

THE EFFECT OF INPUT ENHANCEMENT, INDIVIDUAL OUTPUT, AND COLLABORATIVE OUTPUT ON FOREIGN LANGUAGE LEARNING: THE CASE OF ENGLISH INVERSION STRUCTURES

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ABSTRACT. *The present study compares the short term and long term effects of three focus-on-form tasks on the acquisition of English inversion structures by EFL learners. It also quantitatively investigates learners' trend of development during the process of acquisition. Ninety freshmen from a B.A. program in TEFL were randomly divided into the three task groups. The tasks included textual enhancement in Group 1 and dictogloss in Group 2 and 3, where texts were reconstructed individually and collaboratively, respectively. Alongside a pretest and a posttest, production tests were administered to assess the trend of development in each group. Results revealed that the impacts of input and collaborative output tasks were greater than that of the individual output task. Moreover, the findings documented that the trend of development in the output group was not a linear additive process, but a rather U-shaped one with backsliding. This study supports previous studies that have combined enhancement with instructional assistance.*

KEY WORDS. *Collaborative output, individual output, input enhancement, dictogloss, inversion structures.*

RESUMEN. *Este estudio compara los efectos a corto y largo plazo de tres tareas de foco en la forma en la adquisición de estructuras de inversión por parte de aprendices de inglés como lengua extranjera. Asimismo, se presenta una investigación cuantitativa de las pautas de desarrollo durante el proceso de adquisición. Noventa alumnos de primer curso del grado en Enseñanza del Inglés como Lengua Extranjera fueron divididos de manera aleatoria en tres grupos y asignados a cada una de las tareas. Las tareas incluían realce textual en el grupo 1, y dictoglosia donde los textos se reescribían de manera individual en el grupo 2 o colectiva en el grupo 3. Junto con unas pruebas pre-test y post-test, se realizaron otras pruebas de producción para medir el desarrollo y evolución en cada grupo. Los resultados revelaron que el impacto causado tanto por las tareas de realce del input como del output colaborativo fue mayor que en el de la tarea de output individual. Por otra parte, los resultados muestran que la evolución en el grupo de output no es lineal, sino que tiene forma de U con rasgos de retroceso o*

regresión en el aprendizaje. Este estudio viene a corroborar estudios anteriores que han combinado el realce del input con ayuda en la instrucción.

PALABRAS CLAVE. *Output colaborativo, output individual, realce del input, dictoglosia y estructuras de inversión.*

1. INTRODUCTION

By the advent of communicative language teaching, there was a shift to meaning-based approaches in which meaning was focused at the expense of form. However, this purely meaning-based approach may deprive language learners from the acquisition of target morpho-syntactic forms or features. Striking a balance between meaning and forms-focused instruction enticed the researchers to come up with the focus-on-form approach which facilitates interlanguage restructuring through form-function mapping (Doughty 2001). The byproduct of focus-on-form instruction is linguistic accuracy through focused tasks where there is a balanced focus on both meaning and linguistic forms. There is a general consensus on the positive role of focus on form in second language acquisition (SLA). A number of reviews have shown that, in general, focus on form facilitates second language learners' acquisition of target morpho-syntactic forms or features (e.g. Doughty and William 1998; Ellis 2002).

Focus on form may facilitate noticing of target linguistic forms in the input not only by input enhancement techniques but also by 'pushed output' which stretches learners' competence through the need to express themselves in the language that is accurate and appropriate (Swain 1995/2000; Swain and Lapkin 1995). Through output enhancement tasks, linguistic evidence in the input and corresponding internal representations are subject to cognitive comparison, resulting in 'noticing the gap' (Schmidt and Frota 1986). Such noticing, Schmidt (1990/2001) argues, helps L2 learning. For these reasons, focus on form is seen as potentially beneficial for L2 learners.

1.1. *Background*

Input enhancement is based on the premise that highlighting selected forms in input enhances the saliency of the forms. By the same token, saliency of the forms can be enhanced internally by pushed output in that learners themselves find problematic structures in their production. These two topics, underpinning the three tasks for the acquisition of English inversion structures in this study, are discussed below.

1.2. *Input enhancement*

Input enhancement is a focus on form task in which specific target structures are highlighted for the purpose of implicit instruction. Sharwood-Smith (1981) argues that internalization of the target forms as well as meaning occurs through improving the quality of input via typical input enhancement techniques such as color coding, boldfacing, underlining, italicizing, capitalizing, and highlighting for textual enhancement purposes and oral repetition for aural enhancement purpose.

It is claimed that this techniques brings the forms into focal attention, and according to Schmidt (2001), some L2 components are so subtle and abstract that they cannot be attended to; therefore, one of the important functions of language teaching is to help focus learners' attention on the linguistic aspects. Inability to process form and meaning simultaneously as well as lack of ability to pay global attention to all aspects of the input at once due to memory capacity are two reasons for the application of this focus on form technique.

