MEASURING RE-EXPOSURE AND LONG-TERM EFFECTS OF PROCESSING INSTRUCTION ON THE ACQUISITION OF ENGLISH NEGATIVE ADVERBIALS OF INVERSION

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ABSTRACT

MEASURING RE-EXPOSURE AND LONG-TERM EFFECTS OF PROCESSING INSTRUCTION ON THE ACQUISITION OF ENGLISH NEGATIVE ADVERBIALS OF INVERSION

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The proposed study was intended to explore the effects of processing instruction (PI) on English Negative Adverbials of Inversion (NAI) constructions. It utilized a re-exposure treatment, immediate and delayed post-tests to find out whether learners receiving PI (1) would improve in their ability to interpret and produce sentences containing NAI constructions, (2) would maintain their gains over delayed post-tests and (3) would further improve in their ability to interpret and produce sentences containing NAI constructions when they receive re-exposure to PI. 65 advanced English proficiency level university students were randomly assigned to three groups: PI re-exposure (EG1), PI only (EG2) and a control group (CG). All groups were tested through pre-tests before the treatments. EG1 and EG2 were taught NAI constructions through PI and CG received no instruction. The immediate and two-weeks delayed effects of PI on NAI constructions were tested by sentence level interpretation and production tasks. EG1 received PI again four-weeks after the first PI. The effects of PI and re-exposure to the PI were measured through delayed post-tests six months after the first PI treatment. Non-parametric tests were conducted for pre and posttests scores to assess instruction and time effects. The results showed that PI had positive effects on the acquisition of English NAI constructions. The

learners' gains were found to be maintained on their production ability and the durable effects for the interpretation tasks were due to the re-exposure treatment.

Keywords: Processing Instruction, Negative Adverbials of Inversion, Re-exposure, Interpretation, Production

ÖZ

İNGİLİZCE DEVRİK-OLUMSUZ ZARF YAPILARINI EDİNMEDE İŞLEMLEME ÖĞRETİMİNİN YENİDEN MARUZ BIRAKMA VE UZUN VADELİ ETKİLERİNİ ÖLÇME

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Bu önerilen çalışma, işlemleme öğretiminin (İÖ) İngilizce Devrik-Olumsuz Zarf (DOZ) yapıları üzerindeki etkilerini araştırmayı amaçlamıştır. Çalışma, yeniden maruz bırakma muamelesi, çok kısa dönemli ve gecikmeli art-sınavlar kullanmış ve bu İÖ'ye maruz bırakılan öğrencilerin (1) DOZ yapılarını yorumlama ve cümle üretme yeteneklerinde gelişme olup olmadığını, (2) kazanımlarını gecikmeli art-sınavlarda muhafaza edip etmediklerini ve (3) İÖ'ye yeniden maruz bırakıldıklarında DOZ yapılarını içeren cümleleri yorumlama ve üretme kabiliyetlerinde ilerleme sağlayıp sağlamadıklarını ortaya çıkarmayı hedeflemiştir. 65 adet ileri seviye İngilizce bilgisine sahip üniversite öğrencisi üç gruba rastgele yerleştirilmiştir: İÖ'ye yeniden maruz bırakılan grup (EG1), yalnızca İÖ grubu (EG2) ve kontrol grubu (CG). Tüm gruplar uygulamadan önce ön sınavlarla test edilmişlerdir. EG1 ve EG2'ye tam İÖ ile DOZ yapıları öğretilmiştir, kontrol grubu ise herhangi bir öğretime tabi tutulmamıştır. İÖ'nün DOZ yapıları üzerindeki çok kısa dönemli ve iki hafta gecikmeli etkileri cümle düzeyindeki yorumlama ve üretme ödevleriyle test edilmiştir. EG1, ilk İÖ'den dört hafta sonra İÖ'ye tekrar maruz bırakılmıştır. İlk kez ve yeniden maruz bırakılan İÖ'nün etkisi ilk İÖ'den altı hafta sonra gecikmeli art-sınavlar ile ölçülmüştür. Öğretim ve zaman etkisi olup olmadığını değerlendirmek için ön ve art sınav puanlarına parametrik olmayan testler uygulanmıştır. Sonuçlar,

İÖ'nün DOZ yapılarını edinmede olumlu etkileri olduğunu göstermiştir. Öğrencilerin kazanımlarının, üretme yeteneklerinde devamlılık sağladığı bulunmuştur ve yorumlama yeteneklerinin uzun süren etkileri yeniden maruz bırakılma sayesindedir.

Anahtar Kelimeler: İşlemleme Öğretimi, Devrik-Olumsuz Zarf, Yeniden Maruz Bırakma, Yorumlama, Üretme

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ASV	Auxiliary-Subject-Verb
BNC	British National Corpus
CG	Control Group
EFL	English as a Foreign Language
EG1	Experimental Group 1
EG2	Experimental Group 2
ELT	English Language Teaching
GJT	Grammaticality Judgment Test
IP	Input Processing
L1	First Language
L2	Second Language
MOI	Meaning-based Output Instruction
NAI	Negative Adverbials of Inversion
OI	Output-based Instruction
PI	Processing Instruction
PT	Production Test
SAI	Subject-Auxiliary-Inversion
SI	Structured Input
SLA	Second Language Acquisition
SOV	Subject-Object-Verb
SVO	Subject-Verb-Object
TI	Traditional Instruction
UG	Universal Grammar
VS	Verb-Subject

CHAPTER 1

INTRODUCTION

1.1. Presentation

This chapter presents the background to the study, its significance and the research questions to be answered.

1.2. Background to the Study

In the last century, there have been a number of shifts in the role attributed to grammar in teaching second languages (henceforth L2). Grammar was the core component of language learning for a long time. Learning a language was even equated with being able to learn the grammar rules of the target language. With the advent of communicative language teaching in the late 1970s, the emphasis on grammar has begun to decrease. Following the belief that language is for communication, the helpfulness of teaching grammar to the learning of foreign languages has been questioned.

In English as a Foreign Language (henceforth EFL) contexts, however, where English is not an official language such as Turkey, grammar teaching has had top priority. Although the Ministry of Education has modified English teaching curriculum in 1997by initiating communicative language teaching approach (Kırkgöz, 2007), the state schools continued to teach grammar structures and rules with a traditional, teacher-centered approach. The feasibility issues are one of the main concerns for not being able to meet the requirements of the communicative curriculum in practice. State schools are overcrowded and not all teachers are still qualified enough to use communicative language teaching methods even after they

received training. The implementation problems of communicative teaching approach are also summarized by Kırkgöz (2007) as follows:

- the content of the curriculum, particularly for upper grades was too dense;
- textbook did not support the proposed communicative teaching methodology;
- teaching time allocated for each grade was insufficient;
- large class size made it difficult to implement the syllabus effectively; and
- a large number of schools lacked adequate resources. (p. 223).

More recently, the significance of grammar has also been reemphasized in the field of second language acquisition (henceforth SLA) by both the researchers and professionals. According to Nassaji and Fotos (2011), the reasons for this reemphasis are multiple, and the most important among those are:

(i) some degree of consciousness is required in order to be able to learn the language (e.g. Schmidt, 1993, 1995, 2001; Sharwood Smith, 1993, cited in Nassaji & Fotos, 2011),
(ii) inadequate empirical research which favors focus on meaning (Harley & Swain, 1984; Lapkin, Hart, & Swain, 1985, cited in Nassaji & Fotos, 2011),
(iii) major effects of instructed language learning on both the rate and ultimate level of L2 attainment have been shown by recent research.

Although SLA itself is not a language teaching theory, the study of SLA theories should contribute to classroom teaching (Doughty & Long, 2005). The reasons stated above also underline the importance of instructed SLA. One of the most crucial components of instructed SLA is the input. The role of input can be understood through the concept of processing (Gass, 2005). VanPatten (1996) has been concerned with the input processing (henceforth IP) theory and he suggested that "learners use input in order to construct a mental representation of the grammar that they are acquiring" (p. 13). However, he pointed out that not all the attended forms from input would become an intake or there may be misinterpretation of the linguistic item. Therefore, VanPatten and his colleagues (Lee & VanPatten, 2003; VanPatten, 1996, 2002) developed the Processing Instruction (henceforth PI)

approach, an input-based approach in teaching grammar whose main focus is to intervene when L2 learners process the language at input level.

In order to measure the effectiveness of PI, the researchers conducted many empirical studies (e.g., Benati, 2001; Cadierno, 1995; Cheng, 2002; Farley, 2001a, 2004; Qin, 2008; VanPatten & Cadierno, 1993b). Most of the studies within this research paradigm compared PI, an input-based approach with other traditional output-based approaches *(see section 2.4).* The studies demonstrated an overall superior effect of PI at both interpretation and production levels.

