interpretations of focus on form but Farahian and Avarzamani (2018) argue that “among various forms of the FonF instruction, PI, as an input-based instruction, has been compared with output-based approaches such as traditional grammar instruction (TI)” (p. 90). Patra et al. (2022) believe that PI in grammar is, in fact, an input-based approach, and output-based instruction is another factor for ELT learners.

Benati and Lee (2015) point out that the rationale behind processing instruction is that learners require input for acquisition, a major problem in acquisition might be the way in which input is processed by learners, and that we might be capable of making effective input enhancement or focus on form to assist acquisition of formal features of language if we can understand how learners process input. VanPatten (2015) has claimed a positive role for grammar instruction in the acquisition process since, as he maintains, instruction can make certain grammatical forms more salient in the input. He identifies the essential role of input in L2 acquisition and takes the viewpoint that grammar instruction provided through the input phase of the acquisition

process can be advantageous. Haghani and Rashtchi (2023) conducted research to examine the PI component responsible for its positive effects and whether EFL learners with different learning styles benefit similarly from PI components.

Tran (2023) analyzed the effects of processing instruction in the online learning of the past perfect tense among Vietnamese learners. The study revealed that learners exposed to PI acquired significantly better results than the traditional group in comprehension tasks, while both groups performed similarly in production tasks. What is noticeable is that most of the research in this area focuses on either processing instruction or output-based instruction, but this article applies both through a comparative approach. Further research is required to elucidate the effectiveness of output-based instruction compared to PI. Furthermore, such additional research might address the theoretical issue of output within the broader scope of SLA.

The major inspiration for the present investigation is to examine whether output-based instruction and practice could, alongside input, result in syntactic improvement and to compare this linguistic advancement, if any, to that of PI for the English present simple tense. Such a study considers the role of input in SLA in a meaningful setting and under the PI system. To this end, the following research questions were formulated to address the issues at hand:

1. Is there any significant difference between processing instruction and output-based instruction in promoting pre-intermediate EFL learners' receptive knowledge of the English present simple tense as measured on an interpretation task?
2. Is there any significant difference between processing instruction and output-based instruction in promoting pre-intermediate EFL learners' productive knowledge of the English present simple tense as measured on a production task?

### **3. Method**

#### **3.1. Participants**

The participants were 40 pre-intermediate EFL learners randomly

selected from among 70 EFL learners at a private language center in Iran. They were all male, ranging from 13 to 19 years. They were considered pre-intermediate level learners according to the language institute's standards and the placement tests that they had taken. To ensure the participants' homogeneity, the Oxford Placement Test (OPT) was administered and scores within one standard deviation above and below the mean were selected. The mean score and standard deviation of the participants were 36.21 and 6.87 respectively.

### **3.2 Target structure**

The English present simple tense was selected as the target structure of this study. This choice was based on the justification that Iranian students usually have problems distinguishing present tenses and when they translate, there is often overlap in translation. In other words, sometimes they translate two different present tenses with the same Farsi translation or sometimes the same Farsi sentence can be translated into quite different tenses, namely present and past. The sentence (*man raftam*) can be translated either as *I went* or *I have gone*. Therefore, it was felt that tenses are the bottleneck of language learning and as a result working on the simple tenses can be a starting point for similar research. For instance, in the sentence *Jack gets up at 8 o'clock every day* both the lexical item *every day* and the *-s* verb ending indicate present tense. According to the Lexical Preference Principle, learners will naturally fall back on the lexical item over the verb inflection to obtain semantic information.

### **3.3. Instrumentation**

#### ***Multiple-choice recognition test***

A multiple-choice recognition test was designed to measure the participants' prior knowledge of and familiarity with the target structure of the study, i.e., the English present simple tense. The mean score and standard deviation of the participants were 2.32 and 1.90, respectively. For homogeneity purposes, participants who obtained scores above the expected chance score were discarded from the study. Following Younesi and Tajeddin (2014), the

chance score was calculated using N/A formula (i.e., the total number of items divided by the number of the Alternatives). Given that the researchers designed a 20-item recognition test (10 target items and 10 distractor items) with each item having four alternatives, the expected chance score was five for the multiple-choice recognition test. Consequently, four students who obtained scores above the expected chance score were excluded from the study.

### **3.4. Pretest**

In this study, two different pretests were administered: (a) an interpretation test to measure the participants' receptive knowledge of the target structure and (b) a production test to measure the participants' productive knowledge of the target structure before the experiment.