Various studies over the past decades have debated the instructional effect of an input-based approach, namely, input enhancement (e.g. Han et al. 2008; Izumi 2002/2003; Lee 2007; Lee and Huang 2008; Leow 1997/2001/2007/2009; White 1998). They vary in sample size from 14 (Jourdenais et al. 1995) to 259 (Lee 2007) participants. They also differ in types of typological cues and the kind of tasks employed: recognition (Leow 1997), comprehension (Leow 2001), intake (White 1998), and production (Shook 1994). Other variables that were investigated in different studies include length of the text (Leow 1997), topic familiarity (Overstreet 1998), number and choice of typographical cues (Simard 2009), and prior knowledge (Shook 1994). The results obtained from these studies vary greatly. Some of these studies failed to prove the effectiveness of input enhancement in triggering acquisition of the forms. From among these studies three are reported here.

Leow (1997) investigated the effectiveness of written input enhancement and text length on L2 comprehension and intake of target linguistic forms. The participants, who were 84 Spanish college-level students, were exposed to one of four conditions: a long non-enhanced text; a long enhanced text; a short non-enhanced text; and a short enhanced text. Results revealed no significant effect for input enhancement on comprehension and intake. Izumi (2002) investigated the effects of output and visual input enhancement on the learning of English relativization by 61 ESL learners. The target linguistic form was presented through reading texts and participants were exposed to enhanced and non-enhanced texts. Those who received enhanced input failed to show any significant gains compared with the other groups.

Finally, Lee (2007) studied the effects of textual enhancement and topic familiarity on Korean EFL students' learning of a linguistic form. The study revealed that, although textual enhancement had positive effects on the learning of the target forms, it had negative effects on the meaning comprehension.

Reviews of input enhancement research (e.g. Han et al. 2008; Simard 2009) reveal aspects of difference in the methodology related to textual enhancement studies. A recent critical review of over 18 input enhancement studies (Leow 2009b) shows that the type of research design operationalizing input enhancement leads to differential results. For instance, the results from a conflated design which combines more than one independent variable in what comprises enhancement (e.g. enhancement plus instruction or additional type of exposure) may differ from those involving a non-conflated design which teases out the variable enhancement as the only variable and which compares it to a non-enhanced group. Leow reports that the former design reveals beneficial effects but unable to differentiate which independent variable contributed to the effects and that the latter design

reveals no effects. Some of these aspects are consideration of the learners' prior knowledge of the target form, frequency of the enhancement, number of the enhanced forms, provision or absence of explicit instruction, length of the texts, and number of the treatment sessions. Moreover, choosing the target linguistic item is based on various criteria such as the level of difficulty, frequency of exposure, semantic complexity, and learnability. In a study on input enhancement, White (1998) investigated the effect of textual enhancement on the use of possessive determiners in English. The results showed that the participants who were treated by textual enhancement increased the use of the target forms; however, it did not have a positive effect on the subjects' ability to use them correctly. Leow (2001) investigated the effects of textual enhancement on learning Spanish formal imperatives and found no advantage for enhanced text over unenhanced text.

Due to the wide array of differences, the studies are not comparable and the results cannot be generalized. However, the basic premise of all these studies is that, when learners fail to notice a linguistic form in the input, instructional intervention comes into play to direct their attention to the form during input processing.

1.3. *Individual output*

Swain (1985: 249) proposed the Output Hypothesis about three decades ago. She believes that output "pushes" learners from "semantic processing" prevalent in the input to the "syntactic processing" to encode meaning during output. She contends that compared with input, there is more mental effort involved when learners are engaged in output processing, and, therefore, output is a part of learning process rather than the outcome of it.

The rationale behind using output-based tasks in language classrooms is that learners mainly process input for meaning. However, when they are pushed to produce output and subsequently provided with the relevant input, their attention is most likely drawn to the forms. This idea is based on the assumption made by Swain (1985) in which she posited that input is associated with semantic processing while output triggers syntactic processing.

Extensive research has been conducted to document the effects of output tasks on language processing and language learning (e.g. Hanaoka 2007; Izumi 2002; Izumi et al. 1999; Reinders 2009; Swain 1995; Swain and Lapkin 1995; Toth 2006; Yoshimura 2006). As an example, Izumi et al. (1999) investigated whether learners' output would promote the noticing of linguistic form when relevant input was subsequently provided and whether output would result in the acquisition of the form. Participants were exposed to short passages for reconstruction purpose. On the second phase they were exposed to a model passage written by a native speaker. The results prove the efficiency of output in learning of target forms.

Izumi (2002) and Hanaoka (2007) also investigated the effects of output on noticing. Izumi (2002) compared the effects of visual input enhancement and output tasks on the acquisition of English relativization by ESL learners. He found a facilitative effect for the output task on promoting the acquisition of the target form but found a non-significant effect for the visual input enhancement task as far as the acquisition of the form was

concerned. Hanaoka (2007) researched into the noticing function of output and the effect of noticing on subsequent learning by Japanese university students in an EFL writing context. He implemented a four-stage writing task consisting of output, comparison, and two revisions. As the learners compared their output with models, they identified their problems and incorporated them in subsequent revisions. These studies revealed the effectiveness of output in promoting language acquisition by EFL/ESL learners.

1.4. Collaborative output

Collaborative output tasks which are rooted in the sociocultural tradition aim to help learners promote their language acquisition through the negotiation of meaning and social interaction. Swain (2000) argues that learners externalize their hypotheses about form and meaning and expose those hypotheses to scrutiny and discussion when they are engaged in collaborative output. When learners use language collaboratively they are in fact engaged in a cognitive activity, during which they receive feedback from their interlocutors and do hypothesis testing which result in language growth. While positive evidence in the input from the peers deepens or enhances learners' knowledge about the forms, negative peer feedback may draw their attention to the forms they may not have noticed acting alone. In this case, peers may facilitate the acquisition of the language forms by filling the gaps in their interlocutors' knowledge.