The current study aims to make further contribution to this field of research by testing whether PI can help learners to improve their ability to interpret and produce the target item English *Negative Adverbials of Inversion* (henceforth NAI) which has not been studied so far in PI studies. Furthermore, the design of the study is different from the previous studies in that the same PI was given to two PI groups (Experimental Group 1-EG1 and Experimental Group 2-EG2) and the results were compared to a control group (CG).

This study also aims to find out whether learners' gains are maintained over an extended period of time. Since the number of studies which tested long-term PI gains is limited, it is hoped that the current study will be a valuable contribution to this group of studies. The current study is believed to contribute to identify the long-term effects of PI.

In addition, only a couple of study (e.g., Benati, 2015; Hikima, 2011) investigated re-exposure effects of PI. This study aims to fill this gap by comparing the performances of one PI group (EG1) which received re-exposure on English NAI constructions with another PI group (EG2) which did not receive re-exposure.

1.3. The Significance of the Study

The main aim of this study is to measure re-exposure to PI in relation to long-term effects in order to support the hypothesis that L2 learners can, not only maintain, but also strengthen the ability to interpret and produce the target linguistic item at

sentence level if they are re-exposed to the PI treatment. The proposed research will explore the effects of PI on the acquisition of English NAI constructions, utilizing a re-exposure treatment, immediate and delayed post-tests.

The studies on PI mostly compared PI to traditional instruction (henceforth TI) or other meaningful output-based practices in order to find out whether PI was effective or not and the participants of these studies were either beginner or intermediate proficiency level language learners. The results showed that PI was more effective than the other instructional practices. The current study aims to contribute to the PI theory and research in the field by investigating whether advanced level learners receiving PI would also improve in their ability to interpret and produce sentences containing English NAI constructions. The language learners that participated in the study were prospective teachers of English language, so the results of the study are significant in showing the possible positive effects of PI in grammar teaching for teachers to use in their classrooms.

The number of studies documenting the short-term effects of PI is far greater than the ones that document longer term effects. PI has been found to be an effective intervention whose effects endure from one week to four weeks and even eight months after immediate post-testing. However, in these studies, the effects of PI were found to decrease from immediate to delayed post-tests and none of the learners were able to improve in the long run.

Only a couple of published study investigated the effects of re-exposure (e.g., Benati, 2015; Hikima, 2011). From a cognitive perspective, repeated exposure may permit L2 learners to strengthen their cognitive understanding of the grammatical structures and foster SLA. Therefore, it is hoped that the study will contribute to grammar instruction particularly in exposing the learners to English NAI constructions twice to help them improve their ability to process it appropriately and accurately, and relatively permanently.

1.4. Research Questions

The research questions that this study aims to answer are the following:

1. Can PI positively affect the interpretation and production of English Negative Adverbials of Inversion?
2. Can PI help learners maintain their gains in the long run?
3. Will learners receiving re-exposure to the PI treatment get better than the PI only group in interpreting and producing English Negative Adverbials of Inversion?

CHAPTER 2

LITERATURE REVIEW

2.1. Presentation

This chapter presents the theoretical background of the study starting from the role of input in acquisition and it dwells on the IP theory along with its principles. It also discusses PI approach. In addition to the theoretical background, related studies are discussed concerning PI to establish an empirical background of the study.

2.2. The role of Input in L1 and L2 Acquisition

Input is the essential element for language learning. Linguistic input is made up of the sounds, words, phrases, sentences, and other units (Saville-Troike, 2006). Children are exposed to the linguistic input excessively while they are acquiring their first language (henceforth L1) presumably with little consciousness or unconsciously. According to the behaviorist theory, the children were supposed to learn through imitation, so input was seen as the only source for language acquisition (Gass, 2005). From the cognitive point of view that emerged in the 1960's, input was not enough to be able to acquire L1. Cognitivists rejected the idea that language was acquired through imitation proposed by stimulus and response theory. They suggested that cognitive capabilities of children were involved in the acquisition process. The common example given to support this idea is that children can produce innumerable sentences out of the limited number of utterances they hear (Chomsky, 1981). The original utterances of the children support the view that humans have an innate capacity to learn a language. The innateness theory (also known as Universal Grammar), proposed by Chomsky suggests that all languages share universal principles and the differences among languages are characterized in the form of parameters. The learner can acquire his/her L1 by means of universal principles and what s/he needs to do is to reset the parameters specific to the language being learned. On the other hand, Universal Grammar (henceforth UG) does not reject

completely the important role of input. As Littlewood (2005) put it "the input acts primarily as a "trigger" to activate the mechanisms" (p. 10).

Input plays a crucial role in L2 acquisition as well. Unless learners are exposed to the target language, acquisition cannot take place (Ellis, 2005). It is yet under discussion whether L2 learners can construct a mental representation of the language above the limits of the input as in L1 and whether UG can help to construct such knowledge (White, 2005). The argument could be reasonable in adult SLA because adults have already acquired their L1, so the initial states of children and adults are dissimilar and also unlike children, many adults show different levels of monolingual standards attainment (Sorace, 2005). In this respect, the L1 transfer on the knowledge that L2 learners attain should also be taken into account in adult L2 acquisition because L2 learners have already acquired their L1 in the childhood. As Saville-Troike (2006) also put it "the initial state of L2 learning has resources of L1 competence, world knowledge, and established skills for interaction which can be both an asset and an impediment" (p. 18).

According to Krashen's (1985) theory of SLA, comprehensible input is all that is required for acquisition. He suggests that acquisition should be an unconscious process and comprehensible input should be given to the learners implicitly. L2 learners are assumed to be exposed to considerable amount of input in the naturalistic environment. In classroom contexts, however, neither foreign language teachers nor learners can be sure whether sufficient amount of comprehensible input is provided in their classrooms or not. In addition, learners cannot understand every input they receive, as it is improbable for them to attend to all the information available (Wong, 2005). Therefore, a specific type of explicit instruction which would help learners to process the input is required. For this aim, PI theory based on an IP model and its principles was developed by VanPatten (1993).

2.3. Input Processing Theory

The role of input in SLA can be better understood through the examination of the nature of IP. VanPatten and Cadierno (1993a) suggest that there are three sets of processes in SLA which are shown in Figure 2.1:

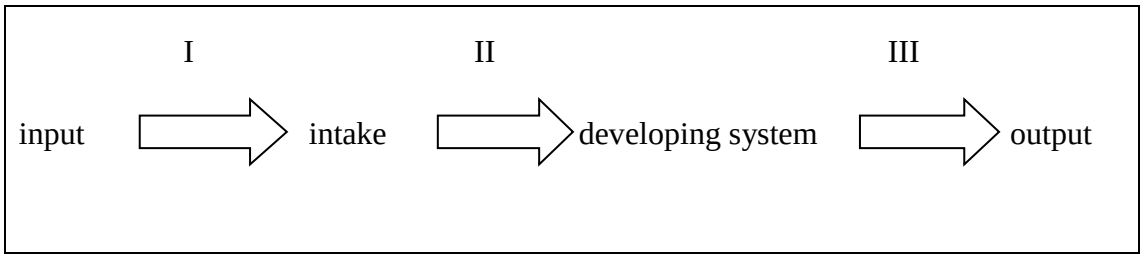

Figure 2.1. Processes in Second Language Acquisition

The first process refers to IP in which input becomes intake. As VanPatten (2002a) stated "intake is defined as the linguistic data actually processed from the input and held in working memory for further processing" (p. 757). In this model of SLA, the first set of processes involve "…those strategies and mechanisms that promote form-meaning connections during comprehension" (VanPatten & Cadierno, 1993a, p. 46). The second set of processes involves the accommodation and restructuring of the developing system. Such further processing is required due to the fact that intake may include incorrectly processed data. The third set of processes which include monitoring, accessing, control and such are necessary to use the developing system for language production.

The IP theory deals with the first step in the SLA model displayed above. It refers to the way learners attain form from input and analyze the sentences during comprehension while they attend to meaning primarily (VanPatten, 2002a). The model takes into consideration the conditions under which connections between a form in the input and meaning can or cannot be made by learners and also the initial processes of acquisition that are accompanied by them (VanPatten, 2004).

VanPatten developed IP principles in 1993 which he revised in 2007 based on the IP theory discussed above. There are two main principles in its relatively current form of the theory (Lee & Benati, 2009). These are "The Primacy of Meaning Principle" which is divided into six sub-principles and "The First Noun Principle" which has three sub-principles.