#### **3.4.1. Interpretation test**

An interpretation test was designed to measure the participants' receptive knowledge of the target structure. The interpretation test was an aural test consisting of past and present tense sentences appropriate to the proficiency level of the participants. Given that the target structure of this study was the English present simple tense, the test included 20 sentences, 10 of which were in the English past simple tense, serving as distractors, and 10 were in the English present simple tense, which was the target structure of the study. Based on the guidelines for the construction of structured input activities provided by VanPatten and Sanz (1995), the following considerations were taken into account to minimize the effects of extraneous factors (e.g., time adverbials, repetitions) on students' performance: (a) the sentences did not start with the verb, and (b) adverbial indications of temporal reference, such as *tomorrow* and *every day*, were removed so that the learners could not rely on those elements to assign past or present action. The researchers read the sentences at a normal speed, and the participants were asked to check if the sentences expressed past or present action.

#### **3.4.2 Production test**

A production test was designed to measure the participants'

productive knowledge of the target structure prior to the experiment. This test was a written picture description task consisted of 10 pictures each depicting an action. The participants were asked to complete a sentence describing what is happening in each picture by producing present simple sentences with the verbs provided in brackets in the infinitive. In both the interpretation and production tests, the raw scores were calculated as follows: incorrect response = 0 point, correct response = 1 point. To validate the data and check the inter-rater reliability of the two pretests, we asked a colleague, who holds an MA in TEFL, to review the data. The inter-rater reliability index, calculated through Pearson Correlation was 0.94 and 0.79 for the interpretation pretest and production pretest, respectively (see Table 1). The index of obtained reliability was significant at the 0.01 level; therefore, it can be claimed that the scoring of the two pre-tests was reliable.

**Table 1.**

*Inter-rater reliability of scoring the pre-test*

		Interpretation pretest		Production pretest	
		Rater1	Rater2	Rater1	Rater2
Rater 1	Pearson Correlation	1	.940**	1	.790**
	Sig. (2-tailed)		.01		
	N	40	40	40	40
Rater 2	Pearson Correlation	.940**	1	.790**	1
	Sig. (2-tailed)	.01		.01	
	N	40	40	40	40

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 3.4.3. Posttest

To guard against the participants' improvement from pretest to posttest due to the memory and learning effect not because of the treatment effect a split-block design was used in test administration: similar versions of the pretests were developed to be used as the posttests. For each interpretation and production tests, two versions were developed. The two versions (A & B) were the same in terms of the format, test tasks, the overall length, the number

of target and distractor items, the instructions, the vocabulary, and timing. Items like the subject, verb, and object were changed in each version. The order of the items in two versions was also changed, thus, the participants could not do the tasks in the same order in two versions.

The researchers followed the same procedures for validating, and checking the reliability of the posttests, as those used for the pre-tests: to validate the data and to check the inter-rater reliability of the post-tests, we asked a colleague to review the data. The inter-rater reliability index was calculated through Pearson Correlation. The indices of obtained reliability (0.96 and 0.83) were significant at the 0.01 level; therefore, it can be claimed that the scoring of the two post-tests was reliable.

### **3. 5. Procedure**

The data collection was carried out within six sessions, three of which were devoted to administering the homogeneity tests, the pretests, and the posttests, and the other three weeks were dedicated to the treatment phase of the study. In the pretest which was conducted two weeks before the instructional treatment sessions, two different tests were administered: (a) an interpretation test to measure the participants' receptive knowledge of the target structure, and (b) a production test to measure the participants' productive knowledge of the target structure. These two pretests were designed to ensure the comparability of the participants in terms of their receptive and productive knowledge of the target structure.

Based on guidelines and the samples available in the literature (e.g., Benati, 2005), two separate packs of materials were developed: a pack for PI group, and a pack for OI group. The two packs of materials were balanced in terms of activity types, use of visuals, and vocabulary during the instructional period. The researchers used vocabularies which were roughly the same across the groups. Participants in the PI group received a package which included: (a) an explicit information sheet, including metalinguistic information about the form and function of English present simple sentences via the participants' L1, i.e., Persian; (b) structured input activities, with the aim of prompting the



learners to make form–meaning mappings. In fact, the aim of providing affective activities was to present more exemplars of the target forms in the input by engaging learners in processing information about the real world.

Participants in the processing instruction received the explicit information sheet followed by the researchers' brief explanation about English present simple sentences. After that, they engaged in structured input activities. Based on the guidelines for the construction of structured input activities provided VanPatten and Sanz (1995), in PI activities of this study, lexical markers including temporal adverbs were removed. Participants in the OI group also received a package which included: (a) the same explicit information sheet in PI packet, including the same metalinguistic information about the form and function of present simple sentences, through the participants' L1, i.e., Persian; (b) structured output activities of two types, i.e., referential, and affective. The structured output activities which were used in OI group were developed following the guidelines provided by.