Sociocultural theory, thus, offers insightful perspectives on the role of collaboration in learning. These perspectives have inspired many studies aimed at finding evidence regarding the facilitative effects of collaborative tasks in second language learning (e.g. Donato 1994; Kim and McDonough 2008; Kowal and Swain 1994; Leeser 2004; Nassaji and Tian 2010; Reinders 2009; Storch 1998; Swain 2000; Watanabe and Swain 2007).

Swain and Lapkin (2001), for example, compared the effectiveness of two focus-on-form tasks, jigsaw and dictogloss. Both tasks involved the learners in collaborative reconstruction of written texts. They concluded that although students in either tasks focused equally on form during collaborative reconstruction of texts, dictogloss led students to notice and reproduce complex syntactic structures. This study reveals the effectiveness of collaboration during output. At the same time it shows that different tasks may differentially affect the outcome.

In another study which was conducted on intermediate and advanced French learners working collaboratively to reconstruct a text, Kowal and Swain (1994) hypothesized that collaborative output would promote learning by making the learners aware of the gaps in their present knowledge, raising their awareness to the form, function, and meaning, and helping them receive feedback from their peers during task completion.

Finally, in more recent studies, Reinders (2009) and Nassaji and Tian (2010) investigated the beneficial effects of collaborative tasks. Reinders studied the effects of the production activities, i.e. dictation, an individual reconstruction, and a collaborative reconstruction. He found that collaborative reconstruction and dictation resulted in greater uptake than the individual reconstruction but there was no differential effect for

the activities on the acquisition of grammatical items. Nassaji and Tian (2010) compared the effectiveness of two types of collaborative tasks (reconstruction cloze task and reconstruction editing task) for learning phrasal verbs in English. The aim of the study was to find out whether collaborative task performance results in greater gains as to the target form than individual task completion. Low intermediate ESL learners were studied and the results supported the effectiveness of collaborative tasks in promoting the accuracy in the production of the target form.

The above studies on output provide, in varying degrees, evidence of the value of output tasks as vehicles for interlanguage restructuring. As the above mentioned studies were different in terms of task types, learners' language, proficiency level, and target forms under investigation, there is a need for further research to measure the role played by collaborative output.

1.5. *The present study*

Many reasons were behind the present study. Examples of the linguistic forms which were targeted in the previous studies on focus on form are present perfect (Shook 1994), past tense (Doughty and Varela 1998), question formation (Mackey and Philp 1998), relativization (Izumi 2002), passive voice (Lee 2007), and negative adverbs (Reinders 2009). In all these studies a proactive focus on form was used where the teacher preselected a form to present to students while they were involved in a communicative task. Mennim (2003) believes that proactive focus on form might be useful if a teacher has a clear idea of common language problems in a class with the same L1, or if a particular language form is useful or necessary for the completion of a communicative task. However, the effects of input enhancement and output need to be investigated with other linguistic forms. The present study took this gap into account and purported to shed light on the effects of input- and output-based tasks on the acquisition of inversion structures.

Inversion is one of the English structures that does not frequently appear in instructional materials and was shown to be problematic for EFL learners. The researchers found it a suitable target for focus on form in the present study.

Another reason for the conduction of the present study was the paucity of research on the effect of the collaborative task on the acquisition of forms. For example, Izumi's (2002) research, bearing close similarity to the present study, examined whether output and (visual) input enhancement, in isolation or in combination, promoted the noticing and learning of an L2 grammatical form. However, in this research, output was conducted individually, and possible effects that collaborative output tasks might have on the acquisition of the forms were not considered.

Besides, most of the studies to date have been conducted in ESL settings where learners were not homogeneous as far as their native languages were concerned (Lee 2004). Thus, the present study can contribute to the research database by investigating the effects of enhanced input, individual output, and collaborative output on helping EFL learners with a single L1 background acquire an English grammatical feature.

The final reason was the need for the quantitative investigation of the developmental pattern learners go through as they are involved in the acquisition process. Studies on the effects of input enhancement and pushed output to date have based their findings on the results of a pretest and an immediate posttest and only few on a delayed posttest. However, utilizing a time-series design, the present study investigated the pattern of development from the onset of the intervention up to the acquisition.

Against this backdrop, it seems that data are thin on the ground as to the effect of input in relation to individual and collaborative output and that no study to date has been devoted to the investigation of such effects as far as the acquisition of structures is concerned.

English inversion, with the specific focus on negative adverbs was chosen as the target grammatical form. English inversion requires changing the usual word order of subject and verb. In this study the researcher investigated the type of inversion that sometimes takes place with certain adverbs and adverb phrases, mostly with a negative or restrictive sense. Such adverbs or adverb phrases when placed first in a sentence or clause for emphasis are followed by the inverted form of the verb. Some of the most common adverbs and adverbial expressions with negative, restrictive or emphatic meaning that are followed by inversion are:

Seldom, Rarely, Little, Nowhere, Scarcely, Hardly, No sooner, Not only ... but (also), On no occasion/account/condition, In/Under no circumstances Only after, Only when, Only if, Not till/until, Never, Never before, Neither/Not/So, etc.