P1. *The Primacy of Meaning Principle*: Learners process input for meaning before they process it for form.

P1.a *The Primacy of Content Words Principle*: Learners process content words in the input before anything else.

P1.b *The Lexical Preference Principle*: Learners will tend to rely on lexical items as opposed to grammatical form to get meaning.

P1.c *The Preference for Non-Redundancy Principle*: Learners are more likely to process non-redundant meaningful grammatical forms before they process redundant meaningful forms.

P1.d *The Meaning-Before-Non-Meaning Principle*: Learners are more likely to process meaningful grammatical forms before non-meaningful forms irrespective of redundancy.

P1.e *The Availability of Resources Principle*: For learners to process either redundant meaningful grammatical forms or non-meaningful forms, the processing of overall sentential meaning must not drain available processing resources.

P1.f *The Sentence Location Principle*: Learners tend to process items in sentence-initial position before those in final position and those in medial position.

P2. *The First Noun Principle*: Learners tend to assign subject or agent status to the first (pro) noun they encounter in a sentence.

P2.a *The Lexical Semantics Principle*: Lexical semantics of verbs may attenuate learners' reliance on the first noun principle.

P2.b *The Event Probabilities Principle*: Event probabilities may attenuate learners' reliance on the first noun principle.

P2.c *The Contextual Constraint Principle*: Learners may rely less on the first noun principle if preceding context constrains the possible interpretation of the following clause or sentence (VanPatten, 2007, pp. 268–269).

According to VanPatten (1996), learner makes the form-meaning connections concurrently, though s/he can arrive at the meaning partially or completely. This idea underpins the two main principles of IP theory. The first principle (Primacy of Meaning*)* suggests that learners look for the meaning in the input initially which is also based on Krashen's (1982) input hypothesis theory; however, some of the features can go unnoticed (such as *inflections*) because of the working memory

constraints. The elements in an utterance or sentence that a learner process initially (such as *content words*) to get meaning constitutes the six sub-principles of the *Primacy of Meaning* principle. For the purposes of the current study, English NAI construction was selected as the linguistic item and it suits to the *Primacy of Meaning* and its sub-principles which are *The Preference for Non-redundancy Principle* and *Sentence Location Principle* (see Chapter 3.1 for a detailed explanation).

The second main principle of IP theory is the *First Noun Principle.* Learners may misinterpret the first noun of the sentence as the agent because the word order in their native language and the target language can be different. In addition, Subject Verb Object (henceforth SVO) and Subject Object Verb (henceforth SOV) word order is common in the languages worldwide and learners may tend to assign the status of the subject to the element in the initial position even in passive constructions (VanPatten, 2004). For example, an English learner of Turkish or Japanese might interpret the first noun in the sentence as the agent in a Turkish or Japanese passive construction. The three sub-principles of the *First Noun Principle* were developed considering the circumstances under which the first noun in the sentence can be misinterpreted and cause a delay in the processing.

Although the IP theory and its contributions to the SLA theory were widely recognized in the field, VanPatten has been criticized for his vague definition of attention and for his claims about L2 processing (e.g. DeKeyser, Salaberry, Robinson, & Harrington, 2002). According to VanPatten (1996), attention needs an effort particularly during language comprehension and it is still not enough for learning unless *detection* occurs, which is "the process by which data are registered in working memory" (p. 16). As the input processing capacity of learners is limited, it does not seem possible for them to attend to all the grammatical forms in the input. In addition, detected information can interfere with other information which makes processing difficult. It can be concluded from VanPatten's views about attention that only selectively detected input can be processed and this input should convey semantic information. VanPatten (2004) defines processing as "making a connection between form and meaning" which differs from *perception* and *noticing* because unlike processing, perception and noticing may not always mean that a connection

has occurred between form and meaning/function. IP helps learners make correct form-meaning connections and this further helps intake to provide the examples of these connections to developing system so that language acquisition can happen (VanPatten, 1996).

2.4. Processing Instruction

PI is a type of focus on form instruction which is based on the IP theory of VanPatten (Wong, 2004). Focus on form "overtly draws students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication" (Long, 1991, p. 45-46). PI is a combination of focus on form and explicit instruction through which selective attention is drawn explicitly to both form and meaning in the input regarding the IP principles (see section 2.2). For example, according to *The Preference for Non-Redundancy Principle* in the IP theory, learners are more likely to process non-redundant meaningful grammatical forms before they process redundant meaningful forms. PI can make tense markers, which is a redundant grammatical form more salient in the input for learners to help them make form-meaning connections (Benati, 2001).

The aim of the PI is "to affect the ways in which learners attend to input data" (Van Patten, 1996, p. 2). Therefore, PI intervenes in the input deliberately (Lee & Benati, 2009).

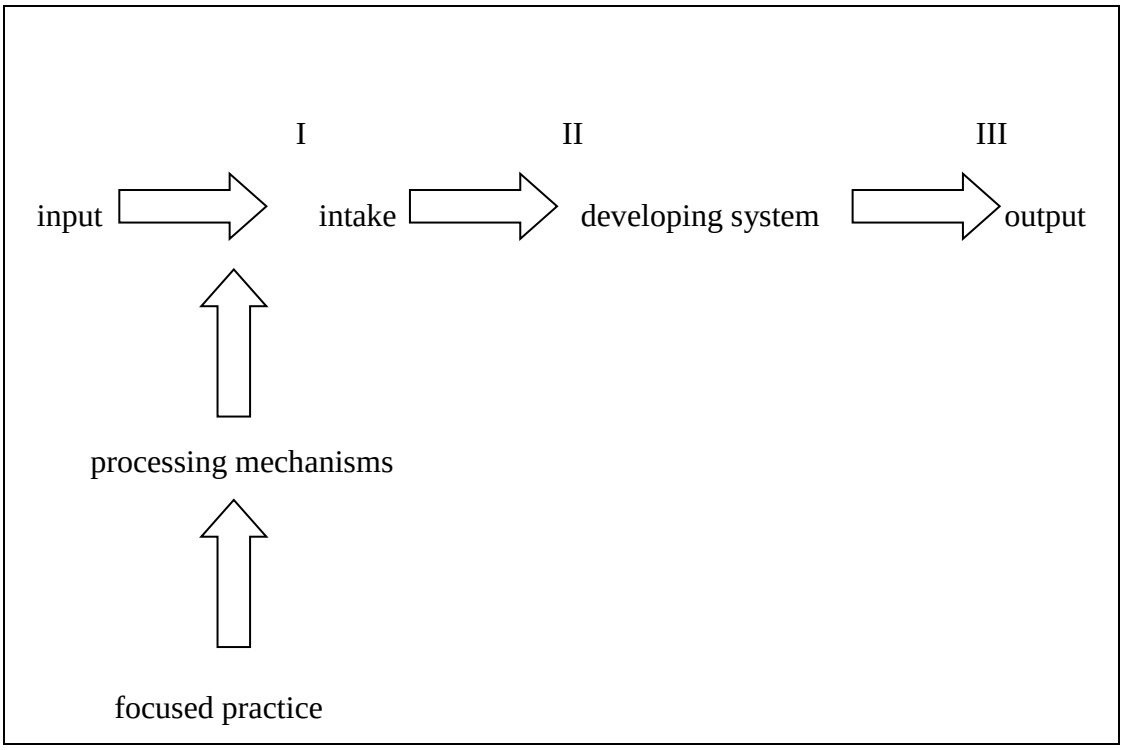

Figure 2.2. Processing Instruction in Foreign Language Teaching (Van Patten & Cadierno, 1993a)

As shown in the Figure 2.2 above, PI intends to make possible changes in the processing of the input through processing mechanisms and focused practice rather than manipulating the output as the TI methods would follow. Therefore, PI is different from other explicit instructions in that "it first identifies the processing strategy that hinders learners from processing a particular form or structure correctly" (Wong, 2004, p. 35). PI is also different from comprehension-based approaches which attempt to provide comprehensible input to the learners and do not deal with how learners process the input during comprehension (VanPatten, 1996).

The chief components of PI are as follows:

1. Learners are provided with information about the target linguistic form or structure.
2. They are informed of the input processing strategies that may negatively affect their processing of the target structure.
3. They carry out input-based activities that help them understand and process the form during comprehension. (Nassaji & Fotos, 2011, p. 24).