Just like the participants in the processing instruction, the participants in the output-based instruction group received the explicit information sheet followed by the researchers' concise explanation about present simple sentences. After that, they engaged in structured output activities, which required them to produce the target linguistic feature. In fact, in the activities which were developed for the OI group, the participants practiced producing the correct English present simple sentences. In the post-test phase of this study, conducted in the last session of the experiment, the researchers administered similar versions of the tests designed for the pretest, i.e., an interpretation test and a production test. Given that a split block design was used for test administration, the two versions of the tests were administered in the following manner: in the pretest session, the processing instruction group received version A and the output-based instruction group received version B; yet, in the posttest session, the processing instruction group received version B and the output-based instruction group received version A.

### **3. 5. Data Analysis**

Considering the nature of the variables and the fact that the researcher

was seeking the impact of two independent variables, i.e., processing-based, and output-based instruction on dependent variable which was English grammar, specifically present simple tense, descriptive and analytical statistics were used. Two paired-samples t-test were used to compare the pretest and posttest of production. In addition to the paired-sample t-test, independent t-test was also run to compare the improvement from pretest to posttest of the two groups.

#### 4. Results

To answer the first research question and to see if there is a difference between receptive knowledge of the target feature in PI and OI groups on posttest, two paired-samples t-tests were run. The descriptive statistics for the two paired-samples t-tests are displayed in Table 2.

**Table 2.**

*Descriptive statistics for pretest and posttest of interpretation in processing instruction and output-based instruction groups*

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
PI, Interpretation	Pretest	4.0000	20	1.71679	.38389
	Posttest	7.5500	20	2.52305	.56417
OI, Interpretation	Pretest	3.9500	20	1.57196	.35150
	Posttest	5.5500	20	2.23548	.49987

As displayed in Table 2, the mean scores for the pretest and posttest of interpretation in processing instruction group are 4.00 and 7.55, respectively. The mean scores for the pretest and posttest of interpretation in output-based instruction group are 3.95 and 5.55, respectively.

Table 3 illustrates the results of the two paired-samples t-tests, which were performed to reveal the difference between receptive knowledge of the target structure, measured by the interpretation test, in PI and OI groups on posttest.

**Table 3.**

*Paired-samples t-test for pretest and posttest of interpretation in processing instruction and output-based instruction groups*

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
PI, Interpretation	Pretest	3.55000	2.08945	.46721	2.57211	4.52789	7.598	19	.000
	Posttest								
OI, Interpretation	Pretest	1.60000	1.18766	.26557	1.04416	2.15584	6.025	19	.000
	Posttest								

As it is shown in Table 3, the t-observed value for receptive knowledge of the target structure of participants in PI and OI groups are 7.59 and 6.02, respectively. These amounts of obtained t-value at 19 degrees of freedom are higher than the critical t-value of t, i.e., 2.09 for both processing instruction group and output-based instruction group. Based on these results, it can be safely concluded that there is a significant difference between the mean scores for receptive knowledge of English present simple tense of participants in both PI and OI groups.

To determine whether there is a difference between participants' receptive knowledge of the targeted feature, measured by the interpretation test, the gained score of the participants in PI and OI groups were calculated, and then an independent t-test was run to compare the improvement from pretest to posttest for these two groups. The descriptive statistics for gained scores of receptive knowledge of the target linguistic feature in the PI and OI groups are illustrated in Table 4.

**Table 4.**

*Descriptive statistics for gained score of interpretation in processing instruction and output-based instruction groups*

		Independent t-test Statistics			
		N	Mean	Std. Deviation	Std. Error Mean
Gained Score	Processing Instruction	20	3.5500	2.08945	.46721
	Output-based Instruction	20	1.6000	1.18766	.26557

As indicated in Table 4, the mean gained score for PI and OI groups were 3.55 and 1.60, respectively. Table 5 illustrates the results of the independent t-test, which was performed to compare the improvement from pretest to posttest for receptive knowledge of the target feature, measured by the interpretation test, in PI and OI groups.

**Table 5.**

*Independent t-test for gained score of interpretation in processing instruction and output-based instruction groups*

		Independent Samples Test								
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Gained Score	Equal variances assumed	7.500	.009	3.62	38	.001	1.95000	.53742	.86206	3.03794
	Equal variances not assumed			3.62	30.11	.001	1.95000	.53742	.85263	3.04737

As shown in Table 5, the t-observed value is 3.62. This t-value, at 38 degrees of freedom, is higher than the critical t-value of 2.04. Based on these results, it can be claimed that there is a significant difference between participants' receptive knowledge of the English present simple tense of between participants in the PI and OI groups from pretest to posttest, i.e., their gained scores.