Example: *Under no circumstances can we appoint him as director.*

From a pedagogical perspective, inverted forms do not occur frequently in the input (e.g. in teachers' talk or textbooks) and it is a grammatical feature that presents problems to EFL learners. Inversion is in the domain of word order and Persian language is fairly free from word order. Therefore, it is worth trying to investigate the saliency of this form for the learners with Persian as their L1.

To carry out the study, the questions below were addressed:

- (1) Which of the three focus on form tasks: Input enhancement, individual output, or collaborative output will result in higher inversion structures gains in the short term?
- (2) Which of the three focus on form tasks: Input enhancement, individual output, or collaborative output will result in higher inversion structures gains in the long term?
- (3) What are the trends of development in the acquisition of English inversion structures by input enhancement, individual output, and collaborative output groups?

2. METHODOLOGY

2.1. Participants

First-semester B.A. students majoring in the English Language were selected as the participants in this study. Two main considerations were at work when deciding to select first-semester students: (a) focus of the study, which was related to grammar as

one of the first courses to be taught to the students; and (b) minimal prior knowledge of the target structure as determined by a pretest of structures. A total of 140 adult students participated in the experiment. At the time of the experiment, the target linguistic form, English inversion structures, had not been formally taught to the participants. To ensure that the data included only participants who had minimal knowledge of the target linguistic form, participants who scored higher than 20% on the inversion structures pretest were eliminated from the final data analysis. Participants who failed to attend all the treatment and testing sessions were also eliminated from the data analysis. Participant attrition was almost equal in all the groups. Of the original pool of 140 participants, 50 were eliminated. The remaining 90 participants who did qualify to be included in the analysis were randomly divided into three groups: the enhanced input group (N=30), the individual output group (N=30), and the collaborative output group (N=30). All the participants in each group were exposed to the relevant treatment.

2.2. Instrumentation

The instrumentation employed in this study was of two main types: treatment materials to instruct inversion structures and tests to measure knowledge of inversion structures. What follows is a description of the two types of instrumentation.

2.2.1. Textual enhancement materials and procedure

In each of the twelve sessions, an authentic text of approximately 100 words which contained about 4 instances of the target structure was presented to the participants. Multiple exposures to the target form can function as an experience which helps students become accustomed to the reading conditions of typographical enhancement. In addition, frequent exposures to the target forms make the learners attend to the forms more efficiently (Lee 2007). Texts that lent themselves to natural occurrence of inversion structures were chosen. All texts were scrutinized for lexical as well as syntactical adjustments. Participants were assumed to be at the intermediate level of competence; therefore, lexical choices for the texts were made in view of this point. The target form was authentically used in the texts, but it was not emphasized. Inversion structures in these texts were typographically enhanced.

In each instructional session, participants in the input enhancement group individually read a passage which had been enhanced for the targeted form within an optimal pace assigned by their teacher. Due to the individual differences in comprehension, the teacher ensured that vocabulary was not an issue. Nevertheless, in order to ensure that all the participants could understand the content of the texts, the teacher instructed them to circle the unknown words that might affect their comprehension. She then explained problematic vocabularies as well as key phrases to help them completely get the meaning conveyed by the texts.

To fulfill the purpose of the task, while participants were reading for comprehension of the text content, they were explicitly instructed to attend to the enhanced forms. The

teacher used examples to clarify the matter. Participants were further announced that there would be a recall task afterwards in which they would write a few sentences on what they understood about the text. Using L1 in the free-recall task gave participants an opportunity to easily write about the ideas without any concern for the form.

2.2.2. Output task material and procedure

Dictogloss as a reconstruction task was used in both individual and collaborative output groups, with little variation in the way it was implemented (individual vs. collaborative reconstruction). The effectiveness of reconstruction tasks such as dictogloss has been investigated in studies by Swain and her colleagues (collaborative output task: Kowal and Swain 1994; collaborative dialog: Swain 2000; Swain and Lapkin 1998, 2001). To discern the effects of different treatments and to make sure any changes in the results of the study can be attributed to the treatments, the treatment materials were all balanced in terms of content and length except for the type of instruction learners underwent (input versus output-based instruction).

The twelve short texts used in the input enhancement group were used as the reconstruction passages in dictogloss in both individual and collaborative groups. Due to the length of the texts, verbatim memorization was difficult. However, texts were short enough to make reconstruction through the dictogloss task possible. Due to the meager use of inversion structures, outside exposure to the form was minimal and it was not taught by the teachers in participating classes throughout the treatment.