PI provides information about the grammatical form explicitly. According to VanPatten and Oikkenon (1996)'s definition, explicit instruction is the "explanation about properties of language provided by an instructor, teaching materials or some other external sources" (p. 6). These explanations also involve processing strategies that can affect processing of the target linguistic form. Following the instruction, input-based activities are carried out with the learners which help them process the form and make form-meaning connections. The activities that are carried out in PI are called structured input (henceforth SI) activities which help in pushing the learners "to become dependent on form and structure to get meaning" (Lee & Benati, 2009, p. 42).

VanPatten (1996) provided the following guidelines for developing SI activities:

1. Present one thing at a time
2. Keep meaning in focus
3. Move from sentences to connected discourse
4. Use both oral and written input
5. Have the learner do something with the input
6. Keep the learners' processing strategies in mind

SI activities are of two types: referential and affective. In referential activities, there is either right or wrong answer **(*see Activities 1, 2, 3 and 4 in Appendix C*)**. Affective activities, on the other hand, are the ones which do not have any right or wrong answer **(*see Activities 5, 6, 7 and 8 in Appendix C*)**. In such activities, learners are asked to provide the questions with answers based on their opinions or experiences. As the SI activities are input-based, the fundamental issue in designing and conducting these activities is that learners are not asked to produce the target item.

As an input-based instruction, PI is interested in incorrect IP with an attempt to avoid it, so its focus is not on output errors in second language development (VanPatten, 1996). On the other hand, VanPatten (2002a) did not ignore the role of output in acquisition. He and other PI researchers tested the effects of PI using interpretation as well as production tests. Initial PI research (e.g. VanPatten & Cadierno, 1993b)

showed that PI had positive effects on learners' ability both in interpreting and producing the target items and "some subsequent research has offered evidence as to the generalizability of the findings of VanPatten and Cadierno, and some research has not" (VanPatten, 2002a, p. 756) .

As the first PI study in the literature, VanPatten and Cadierno (1993b) compared the effects of PI and TI on the acquisition of Spanish object pronouns. The results showed that PI and TI groups both improved significantly in the production tests compared to the CG. As for the interpretation tests, PI group showed significantly higher performance than TI group and the CG. DeKeyser *et al.* (2002) argued that the PI group in the study received more explicit information than required for the production test and that TI group's attention were not drawn to the word order differences which resulted in their having difficulty in comprehension tests. Byun (2007) also argued that production ability can only be gained through production practice, in other words, skill-specificity. He gave examples from output-based studies suggesting that these studies improved learners' output. He also mentioned differing results of the PI studies in which PI and TI were compared. In Cadierno's (1995) study for example, the results indicated that both PI and TI groups improved in the production task. Byun (2007), therefore, suggested that it should be the skill-specificity effect which caused TI group better improved in production than comprehension. Against all these criticisms about the PI and PI vs. TI effects, VanPatten (2002a) explained that PI does not claim that it is the only focus on form approach that leads to better comprehension and production. He also pointed out that the gains of PI and TI group were not compared in terms of comprehension or production in VanPatten and Cadierno's (1993b) study. Instead they concluded that PI and TI groups showed different gains. TI had only production gains; however, PI group was able to process the form better and had access to the new knowledge to produce the target form that they produced first time after the treatment.

2.5. Previous Processing Instruction Research

This section is a review of PI research paradigms starting from comparison of PI to TI and other product-oriented instructions. It continues with the overview of studies

which tested the long-term effects of PI and ends with few studies which investigated re-exposure effects.

2.5.1. Processing Instruction vs. Traditional Instruction Studies

Following the first PI study of VanPatten and Cadierno (1993b), a number of studies compared the effects of PI as an input-based approach with TI as an output-based approach (e.g., Benati, 2001; Cadierno, 1995; Cheng, 2002; VanPatten & Wong, 2004).TI methods of teaching focus on improving learners' knowledge about the language, so the teaching materials and activities have been designed to teach grammar and vocabulary through structural syllabus (e.g. Grammar-Translation Method). In this respect, unlike PI, TI approach does not take into consideration the initial process of SLA but rather the learners' correct use of grammatical patterns. Therefore, the PI researchers hypothesized that "PI would be more effective than TI, since it provides a more direct route for the learner to convert input to intake" (Benati, 2004a, p. 69).

One of the early replication studies was conducted by Cadierno (1995) who compared the effects of PI and TI on the acquisition of Spanish past tense verb morphology. Unlike VanPatten and Cadierno (1993b) who based their study on First Noun Principle (Principle 2), Cadierno tested the effects of PI on the Lexical Processing Principle (Principle 1b). While the PI group received treatment in which their attention was drawn to the verb morphology, TI group were only presented with the past endings and followed by oral practice and the CG received no instruction. She used sentence-level interpretation and production tests in order to measure the instruction effects. She found parallel results to VanPatten and Cadierno (1993b) and suggested that while TI had a positive effect only on learners' production, PI had an impact on both their comprehension and production ability.

The other replication studies which followed the PI vs. TI research paradigm (such as Benati, 2001; Cheng, 2002; VanPatten & Wong, 2004) tested the instruction effects on Spanish as well as other Romance languages such as Italian and French. These studies showed similar results as in VanPatten and Cadierno (1993b) revealing that PI was overall superior to output-based instruction (henceforth OI).

2.5.2. Processing Instruction vs. Meaning-based Output Instruction Studies

A group of study attempted to compare the effects of PI with meaning-based output instruction (henceforth MOI) (e.g. Benati, 2005; Farley, 2001a, 2004) in which the activities were meaning-based rather than mechanical activities as in OI. Benati (2005), for instance, compared PI group with TI and MOI groups on the acquisition of English past simple tense. He reported that PI group performed better than both of the TI and MOI group on interpretation tasks; however, there were no significant differences between all of the three groups on production tasks. Farley (2001a) conducted a study in which she compared PI with MOI on Spanish subjunctive of doubt. The study showed consistent results with Benati's study in which PI group outperformed MOI group on interpretation tasks and both groups equally improved in the production tasks. Farley (2004) conducted a similar study; however, she came up with different results from her previous study. Both PI and MOI groups improved in their ability to interpret and produce the target item in the study. The results of the studies suggested that PI had overall superior effects over MOI in the interpretation tests and both groups had similar gains in production which is also the conclusion drawn from PI vs. TI studies.

In some of the replication studies in which PI has been compared to other OI or MOI, the results were not found to support the argument that PI is more effective than OI or MOI (e.g. Allen, 2000; Collentine, 1998; DeKeyser & Sokalski, 1996). In reaction to the arguments which occurred due to the different results of these studies, VanPatten (2002b) stated that design of these studies as well as the way they have been replicated could have led to such different results.

2.5.3. Summary of the Processing Instruction vs. Output-based Instruction Studies Results

The results of the studies which compared the effects of PI with OI and MOI showed that PI was overall a more effective treatment than the production-based instructions. The following results can also be drawn from the studies:

- Beginner and intermediate level learners had better gains through PI in their ability to interpret the target items than to produce them.
- Other production-based instructions were found to be useful as well in developing the production ability of the learners.
- PI has positive effects on learners with different language backgrounds (e.g. English, Chinese and Greek) and on various target language forms (e.g. Spanish, Italian, French, English)
- PI can be effective on the acquisition of the linguistic items that are based on different processing principles of the IP theory.

2.5.4. Processing Instruction Studies Measuring Long-Term Effects

PI was shown to improve the learners' ability to interpret and produce the target items through comparative studies in which PI as an input-based instruction was compared to output-based instructions. Most of these PI studies examined immediate effects of PI on sentence or discourse-level interpretation and production tasks. Shintani (2015) reported that 29 out of 36 PI studies that she reviewed measured the immediate effects of PI. There have been relatively few studies which tested the durative effects using delayed post-tests. Table 2.1 below shows the studies measuring long-term effects of PI and the time periods of the delayed post-tests.

Table 2.1. Studies measuring long-term effects of PI

Studies	**Delayed Post-Test Application Time Periods**
VanPatten and Cadierno (1993b), Cadierno (1995), Farley (2001a), Birjandi and Rahemi, (2009), Birjandi, Maftoon and Rahemi (2011), Keating and Farley, (2008), Oruç-Ertürk, (2013), Qin, (2008)	1 month after the treatment
Benati (2001), Cheng (2002), Toth (2006)	3 weeks after the treatment
Farley (2001b, 2004)	2 weeks after the treatment
Farley and Aslan (2012), Morgan-Short and Bowden (2006)	1 week after the treatment
VanPatten and Fernandez (2004)	8 months after the treatment
VanPatten, Inclezan, Salazar and Farley (2009)	6 weeks after the treatment

In their early studies of PI, VanPatten and Cadierno (1993b) and Cadierno (1995) examined the durable effects of PI using a delayed post-test one month after the treatment. The results of both studies showed that participants' performances on both interpretation and production tasks maintained. Subsequent studies examined the long-term effects of PI applying delayed post-tests with various time intervals most of them ranging from one week to four weeks after the instruction.