To address the second research question and determine whether there is a difference in the productive knowledge of the present simple tense between participants in the PI and OI groups on the posttest, two paired-samples t-tests were conducted. The descriptive statistics for the two paired-samples t-tests are shown in Table 6.

**Table 6.**

*Descriptive statistics for pretest and posttest of production in processing instruction and output-based instruction groups*

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
PI, Production	Pretest	2.4000	20	1.46539	.32767
	Posttest	5.2000	20	2.28496	.51093
OI, Production	Pretest	2.5500	20	1.57196	.35150
	Posttest	5.0000	20	2.91999	.65293

As indicated in Table 6, the mean scores for the pretest and posttest of production in processing instruction group are 2.40 and 5.20, respectively. The mean scores for the pretest and posttest of production in output-based instruction group are 2.55 and 5.00, respectively. Table 7 illustrates the results of the two paired-samples t-tests, which were run to reveal the difference between productive knowledge of present simple tense, measured by the production test, in PI and OI groups on posttest.

**Table 7.**

*Paired-samples t-test for pretest and posttest of production in processing instruction and output-based instruction groups*

		Paired Samples Test					t	df	Sig. (2-tailed)
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
PI, Production	Pretest - Posttest	2.80000	1.57614	.35244	2.06234	3.53766	7.945	19	.000
OI, Production	Pretest - Posttest	2.45000	1.66938	.37329	1.66870	3.23130	6.563	19	.000

As displayed in Table 7, the t-observed value for productive knowledge of the target feature in PI and OI groups are 7.94 and 6.56, respectively. These amounts of obtained t-value at 19 degrees of freedom are higher than the critical t-value of t, i.e., 2.09 for both PI and OI groups. Based on these results, it

can be safely concluded that there is a significant difference between the mean scores for productive knowledge of present simple tense of participants in the both groups.

To see if there is a difference between participants' productive knowledge of English present simple tense, the gained score of the participants in both groups were calculated, and then an independent t-test was run to compare the improvement from pretest to posttest for these two groups. The descriptive statistics for gained scores of productive knowledges measured by the production test, in the PI and OI groups are demonstrated in Table 8.

**Table 8.**

*Descriptive statistics for gained score of production in processing instruction and output-based instruction groups*

		Independent t-test Statistics			
		N	Mean	Std. Deviation	Std. Error Mean
Gained Score	processing instruction	20	2.8000	1.57614	.35244
	output-based instruction	20	2.4500	1.66938	.37329

As it is shown in Table 8, the mean gained score for PI and OI groups were 2.80 and 2.45, respectively. Table 9 illustrates the results of the independent t-test, which was conducted to compare the improvement from pretest to posttest for productive knowledge in both groups.

**Table 9.**

*Independent t-test for gained score of production in processing instruction and output-based instruction groups*

		Independent Samples Test								
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Gained Score	Equal variances assumed	.346	.560	.68	38	.500	.35000	.51337	-.68927	1.38927
	Equal variances not assumed			.68	37.872	.500	.35000	.51337	-.68938	1.38938

As shown in Table 9, the t-observed value is 0.68. This t-value, at 38 degrees of freedom is lower than the critical t-value of 2.04. Based on these results, it can be claimed that there is no significant difference between the participants' productive knowledge of the target feature in the PI and OI groups from pretest to posttest, i.e., their gained scores.

According to the results of the study, the significant main effect found for the factor of instruction (i.e., processing instruction and output-based instruction) in promoting learners' receptive knowledge of the target feature led to an affirmative answer for the first research question: "There is a significant difference between processing instruction and output-based instruction in promoting EFL learners' receptive knowledge of English present simple tense as measured on an interpretation task". However, as the results of the study did not find a main effect for the factor of instruction, i.e., processing instruction and output-based instruction, in promoting learners' productive knowledge of sentences containing the targeted structure, the answer to the

second research question was negative: "There is no significant difference between processing instruction and output-based instruction in enhancing EFL pre-intermediate learners' productive knowledge of English present simple tense sentences as measured on a production task".

The findings of the study suggest that providing process instruction is significantly more effective in improving participants' receptive knowledge of the English present simple tense than providing output-based instruction. In fact, participants in the processing instruction group significantly outperformed those in the output-based instruction group in terms of their receptive knowledge of the target structure. However, as the results revealed, when it comes to learners' productive knowledge of the targeted feature, there is no significant difference between the efficacy of processing instruction and output-based instruction. In fact, both types of instruction significantly affected the participants' productive knowledge of the English simple present tense.