There were four steps in the dictogloss task (adapted from Qin 2008). In step 1, the teacher introduced the main idea in each text and distributed text copies to the learners. These texts were the same as those used in the textual enhancement group. A typical dictogloss task requires learners to listen to their teacher as he reads a passage to them for the reconstruction purpose, while in this practice the participants were exposed to the written form of the passage. Thornbury (1997) believes that this practice eases memory load and frees up attention to syntactic processing. Following the adaptations of dictogloss made by Qin (2008), the teacher drew learners' attention to the usage of the target form in the text in step 2. She made use of some intext examples of the target form and asked the learners to pay attention to how those forms were used. The rationale for this consciousness-raising activity is that during a dictogloss task learners seem to have less concern for the morpho-syntactic features and relatively more concern for the meaning of words and expressions (Garcia Mayo 2002; Williams 1999). Garcia Mayo (2002) offers a possible explanation for this; when learners were struggling to reconstruct the text, they fell back on discourse or composition strategies and used simple sentences and avoided complex structures. After the participants reconstructed the text in stage 3, they were given the original passage for the comparison purpose in stage 4. They were asked to make notes on the differences between their own production and the original text. They wrote about the perceived differences in both content and form that they might have noticed between the two texts. The use of L1 in this task facilitated writing about one's ideas without

concern for the form. During the task, direct copying of the whole text was not allowed. Learners only took notes on key lexical items that they assumed would help them reconstruct the text. The time limit for the task implementation was 50 minutes each session. Setting a time limit also prohibited the students to copy the whole content. The participants in the individual output group were asked to reconstruct the texts individually, whereas in the collaborative output group the participants formed groups of three to reconstruct the texts. They discussed the content and shared their understandings to reconstruct the text. Learners in both individual and collaborative output tasks were then exposed to the original texts for comparison purposes. A free-recall task followed immediately after, in which learners were encouraged to take notes in their L1 on their reconstruction and comparison experience.

To minimize the probable “Hawthorne” effect, the same teacher instructed the three groups. The experimental treatment started a week following the pretest session and lasted 12 weeks. Due to the nature of the treatments in this study, each week the instructional treatment session took 20 minutes for input and 50 minutes for output groups. After the completion of the treatment phase, the posttest was administered. All three groups received an equal amount of instruction. Schematic representation of the treatment phases appears in figure 1.

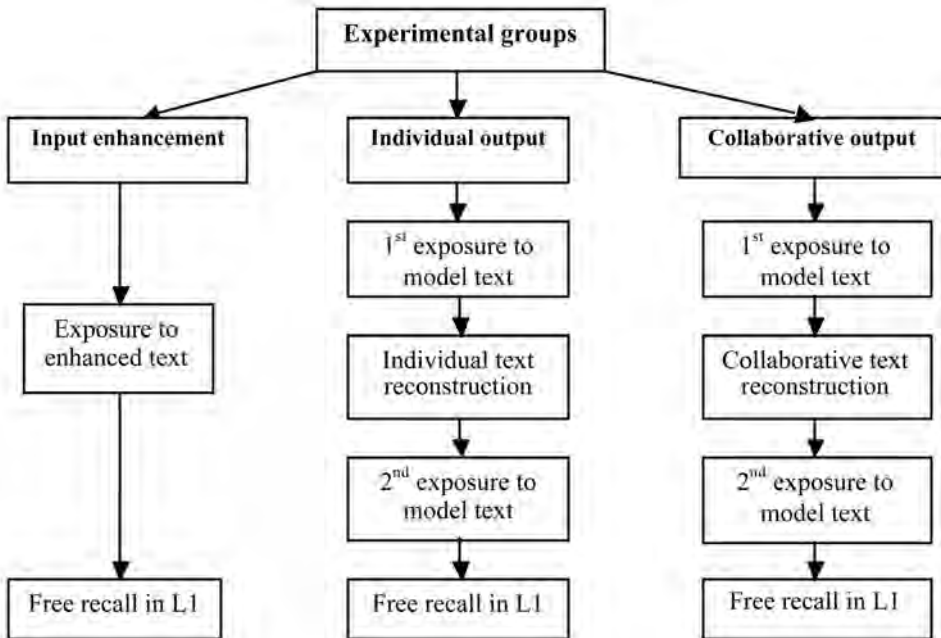


Figure 1. Schematic representation of the treatment procedure.

2.3. Test materials

As this study used a time-series design, at the onset of the experiment, a test of syntax with four different target forms taken from the students' grammar course book was administered to all the participants. The aim of the test was to select the most problematic form for the learners. The test of syntax comprised 80 completion items, 20 items for each structure. The structures included modals, prepositions, inversion, and subjunctives. Each structure was tested through 10 target as well as 10 non-target items. As the learners got the lowest scores for inversion structures, this form was selected as the target. The scores on the inversion structures were also considered as the pretest scores for the participants. Besides the pretest, an immediate posttest (IP), a delayed posttest (DP) and three during-treatment tests (T1, T2, and T3) were administered. The posttests were versions of the pretest with the same inversion-related content but shuffled items. The three tests of development were constructed to assess the participants' ability to produce English inversion structures throughout the treatment. There were 20 items in each test, 10 addressing inversion structures in present and past (negative, progressive, or passive) and 10 related to non-target structures. The items were incomplete sentences. Learners were required to complete the sentences using the information given in parenthesis. Here is a sample test item:

- *Rarely (I, to have seen)..... such a beautiful butterfly.*

In this study, acquisition was evaluated in terms of the correct production of the target form. The items in all the six tests, including the pretest and posttests as well as three during-the-treatment tests were highly structured so that inversion structures would be used by the participants. This type of items limits the range of possible answers and focuses the learners' attention on the target form. The participants were scored +1 for the correct production of each item and the total score was 10.