Farley (2001a) compared the effects of PI with MOI on the acquisition of Spanish subjunctive of doubt through sentence-level interpretation and production post-tests. She tested the participants immediately and one month after the treatment as VanPatten and Cadierno (1993b) and Cadierno (1995) did. She found that PI group overall outperformed MOI group in their ability to interpret and produce the target form in the first post-test. They also showed significant effects one month after the instructions. Similar results were found in the studies which tested the long-term effects of PI one month after the instruction (e.g. Birjandi & Rahemi, 2009; Keating & Farley, 2008; Oruç-Ertürk, 2013; Qin, 2008).

Benati (2001) examined PI and output-based treatment effects on the acquisition of Italian future tense by beginner learners both immediately and three weeks after the instruction. The results showed that PI group improved in their ability to interpret and produce the target item and they were able to maintain their gains for three weeks. Cheng (2002) tested whether PI and TI would differently affect learners' ability to interpret and produce sentences containing Spanish verbs *ser* and *estar* through an immediate post-test. He also measured the durable effects through a delayed post-test that he applied three weeks after the instruction as in Benati's (2001) study. The overall results suggested that PI group improved in interpretation and production tests and the PI effects were durable for three weeks.

Farley (2001b, 2004) assessed learners' long-term gains two weeks after the instructions. She compared the effects of PI with MOI on sentence-level interpretation and production tasks involving Spanish subjunctive of doubt. The results of the studies revealed that PI had both immediate and delayed effects.

Morgan-Short and Bowden (2006) investigated PI and MOI effects on the acquisition of Spanish direct object pronouns. They tested the effects through interpretation and production immediate and delayed post-tests. They applied the delayed post-tests a week after the instruction. The results of the study showed that both groups improved their scores in the immediate post-tests and they were able to maintain their gains in the delayed post-tests.

The limited number of PI studies tested the learners over a month after the treatment. VanPatten and Fernandez (2004) tested the effects of PI on the acquisition of Spanish direct pronouns. The immediate post-test findings showed that PI had overall positive effects. These effects of PI were also shown to have maintained eight months after the treatment.

The studies which tested long-term effects of PI showed its durable effects. The learners were able to maintain their gains ranging from one week to eight months. On the other hand, results of some of the studies discussed above showed that there were minor decreases in the delayed post-tests. There are also other studies which found that the effects of PI did not sustain. The interpretation/production or both test scores of the learners in these studies were shown to have decreased significantly in the long run.

Toth (2006) investigated the effects of PI compared to communicative output tasks on beginner learners' acquisition of Spanish anticausative clitic *se*. He measured the effects of the treatments using grammaticality judgment test (henceforth GJT) and guided production tasks immediately and 24 days after the treatments. The results showed that both groups improved significantly from pre-test to immediate post-test. Both groups overall maintained their gains in the interpretation delayed post-test. As for the production test, Toth (2006) found that the performances of PI group decreased in the production test after 24 days. The results were different from Benati (2001)'s and Cheng (2002)'s studies who tested the learners three weeks after the instruction and found that the gains were maintained in both tests.

Birjandi and Rahemi (2009) compared in their study the effects of PI and OI on the acquisition of English causatives. The learners' gains were tested through sentence-

level interpretation and production tests immediately and four weeks after the treatment. The learners were able to improve and also maintain their gains in their ability to interpret target items with a decrease in their performance. The production test results, on the other hand, showed that PI groups' ability to produce the target items decreased from immediate to delayed post-test.

VanPatten, Inclezan, Salazar and Farley (2009) compared the PI and dictogloss effects on the acquisition of Spanish object pronouns and word order. They tested the learners on their ability to interpret and produce the target forms through sentence-level production task and a paragraph-level reconstruction task immediately and six weeks after the instruction. The results of the study showed that PI group improved in the sentence-level interpretation and production tests which were applied right after the instruction; however, their performance declined in the delayed post-test. As for the paragraph-level task, neither of the groups improved significantly from pre-test to immediate post-test and they lost these little gains six weeks after the treatment.

Birjandi, Maftoon and Rahemi (2011) examined PI and OI effects on the acquisition of English passives by Iranian learners. The assessment tests they used were composed of sentence-level interpretation and production immediate and delayed post-tests. The delayed post-tests were given to the learners four weeks after the treatment. Both groups showed positive effects of the treatments in the interpretation as well as production tests. While their gains were durable in the interpretation tests, their production task performances declined significantly in the delayed post-test.

Farley and Aslan (2012) investigated PI and MOI effects on the acquisition of English subjunctive. They tested the intermediate level learners of English through sentence-level interpretation and production tests that they applied immediately and a week after the instructions. The interpretation test results showed that both groups improved in their ability to interpret the target item; however, the performances of both groups declined significantly a week after the instruction. The production data showed that both groups made significant gains in the immediate post-test with some decline in the delayed post-test.

2.5.5. Summary of the Processing Instruction Studies Measuring Long-Term Effects

- The findings showed that PI had durable effects ranging from one week to eight months.
- PI was shown to have long-term effects on beginner and intermediate proficiency level L2 learners.
- The learners were able to maintain their gains but they did not show any improvements in the long run. Their performances were either kept constant between two post-tests or somewhat decreased in the delayed post-tests.
- The improved performances of the learners from immediate to delayed post-tests decreased significantly as shown by some of the PI studies testing the learners at different time intervals (ranging from one week to six weeks).
- The studies demonstrated a decline mostly in production task performances of learners rather than the interpretation tasks.

2.5.6. Processing Instruction Studies Measuring Re-Exposure Effects

The long-term effects of PI were investigated by researchers in order to test whether the positive effects of PI were durable or not. The results of the majority of these studies discussed in *Section 2.4.3* and summarized in *Section 2.4.4* above showed that learners were able to maintain their gains in the long run. These studies showed, however, through delayed post-test results that these gains did not improve in the long run and showed minor declines. These declines were significant in some of the studies particularly in the production tests. A couple of researchers, therefore, aimed to find out whether repeated exposure (re-exposure) could improve the learning effects of PI in the long run.

Hikima (2011) investigated re-exposure effects of PI on the acquisition of Japanese passive forms. He applied sentence and discourse-level interpretation and production tests immediately after the first PI and a week after the re-exposure to the PI treatment. For the aim of testing PI and re-exposure effects, he carried out two experiments. In the first experiment, the PI group received two-hours of treatment and the CG did not receive any treatment. Both groups were tested immediately on

the treatment day through sentence and discourse-level interpretation and production tests. In the second experiment, he followed the same procedure as in the first experiment. A week after the PI treatment, extra SI activities were conducted with the PI group for an hour. Sentence and discourse-level interpretation and production tests were applied a week after the treatment. The results of the first experiment revealed that PI group outperformed the CG in the sentence-level as well as discourse-level interpretation and production tests. The second experiment results showed that re-exposure treatment group improved in their ability to interpret and produce sentence and discourse-level tasks. Therefore, practicing Japanese passive forms through SI activities helped learners maintain their gains.

Benati (2015) conducted a similar study in which he examined PI and its re-exposure effects on the acquisition of Japanese passive forms using the instructional packet that Hikima (2011) developed. He conducted the study with three groups of learners: PI-only group, PI re-exposure group and the CG. Benati (2015) investigated whether re-exposure to the PI would help learners maintain and strengthen their gains on sentence-level production and sentence and discourse-level interpretation tests. He conducted two experiments in order to compare the PI-only and PI re-exposure effects. In the first experiment, three-hour long PI treatment was provided to the PI-only as well as PI and re-exposure group except for the CG. The tests were given to the learners as immediate post-tests right after the first PI treatment. A week after the first experiment, the second experiment was conducted. In this experiment, only the PI re-exposure group received two-hours of PI and the groups were tested through delayed post-tests three weeks after this re-exposure treatment. The findings of the first experiment revealed that PI was effective in learners' ability to interpret and produce sentence-level tasks as well as to interpret discourse-level tasks. The delayed post-test results showed that re-exposure treatment helped PI re-exposure group to improve significantly from immediate to delayed post-tests involving sentence and discourse-level interpretation and sentence-level production tasks.

The two studies measuring re-exposure effects of PI tested whether English learners' ability to interpret and produce sentence and discourse-level Japanese passive forms could be improved. The supporting results of the hypothesis showed that re-exposure to the PI treatment or to the SI activities can be used to increase the performances of

the learners from immediate to delayed post-tests which could not be achieved by PI treatment itself.