## **5. Discussion**

This study set out to examine the comparative effects of processing instruction and output-based instruction on EFL learners' receptive and productive knowledge of English present simple tense. For the first research question, it was found that there was a significant difference in participants' receptive knowledge of the target feature. The results of the statistical analysis clearly indicated that the PI group significantly improved (from pre-test to post-test) on the interpretation task. The PI treatment was more effective than the OI treatment in helping students interpret sentences containing the present simple tense. The outcomes of the sentence-level task concerning the interpretation of English present simple tense sentences corroborate previous findings in PI research, which have shown PI is effective in modifying learners' default processing strategy. The findings of the present study align with those of previous studies by Swain and Lapkin (2001), and Benati (2005) in that the PI group outperformed the output-based group on interpretation. Likewise, the results on the interpretation task are comparable to those obtained in Farley's (2004) study carried out on the acquisition of Spanish subjunctive. In this study



processing instruction and meaning-based output instruction were compared, and although processing instruction was overall more effective than meaning-based output instruction, the output group performed as well as the processing instruction group on the interpretation task.

The second question focused on the impact of the two treatments on the production of sentences containing the target structure. The results indicated that PI and OI led to equal improvement (from pre-test to post-test) on the production task (sentence-level task). In this case, the findings from the present experiment align with those of previous studies by Izumi (2002) and Morgan-Short and Bowden (2006), who concluded that, in addition to input instruction, meaning-based output instruction can significantly contribute to the development of productive knowledge of language.

Despite the supportive research in SLA literature, a review of the studies by Benati (2005) and Farley (2004) shows that their findings are not fully supported by the results of the present study. These studies indicated that processing instruction was superior to meaning-based output instruction in the interpretation task but led to similar performance to the meaning-based output instruction in the production task. The results of the current study may be attributed to the nature of the targeted linguistic structure and the challenges this structure makes for learners from a different L1 (specifically the Iranian subjects). The OI treatment, which involved a higher proportion of meaning-based activities, was not beneficial in generating positive impacts (i.e., modifying the processing problem) on learners' performance.

## **6. Pedagogical implications and limitations of the study**

The findings have pedagogical implications in EFL context. To be more effective, grammar instruction should offer learners many opportunities to engage in both receiving and producing the L2. Nassaji and Fotos (2011) emphasize that the use of such combinations of input, output, and interactive activities ensure the maximal effectiveness. L2 practitioners can incorporate a variety of input-based and output-based strategies in their practice. In a similar vein, a combination of input and output activities may help learners to

consciously reflect on the language to be learned, and form hypotheses about the rules underlying its structures, and test these hypotheses. Consequently, the shift from meaning-focused materials to form-focused materials seem indispensable in designing instructional materials.

Although we made every effort to avoid some of the measurement and analytical inadequacies, some limitations need to be acknowledged. First, the sample size of this research is small (40 participants) and limited to a single language center. Therefore, the study would need to be replicated before drawing more definite conclusions about the generalizability of its results. However, the similarities between the findings of this experiment and those of previous empirical studies on the effects of processing instruction lend validity to the current study.

Another limitation concerns the nature of the production task employed, which primarily engages learners' conscious knowledge. A production test that incorporates time pressure and does not permit students to monitor their responses might have yielded different results. Finally, despite the findings of the present study, the long-term effects of the variables under investigation needs to be re-examined, as delayed post-tests were not included.

## **7. Conclusion**

First, the main outcome of this study reaffirmed the positive effects of PI in modifying learners' processing strategies and its subsequent positive impacts on learners' developing systems. The results of the current study clearly indicate that PI is a successful instructional treatment, as it helps learners make form-meaning connections for acquisition. The evidence collected in the present study shows that PI is a more effective instructional treatment compared to OI. The OI treatment is not as successful in bringing about effects like those achieved by PI.

Secondly, this study has contributed to the view that, in language teaching, input practice should precede output practice. Research on PI has clearly indicated that input-based approach offers more instructional benefits than output practice. The fact that the PI group performed better than the OI

group on the interpretation task clearly indicates that structured input activities are the contributing factor to the enhanced performance of learners as both groups received the same amount and type of explicit information.

Although the findings of the present study suggest that output practice does not result in acquisition, we agree with VanPatten (2004), who assigns a possible role to output in acquisition. As VanPatten states, “may be the effect it has on the task demands. Interaction may make input more manageable by creating shorter sentences for learners to process by repeating information so that the demands to get meaning are lessened, by moving elements into more salient positions, and so on” (p. 26).

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