Three parallel tests (T1, T2, and T3) were administered after each three sessions of the treatment in order to assess the trend of development in all three groups.

3. RESULTS

3.1. Task effects on the acquisition of inversion structures

The first research question concerned the short-term effects of instructions on learning inversion structures in the enhanced input, individual output, and collaborative output groups. To make sure about the homogeneity of the three groups, the result of the inversion structures pretest was analyzed. Table 1 reports on mean, and SD of each group on the pretest. Following the completion of the treatment, an immediate posttest (IP) was administered to see the effects of treatment in the short run. Comparison of the means of pretest and posttest in three experimental groups shows a gain score of 3.40 for input enhancement, 0.87 for collaborative output, and 2.17 for individual output groups.

	N	Pretest		IP	
		Mean	SD	Mean	SD
input	30	.23	.568	3.63	3.023
IO	30	.23	.504	1.10	1.936
CO	30	.20	.484	2.37	2.895
Total	90	.22	.514	2.37	2.830

Table 1. Descriptive statistics for the pretest of inversion.

An ANOVA (3×treatment types) was performed to decide whether there was a significant effect for treatment types. The result, (Table 2), shows a significant variation in the performance of the three groups in the IP compared to their pretest.

		Sum of Squares	df	Mean Square	F	Sig.
Pretest	Between Groups	.022	2	.011	.041	.960
	Within Groups	23.533	87	.270		
	Total	23.556	89			
IP	Between Groups	96.267	2	48.133	6.791	.002
	Within Groups	616.633	87	7.088		
	Total	712.900	89			

Table 2. Results of the One-way ANOVA for the study groups.

The result of the one-way ANOVA for the pretest shows a non-significant difference between the study groups before the onset of the treatment ($F(2, 87)=0.41, p = 0.96$). However, the result of the one-way ANOVA in IP shows significant effect for the treatment type ($P < .05$). Time and test type were considered as the within-subjects factors.

	group	group	Mean Difference	Std Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Scheffe	input	IO	2.533*	.687	.002	.82	4.25
		CO	1.267	.687	.189	-.45	2.98
	IO	input	-2.533*	.687	.002	-4.25	-.82
		CO	-1.267	.687	.189	-2.98	.45
	CO	input	-1.267	.687	.189	-2.98	.45
		IO	1.267	.687	.189	-.45	2.98

*. The mean difference is significant at the 0.05 level.

Table 3. Scheffe's test for Mean Differences in IP (Inversion).

Homogeneous subsets test (Scheffe’s test: table 3) shows:

- A significant advantage for the input enhancement over the IO treatment ($p < .001$). The mean difference between the two groups was 2.533.
- A non-significant advantage for the CO over the IO treatment ($p = .18$), with a mean difference of 1.26 .
- A non-significant advantage for the input enhancement over the CO treatment ($P = .18$). The mean difference was 1.26.

As the results of the study showed an advantage for the input enhancement treatment over the output treatments in IP, the researchers decided to investigate whether the effects would remain over a long run; therefore, a delayed posttest (DP) was administered after three months from instruction. Table 4 illustrates the descriptive statistics for the IP in comparison with DP of the three study groups.

group	time	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
input	IP	3.633	.486	2.667	4.599
	DP	3.800	.469	2.867	4.733
IO	IP	1.100	.486	.134	2.066
	DP	1.600	.469	.667	2.533
CO	IP	2.37	.486	1.401	3.333
	DP	4.033	.469	3.100	4.966

Table 4. Descriptive statistics of IP and DP (Inversion).

All the three study groups showed improvements from IP to DP. A pairwise comparison was conducted to see the significance of the difference in performance of the study groups from time 1 (IP) to time 2 (DP).

group	time	time	Mean Difference (1-2)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
						Lower Bound	Upper Bound
input	1	2	-.167	.487	.733	-1.134	.801
	2	1	.167	.487	.733	-.801	1.134
IO	1	2	-.500	.487	.307	-1.467	.467
	2	1	.500	.487	.307	-.467	1.467
CO	1	2	-1.667*	.487	.001	-2.634	-.699
	2	1	1.667*	.487	.001	.699	2.634

Table 5. Pairwise comparison of IP and DP.

The main results obtained from analysis of differences between IP and DP are:

- Input group shows a positive but a non-significant gain score from IP to DP (MD = 0.16, $P = 0.73$).
- A positive but a non-significant gain score was also observed in IO group (MD = 0.50, $P = 0.30$).
- A significant positive gain score was observed in CO group (MD = 1.66, $P < 0.05$).

Analysis of the results reveals that learners in CO group not only maintained the effects of treatment but also continued to improve much further after IP. Further explanations will appear in the discussion section.

3.2. Developmental trend in the acquisition of inversion structures

The next research question addressed the trend of development in the acquisition of inversion structures by the three study groups. Descriptive statistics show a clear improvement for scores for all the three treatment groups (table 6).

The time-series design in this study provided data on the trend of development from the pretest, developmental tests, up to the posttests. Descriptive statistics of this trend is illustrated in Table 6.

	pre		T1		T2		T3		IP		DP	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
IE	.23	.568	.87	1.634	2.23	2.582	3.33	3.06	3.63	3.023	3.80	3.123
IO	.23	.504	.20	.407	.67	1.184	1.07	1.574	1.10	1.936	1.60	1.632
CO	.20	.484	.33	.606	.77	1.633	.57	1.633	2.37	2.895	4.03	2.723

Note: EI = input enhancement, IO = individual output, CO = collaborative output

Table 6. Descriptive statistics for the pretest, development tests, and posttests.