CHAPTER 3

METHOD OF RESEARCH

3.1. Presentation

This chapter presents the method and procedures used to measure the effects of PI on the acquisition of English NAI constructions. In the first part, the research design is described. In the second part, the NAI constructions and the reasons for selecting that topic are explained. Then, the participants from whom the data were collected, the background questionnaire, instructional materials and the assessment tools are presented. In the fourth part, the procedure is provided. The scoring and data analysis methods are described in the following part, and the piloting process is explained in the last part.

3.2. Research Design

The data were gathered through an experimental study from English as a Foreign Language (henceforth EFL) learners. A pre-test and post-test design was adopted and the learners were randomly assigned to two experimental groups in which EG1 received re-exposure to PI and EG2 received PI only once and a CG. Informant treatment and research design are presented in Table 3.1 below:

Table 3.1. Research Design

	GROUPS			
	EG1	EG2	CG	
				WEEK 1
Background Questionnaire	√	√	√	
				WEEK 2
Pre-tests	√	√	√	
				WEEK 4
Treatment (4 hours)	√	√	x	
				WEEK 4
Immediate Post-Tests	√	√	√	
				WEEK 6
Delayed Post-Tests 1	√	√	√	
				WEEK 8
Re-Exposure (1 hour)	√	x	x	
				WEEK 28
Delayed Post-Test 2	√	√	√	

The independent variable in the experiments was the treatments (both explicit instruction and SI activities). The dependent variable was the scores of the participants on the tests. The pre-tests and post-tests were comprised of interpretation and production sentence level tasks.

The tests and treatments were conducted by the researcher. The instructor and the students were informed about the study and students were asked to sign a consent form to participate in the study.

3.3. The Linguistic Item of the Study

The target item for this study was NAI constructions which require inversion in English when they are preposed. English is a subject-prominent language and it follows SVO order such as in (1):

(Subj.) (Verb) (Obj.)

(1) John plays soccer.

Inversion takes place when some constituents in the sentence except for the verb shift to the initial part of the clause and is followed by Verb-Subject (henceforth VS) or Auxiliary-Subject-Verb (henceforth ASV) order (Dorgeloh, 1997, p. 16). The Verbs in VS forms are main verbs such as *run, smile, read*, and Auxiliaries in ASV forms can either be *have, do, be* auxiliaries or modal auxiliaries such as *will, can, may*. NAI is a type of Subject-Auxiliary-Inversion (henceforth SAI); therefore when Negative Adverbials are in the initial position of the sentence, they are followed by the ASV order such as in (2):

(Neg. Adv.) (Aux. *do*) (Subj.) (Verb) (Noun)

(2) Hardly ever does John play soccer.

Any simple sentence can also be embedded and "becomes a subordinate clause in a complex sentence" (Haegeman, p. 12) such as in (3) and (4):

(Main Cl.) (Subordinate Cl.)

(3) She took her umbrella because it is raining outside.

(Subordinate Cl.)

(4) The house [where Mary grew up] is very old.

The NAI constructions may possibly be used in embedded sentences (Green, 1985). In the present study only examples of *That-clause* were used in which *that* is the

complementizer in embedded NAI constructions as in (5) and indirect speech acts as in (6):

(5) My father knows that rarely does Christine arrive on time.

(6) David said that never did he visit Istanbul.

Unlike English, Turkish sentences mostly follow SOV order and "adverbs generally precede the verb, an adjective, or adverb they modify" (Erguvanlı, 1984, p. 136) as in example (7) below:

(Subj.) (Noun) (Adv. of manner) (Verb)

(7) Ceren arabayı dikkatli kullanır.
(the car-acc) (carefully) (drives-Pres.)

'Ceren drives the car carefully.'

Although SOV order is a general grammatical rule in Turkish, the word order is flexible. It is possible to use inverted word order constructions. On the other hand, there is no such rule that NAI constructions require inversion.

As Haegeman (1994) put it, embedding principle is a universal principle, and all languages own this grammatical rule. For example, indirect speech in Turkish takes the form of a nominalized clause (Kornfilt, 1997) as in (8):

(8) Sema İngilizce'yi sevdiğini söyledi.

(English-acc) (that she liked) (say-Past)

'Sema said that she liked English.'

Unlike English, Turkish negative adverbs do not require inversion when they are used in embedded clauses such as in (9):

(9) Ahmet nadiren araba kullandığını söyledi.
(rarely) (car) (that he drives) (say-Past)

'Ahmet said that rarely does he drive a car.'

Turkish learners of English may have difficulty in acquiring NAI forms because of these different inversion rules in Turkish and English. The particular problem that Turkish learners of English may experience in the acquisition of NAI forms is the Verb-second (V2) phenomenon found in English but not in Turkish. In English, when the specific negative adverbials are fronted, it leads to SAI "to a word order in which the finite verb occurs in second position" (Haeberli, 2002, p. 88).

Another difficulty for these learners could stem from the problem of form-meaning mapping. Lack of transparency between the form and meaning connection can make the acquisition of form-meaning mapping problematic (De Keyser, 2005). According to DeKeyser (2005), the lack of transparency in inversions can be due to opacity which is "a complex form of the problem of low form-meaning correlation" (p. 8). DeKeyser (2005) suggested that optionality is a common form of opacity which means that if it is possible for learners to use SVO order with a negative adverbial, they may tend to favor it over NAI with ASV order. He mentions one more factor that can lead to form-meaning mapping difficulty and that is frequency. NAI forms are used with a specific aim, so they are not as common as SVO order in ordinary conversations. Reinders and Ellis (2009) mentioned the rare use of negative adverbs of inversions after they made British National Corpus (henceforth BNC) analysis.

As not all negative adverbs in the initial position trigger inversion, the following 12 negative adverbials in Table 3.2 were selected for this study based on a literature review of multiple sources (e.g., Büring, 2004; Sobin, 2003; Quirk, et al. 1985).

Table 3.2. Negative Adverbials of the Study

N	**NEGATIVE ADVERBIALS**
1.	At no time
2.	Hardly (ever)
3.	In no case
4.	In no way
5.	Never
6.	No longer
7.	Not even once
8.	On no account
9.	Rarely
10.	Scarcely
11.	Seldom
12.	Under no circumstances

The selected adverbials above make the meaning of the sentence negative. In other words, the action in the sentences does/did not happen.

The processing problems that Turkish learners of English may experience in forming and/or using grammatically correct NAI constructions could stem from the *Primacy of Meaning Principle* and its sub-principle *The Preference for Non-Redundancy Principle*. The Primacy of Meaning principle suggests that learners pay attention to the meaning before they process it for form because of working memory constraints (VanPatten, 2004). In other words, the learners give priority to the meaning in the input, so learners may tend to focus on the negative meaning of the sentence before its form. According to *The Preference for Non-Redundancy Principle,* learners are more likely to process non-redundant meaningful grammatical forms before they process redundant meaningful forms. The meaning of a sentence with NAI construction is conveyed lexically through negative adverbs and this makes the inversion redundant. In this respect, as Turkish learners of English might focus on the meaning when they interpret or produce NAI constructions and as they process non-redundant meaningful item before the redundant ones, this may lead to grammatically incorrect interpretation or production of the constructions.

These principles may work in coordination with *Sentence Location Principle* in processing embedded NAI constructions. It suggests that learners tend to process items in the initial position of the sentence before those in medial and final positions (VanPatten, 2004). When learners hear or see the inverted embedded construction with the negative adverbial in the medial position, they may pay less attention to it than the elements in the initial and final position. VanPatten (2004) has also mentioned L1 Transfer Principle as a possibility that "learners begin acquisition with L1 parsing procedures". Therefore, Turkish learners of English may have difficulty in parsing English NAI constructions because of the difference between Turkish and English word order as mentioned above.

The negative adverbs of inversion were used as the target item in different types of studies. Reinders and Ellis (2009) tested the effects of two different types of input enhancement on intake and acquisition of negative adverbs. Reinders (2010) also tested the effects of implicit and explicit instructions as well as different task characteristics on the intake and acquisition of negative adverbials of inversion. Both researchers regarded negative adverbials as a "difficult grammatical structure" in terms of both implicit and explicit knowledge. This might be one reason for its use by a small number of studies.

3.4. Participants

The study was conducted with three groups of advanced level Turkish learners of English at a state university in Turkey. The participants were selected randomly among the senior undergraduate students in a four-year English Language Teaching (henceforth ELT) program. The experiment was carried out in one of their must courses. The age range of the participants was 22- 24.

3.5. Background Questionnaire

The background questionnaire was used for two purposes. The first aim was to elicit information about participants' English proficiency level and language background in detail. The participants in the study were ELT candidates in their senior year of a four-year university program. Therefore, their English language level was presumed

to be advanced. However, their standard test results (TOEFL/IELTS) were asked in order to validate their proficiency level. In the first section of the questionnaire, the participants were asked to write the results of the TOEFL or IELTS that they took in order to validate their high command of English. They were also asked to indicate the exam date to make sure that the scores would be still valid at the time of the study. It was revealed that the participants provided their TOEFL scores between 0-120. Therefore, the TOEFL scores of the students were interpreted based on the TOEFL's IBT descriptors. The scoring table is provided in TOEFL'S website which shows the score range and levels for each four skill. According to the table, the test taker who gets between 22-30 points from reading and listening skills is a high-level achiever. In addition, the test taker should receive between 26-30 points from speaking skill and between 24-30 points from writing skill to show that s/he has a good command of these skills. Based on the given score descriptors, the participants in the study who scored 94 and above from the TOEFL IBT were assumed to have an advanced level of English proficiency. As for the IELTS, according to the English Embassy's website advanced level corresponds to C1 and proficient level to C2 as CEFR levels. C1 and C2 are equal to scores between 6-7 and 7-8 respectively. Therefore, the participants of the study who scored 6 and above in the IELTS were regarded as advanced level learners of English. In addition, information about participants' L1 language background and other languages that they might have spoken was used in the elimination process.

The second aim was to find out whether the participants had any knowledge about the form, meaning, or use of the NAI constructions or not. The participants were also asked whether they were taught that grammar topic explicitly or not because their previous knowledge about the topic would affect the results of the study. Furthermore, as the participants had high command of English, the preliminary information about their knowledge of the linguistic item of the study would improve the validity of choosing the appropriate grammatical feature that would be taught to the participants.

3.6. Instructional Materials

The treatment and the SI activities that followed the treatment were developed by the researcher. The instructional materials were designed following the three stages of PI: (1) explicit instruction about NAI constructions **(see Section A in Appendix B)**, (2) information about the processing strategies **(see Section B in Appendix B)** and (3) two different types of SI activities: referential and affective **(see Appendix C)**. The explicit instruction about the NAI constructions was organized based on what, how, and why questions (i.e. the introduction and description of the NAI constructions, how they are constructed, and the purpose of their use in English). As for the information about the processing strategies section that follows the instruction, it was an attempt to get the participants to notice the potential processing problems that may obstruct the opportunities for intake. For this aim, the principles of NAI constructions were developed with the processing strategies in mind. The potential processing problems based on IP theory principles (i.e. the Primacy of Meaning, The Preference for Non-Redundancy Principle and Sentence Location Principles discussed in section 1.3) were highlighted in the instruction using attention seekers (e.g. "Keep in mind" warnings, and highlighted words and phrases). These inversion rules were also developed regarding the Turkish and English structural differences (as discussed in detail in section 1.3). The errors in the interpretation and production tests at the piloting phase and pre-test results (such as using "not" in the negative sentences) were also added as warnings in the instruction section.

In order to increase the attention of the participants, the instruction was printed in handouts and they were distributed to the participants. The handouts had been collected at the end of the session before the immediate post-tests were given.

The instructions for activities and the treatment were given in English due to their high level of English language proficiency and since English is the medium language used to deliver the classes in the institution where the study was conducted. The participants were not asked to produce the target forms during the treatment. The treatment and the SI activities took four class hours and they were provided consecutively on the same day. The aim of these activities was to push the participants to rely on the negative adverbials which were located in the initial

position to make form-meaning connections. In order to accomplish the tasks, participants' attention had to be on the meaning of the sentences. Two types of SI activities were used: referential and affective. The activities were a combination of both oral and written input as suggested by VanPatten, regarding the individual differences in the participant groups. Therefore, there were 4 referential activities (2 reading and 2 listening) and 4 affective activities (2 reading and 2 listening) in total which were printed in a mixed order.

3.7. Assessment Tests

Two types of sentence-level tests were used to assess the participants' knowledge of English NAI constructions: GJT (**see Appendix D**) and PT (**see Appendix E**).

GJT was composed of 40 sentences, 12 of which were target items and 28 were distractors. Half of the target items and distractors were ungrammatical. Each sentence was carefully formed with 13 words so that lengthiness would not have a directing effect on participants' grammaticality judgments. The participants were asked to decide whether the sentences were well-formed based on a 5-Likert Scale of degree of certainty (1= Completely Ungrammatical, 5= Perfectly Grammatical). In order to reduce the guessing probability, the researcher asked the participants to underline the problematic part of the sentence if they thought there had been any. Two examples were also provided as a guide.

PT was composed of two tasks: **rewriting** and **dialogue completion**. Each task was composed of 12 items in which half of them were target items. In the rewriting task, the participants were asked to rewrite the given sentences without changing their meaning. The beginnings of the sentences in this task were provided as a clue. As part of the dialogue completion task, mini two-person dialogues were created and the participants were required to complete the given sentences based on the second person's reply in the dialogue. The beginnings of the sentences were provided in this task as well.

The administration of the tests was carefully planned (e.g. timing, sequence of tests) in order to control test learning effects. One way of achieving this was by using a

split block-design. Each group received different versions of the same GJT and PT. Versions A and B of the GJT comprised the same items but their order was reshuffled in the two versions. The two tasks in Versions A and B of the PT were the same as well but they were put in different orders. The group who completed version A in the pre-tests was given version B as an immediate post-test. As for the delayed post-test 1, the group who received version A as a pre-test received version B, and the distribution of the lists as delayed post-test 2 was the same as the immediate post-test phase. The chart in Table 3.3 below displays the distribution of the tests:

Table 3.3. Test Administration

Groups	Pre-Test		Immediate Post-Test		Delayed Post-Test 1		Delayed Post-Test 2	
All groups	GJT Ver 1	PT Ver 2	GJT Ver 2	PT Ver 1	GJT Ver 1	PT Ver 2	GJT Ver 2	PT Ver 1

Another way of controlling test learning effects was to organize the sequence in which the tests would be given to the participants. For this aim, the order of test distribution was mixed. Half of the groups received GJT first and PT second, and the other halves received PT first and GJT second. The purpose of such organization was to eliminate the possibility of higher level of success in one test over the other since the participants would have transferred the information they retrieved from the first test to the other.

The tests were paper-based and the instructions related to the completion of each of the tasks were provided before each of them. To avoid misunderstanding and keeping in mind the different needs of the students participating in the study, instructions were also given orally as well as on a PowerPoint slide. After completing each 'instruction presentation', participants were asked whether they required further clarification. If the answer was 'No', the students were instructed to begin completing the tasks. While the students were working on the tests, the researcher went around the classrooms observing and reminding participants to follow the instructions and not to leave blank the test items.

3.8. Procedure

At the beginning of the study there were 72 participants in three groups. All students were given background questionnaires **(see Appendix A)** in the first week of the study and pre-tests in the week that follows and these were used to select participants for the study. Following the literature in the field, it was decided not to include the participants whose mother tongue was not Turkish and who stayed in a foreign country for more than 6 months. Based on these criteria, three exchange students whose mother tongues were not Turkish were eliminated from the study. In addition, four students who scored 60% or above in the pre-tests were excluded from the study since they possibly had previous knowledge of the NAI constructions. The total number of final group was 65 divided into three groups: EG1 22, EG2 22, and CG 21 students.

EG1 and EG2 were taught NAI constructions through PI followed by SI activities two weeks after the administration of the pre-tests. The treatment took four class hours. CG did not receive any instruction. The immediate post-tests were administered right after the treatment to EG1 and EG2 and concurrently to CG. Two weeks after the instruction all three groups were tested again through delayed post-test 1. EG1 received PI second time four weeks after the first PI. The other two groups did not receive any instruction. The last post tests were administered to all three groups six months after the first PI as delayed post-test 2.

3.9. Scoring

The GJT was based on a 5-point Likert Scale (1= Completely Ungrammatical, 5= Perfectly Grammatical). If the participant circled “5” in a grammatical sentence, 2 points was awarded; if s/he circled “4”, 1 point was awarded; no point was given if s/he circled “3”, “2” or “1”. Similarly, “2” points was awarded if the participant chose “1” in an ungrammatical sentence and underline the ill-formed “Negative Adverb + Auxiliary + Subject” order; 1 point for choosing “2”, and “0” point for choosing “3”, “4” or “5”. Maximum score for GJT was 24 points.