Five paired sample t-tests were conducted to locate the sources of differences in order to realize which pair(s) of testing times contributed to the effect for time. The mean scores of the study groups in pretest, T1, T2, T3, IP, and DP were compared at each time point. Table 7 shows t and P as well as gain values for each study group over the five specified pairs.

		Input				IO				CO			
		df	t	Sig.	gain	df	t	Sig.	gain	df	t	Sig.	gain
Pair 1	Pre-T1	29	2.21	.035	.64	29	.37	.712	-.03	29	1.16	.255	.13
Pair 2	T1- T2	29	3.52	.001	1.36	29	2.08	.046	.47	29	1.81	.079	.44
Pair 3	T2- T3	29	3.08	.004	1.10	29	2.84	.008	.40	29	1.36	.184	-.20
Pair 4	T3- IP	29	.65	.520	.30	29	.092	.928	0.03	29	3.88	.001	1.8
Pair 5	IP- DP	29	.33	.737	.17	29	1.05	.300	.50	29	3.37	.002	2.66

Table 7. Paired sample t-tests among the six tests of inversion.

Results of the paired-sample t-test of the inversion across the study groups:

- Input group shows significant, positive, and constant improvements from pretest to T3 but ends with slight non-significant improvements throughout IP and DP.
- IO group is characterized by a hardly significant improvement in pair 2 ($P = .046$) but a quite considerable improvement in pair 3 ($P = 0.008$). For the other pairs the improvements were greatly non-significant.
- In CO group, pairs 1, 2, and 3 show non-significant improvements ($P > 0.05$) and in pair 4 and 5 the P values are considerably significant; $P_4 = 0.001$, $P_5 = 0.002$ respectively.

Figure 2 depicts the graphical representation related to the status of each group from pretest to DP.

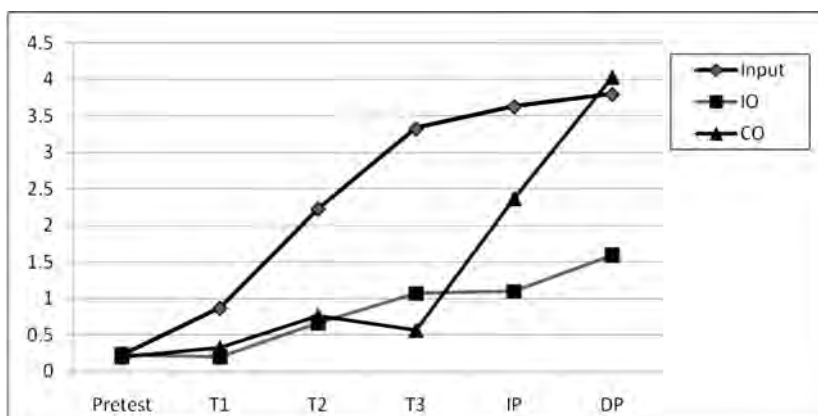


Figure 2. Trend of development from pretest to DP.

Results from the graphic representation of the trend of development in three study groups:

- Input group line shows a dramatic degree of improvement from pretest up to T3, from which point it almost levels off.
- CO group illustrates fluctuations in performance up to T3 where it leaps upwards and soon overtakes the other groups to reach its peak performance in DP.
- A gradual slow rise is observed in IO group. Constant fluctuation in performance all throughout the study, from pretest to DP, is seen.

It seems that T3 has been a turning point in this study after which a sharp rise in performance is seen in CO while IO and Input groups level off after gradual rises.

Unlike the other two groups which showed a consistently positive linear trend from the pretest up to the posttest, the CO group showed a fairly nonlinear U-shaped trend of

development during the intervention. In a U-shaped behavior, L2 learners have an initial target-like production, which is later followed by an overgeneralized incorrect form in their output. Eventually, the correct target language form reappears.

4. DISCUSSION AND CONCLUSION

This study aimed to investigate the differential effects of enhanced input, individual output, and collaborative output on L2 learners' acquisition of English inversion structures. The trend of development was also quantitatively investigated in the three groups. Results showed the significant benefits of enhanced input in the short run and collaborative output in the long run. In addition, a linear trend of development in input enhancement group and a nonlinear trend in the CO group were observed.

It is clear from the findings that the performance of the participants after the provision of treatments was in some cases below chance performance. The reason for lack of effect for the treatments could be the lack of rule presentation, corrective feedback, or negative evidence or it might be due to the complexity of the target structures or lack of developmental readiness for them. The learners may have simply been unable to distill the underlying rule from the examples given in the input or the model texts in the output.

The basic premise of enhancement studies is that by making the target items salient, L2 readers will notice them and then, hopefully, process them further. Incidentally, directing one's attention to targeted items in the input does not guarantee that the learners understand what is being targeted. The effectiveness of input enhancement in promoting L2 learners' grammatical competence is still a controversial issue. This controversy can be attributed to the fact that some structures, e.g. inversion structures, lend themselves to this type of intervention, although it is not yet clear which linguistic forms are more susceptible to input enhancement. Han et al. (2008: 608) argued that if future research demonstrates that certain forms are influenced by textual enhancement, then instruction utilizing this type of intervention "should selectively target certain forms as opposed to any forms indiscriminately". This point is also emphasized by Izumi and Bigelow (2000: 266), who posited that "Like many other pedagogical techniques, output-input activities may be more effective in promoting the noticing and learning of some forms than of others".

Regarding the outperformance of the input enhancement group in the short run, one possible explanation might be differences in cognitive processes input and output require. Reconstruction of a passage in output-based treatments is more cognitively demanding because the processes of reconstruction and comparison make it a dual rather than a single task. Moreover, learners first have to process the input semantically and then reconstruct it syntactically. During semantic processing for the purpose of reconstruction, previous knowledge and long term memory come into play. These two factors probably make the task more demanding. In contrast, input enhancement triggers short term memory; learners were exposed to ample instances of the target form and had to process input for a short period of time therefore, their performances were successful in the short run.

The effect of enhanced input in this study is not compatible with a number of previous studies (e.g. Izumi 1999, 2002). In a series of studies, Leow (1997, 2001, 2003) found no solid evidence for the positive effect of textual enhancement to promote grammatical abilities in L2 learners. In this regard, Swain (2000) claims that *acquisition-rich-input* alone does not push the learners beyond their current level of interlanguage. In a recent study, Leow (2009) argued that combining input enhancement with an instructional period or interactional session that is focused primarily on the target grammatical item in the input contributes to significantly better L2 development. The findings of the present study are in line with this recent argumentation of Leow in that instructional assistance provided for the learners to draw their attention to the target forms can contribute to the effectiveness of input enhancement. This determining role of *instructional assistance* was also emphasized by Izumi (2002: 572). He investigated whether output and input enhancement in isolation or in combination can promote noticing and learning English relativization by ESL learners. The results he obtained were in favor of output while learners in the input enhancement group did not receive any instructional assistance. Izumi concluded that no instructional assistance and cognitive processing in input enhancement and cognitive comparison between the IL and TL forms through output led to superior learning of the form by the output group. Future research with no provision of instructional assistance should be conducted to support the findings of the present study; therefore, the results of this study should be interpreted cautiously.

On the other hand, collaborative output group's higher gain score compared with that of the individual output group in the short run can be found within the sociocultural perspective, which confirms the importance of collaborative output tasks for the promotion of L2 learning. Regarding the improvement of the learners in the collaborative output group, the results of the present study indicate that dictogloss, when done collaboratively, could lead L2 learners to improve their knowledge on English inversion structures. The results are in favor of Swain and Lapkin's (2001) *collaborative dialog*. They investigated learners' engagement in two meaning negotiation tasks: dictogloss and jigsaw. The tasks were done collaboratively and were both successful in promoting focus on form. Findings from the present study also substantiate Watanabe and Swain's (2007) claim that when engaged in collaborative patterns of interaction, learners are more likely to achieve higher posttest scores regardless of their partner's proficiency level.

Next finding was the maintenance of the effect of instruction in the output-based treatments. Although the participants in the input group outperformed the learners in the other groups in IP, they failed to show any significant improvements in DP. However, participants in the output groups showed maintenance of the effects of instruction and more improvements in DP. One possible explanation may be that simply paying attention to the target structures in the input enhancement type of treatment might have triggered short term memory and resulted in a successful performance in the short run but does not seem to commit to long-term memory. The shallow processing of the input seems to have caused the participants to notice the

target form but not the underlying rules that govern the behavior of the structure in the input enhancement group. In other words, participants attended to the formal aspects of the input with little degrees of awareness. Little or no activation of long term memory was required because participants were not involved in any additional processing on input (e.g. memorizing the content) other than holding the content in short term memory. Therefore, input enhancement did not have a great effect on retention of the learned items. In this regard, our results are in line with Robinson's (2001) task complexity framework in which he argues that more complex and demanding tasks, like output tasks promote more noticing and learning. As output is said to be more cognitively demanding, this finding also coincides with Reinder's (2005: 305) achievement that "activities that place a greater cognitive demand on learners lead to slower learning, but greater retention".

With regard to the trend of development in the three groups, results of the CO group revealed that learning is not always a linear additive process because U-shaped learning, restructuring, and backsliding may occur during second language acquisition. U-shaped behavior is characterized by an initial stage of target-like performance, then a deviant performance, and finally back to a third stage of returning to target-like behavior. U-shaped behaviour is part of the cognitive processes learners are involved in during the process of language acquisition. It is the representation of linguistic performance rather than linguistic competence. In line with Lee's (2007) argumentation, the reason for the linear trend in the input group might be ample exposure to the structures which facilitated a more efficient allocation of attentional resources during form processing. The sequential development observed in these learners needs further verification by longitudinal or cross-sectional studies.

It is to be noted that this study has enriched the focus on form literature by focusing on EFL learners who had received no previous instruction on the target form under investigation. A great contribution to the field would be made by investigating the effects of input enhancement and dictogloss on more target linguistic features and also integrating these two tasks to maximize their benefits. In addition, personality factors, attitude toward collaboration and language proficiency level can be investigated. Such factors may be determining factors in the pattern of learners' engagement with the tasks.

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