The scoring of PT was as follows: The participant received "2" points for correct answer and "0" point for the incorrect ones. The maximum score a participant could get was 24. The only condition for earning "2" points was to be able to follow the "Negative Adverb + Auxiliary + Subject" order. None of the other grammatical issues were taken into consideration.

3.10. Data Analysis

The results of the GJT and PT that were applied to EG1 and EG2 were compared to those of the CG. One-way ANOVAs were conducted on the raw scores of the pre-tests. Repeated measures ANOVAs were conducted on both pre-test and post-test scores to measure instruction and time effects. Because of the violations, however, non-parametric tests were used (*see Chapter 4 for details*).

3.11. Piloting

The treatment pack and the assessment tests were piloted before the actual experiment. The treatment was piloted with a group who showed similar characteristics to the actual participants. The tests were first piloted by a native speaker of English who had been teaching English for 8 years in Turkey at the time of the study. He went over the items in the tests in order to identify whether there were any grammatically incorrect or semantically awkward test items. Then, a Turkish teacher of English with 9 year experience of teaching English to learners with different levels of English reviewed the tests. The teachers were asked to do the test and note down the problematic parts (e.g. grammar, punctuation, comprehensibility). The course instructors also examined the items with the aim of identifying their appropriateness for the proficiency level of the participants. Following the revisions of the native speaker, the teacher of English and the course instructors, the assessment tests were piloted with 10 voluntary participants who were randomly selected from sophomore students in ELT department (i.e. the same department with the actual participant groups). The GJT items were divided into 10 item groups and distributed to the participants with the PT. In the first phase of the study, the participants were asked to do the test so that the timing for tests could be estimated. After the completion of the tests, the piloting group was asked to evaluate

the items included in the test and to comment on the sections they found problematic. Based on the piloting feedback, the phrases and sentences in test items which were stated as unclear were rewritten. The time allotted for the tests was also determined. It took approximately one hour to complete the tests.

CHAPTER 4

RESULTS

4.1. Presentation

The current study aims to measure the effectiveness of PI and re-exposure effects on NAI constructions at both interpretation and production levels. This chapter presents the results of the PI experiment. First, the sentence level pre-test and post-test scores of the participants were analyzed. One-way ANOVAs were conducted on the raw scores for the interpretation and production pre-tests to examine whether statistically significant differences exist between three groups. As the normality assumption was violated, non-parametric test (Kruskal-Wallis H test) was used which did not require the assumption of normality.

Second, repeated measures ANOVAs were conducted on both pre-test and post-test scores to measure instruction and time effects. As the assumption of homogeneity of variances and test of sphericity were violated, different non-parametric tests were used separately in order to measure the PI treatment and its durability effects. Welch test and Games-Howell post hoc tests were run to measure the instruction effects of PI between groups. Within-group Wilcoxon Signed-Rank test as a non-parametric alternative to t-test was run on the test scores of each group to assess their improvement from pre-test to post-tests. For the measurement of durable effects of PI treatment, Friedman test was conducted on the three post-test scores of each experimental group. Lastly, the re-exposure effects were measured using Mann Whitney U test as a non-parametric alternative of independent t-test.

4.2. Pre-Test Results

Kruskal-Wallis H test was used to analyze raw scores of GJT and PT as pre-tests between two experimental groups (EG1, EG2) and the CG in order to find out if

there was a statistically significant difference among these three groups before the treatment. The following tables and figures show the final sample of the study: EG1 22, EG2 22 and CG 21.

4.2.1. The Interpretation Test (GJT) Results before the Treatment

The target items in GJT were composed of 12 sentences with NAI constructions half of which were simple inverted sentences and the rest were embedded in *That-Clauses*. The GJT was based on a 5-point Likert-Scale and the participants were asked to decide whether the sentences in the test were grammatical or ungrammatical by circling one of five numbers ranging from 1 (Completely Ungrammatical) to 5 (Perfectly Grammatical). Kruskal-Wallis H test was used to check whether three groups involved were equal or not in their GJT scores before the PI treatment. The mean ranks of the groups as shown in Table 4.1 were close to one another as the following: EG1 (*M* = 36.2), EG2 (*M* = 30.7), and CG (*M* = 32). The Kruskal-Wallis H test statistics showed that there was no statistically significant difference across groups *H* (2) = 1.037, p =.595.

Table 4.1. Kruskal Wallis H Test Results for GJT

case_no	N	Mean Rank
EG1	22	36,20
EG2	22	30,70
CG	21	32,05
Total	65	

4.2.2. The Production Test (PT) Results before the Treatment

The target items in PT were composed of 12 sentences with NAI constructions half of which were *That-Clauses*. The test was divided into two tasks: Short dialogues and rewriting. 6 of the items were included in the first task and the rest in the second task.

As in the GJT analysis, Kruskal-Wallis H test was conducted to check whether three groups were equal or not before the treatment in terms of their PT scores.

Table 4.2. Kruskal Wallis H Test Results for PT

	case_no	N	Mean Rank
	EG1	22	37,32
	EG2	22	29,07
	CG	21	32,60
	Total	65	

It is clear from the ranks in Table 4.2 above that the mean ranks were close to each other with EG1 (*M* = 37.3), EG2 (*M* = 29), and CG (*M* = 32.6). The p-value in Kruskal-Wallis H test, *H* (2) = 2.540, p =.281 also indicated that there were no statistically significant differences across three groups.

The Kruskal-Wallis H test results of GJT and PT showed that there were no statistically significant differences between experimental groups and the CG before the treatment. These 65 participants who had been randomly assigned into three groups were assumed not to have prior knowledge of the NAI constructions. Therefore, an improvement in the post-test scores would be an evidence of the benefit of the PI treatment.

4.3. Pre-test and Post-tests Results

Repeated measures ANOVA was used to analyze interpretation (GJT) and PT scores as pre-tests, immediate post-tests and delayed post-tests between two experimental groups (EG1, EG2) and the CG in order to find out the instruction and time effects of PI. The variations in the repeated measures ANOVA for the study were between and within-groups variations; therefore, it can also be called "mixed between-within ANOVA" or "mixed ANOVA". The PI treatment that was given to two experimental groups except for the CG was the between group variable. The within group variables were the pre-tests and post-tests that participants took in different time intervals. As the homogeneity of variance and the assumption of sphericity were violated in mixed ANOVA, Welch test was run as a non-parametric alternative test to find out between-groups effects. Games-Howell post hoc test which does not rely on equal variances sample sizes was run to compare groups. For within groups pre-test and post-test comparison, Wilcoxon Signed-Rank non-parametric test equivalent

to the t-test was used. Then, Friedman test was run as the non-parametric alternative for repeated measures ANOVA to compare post-test results of experimental groups in order to test whether the PI treatment had durable effects. Lastly, the re-exposure effects were tested via Mann Whitney U test. The delayed post-test 2 scores of EG1 who received re-exposure after the delayed post-test 1 were compared to the scores of EG2 who received PI treatment only once.

4.3.1. The Interpretation Test (GJT) Results after the Treatment

As Table 4.3 below represents, the Welch test results were significant at the level of immediate post-test, Welch's F (2, 41.17) = 121.3, p <.05, as well as the delayed post-test1, Welch's F (2, 39.45) = 55.83, p <.05 and delayed post-test 2, Welch's F (2, 33.56) = 225.9, p <.05. The results showed that the groups differed significantly on their average GJT scores.

Table 4.3. Welch's F ratios for Grammaticality Judgment Post-Tests

		Statistic[a]	df1	df2	Sig.
Immediate	Welch	121,356	2	41,175	,000
Delayed_1	Welch	55,838	2	39,458	,000
Delayed_2	Welch	225,905	2	33,561	,000

a. Asymptotically F distributed.

As the Welch test results were significant, Games Howell test was used as a post-hoc test in order to find out how the groups differed in terms of their GJT scores in the post-tests.

Table 4.4. Games-Howell Post-Hoc Test for Grammaticality Judgment Post-Tests

Dependent Variable		(I) case_no	(J) case_no	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Immediate	Games-Howell	EG1	EG2	,90909	,69645	,400	-,7831	2,6013
			CG	8,97186*	,65394	,000	7,3801	10,5636
		EG2	EG1	-,90909	,69645	,400	-2,6013	,7831
			CG	8,06277*	,63624	,000	6,5149	9,6107
		CG	EG1	-8,97186*	,65394	,000	-10,5636	-7,3801
			EG2	-8,06277*	,63624	,000	-9,6107	-6,5149
Delayed_1	Games-Howell	EG1	EG2	,40909	,71175	,834	-1,3348	2,1530
			CG	6,24459*	,60560	,000	4,7667	7,7225
		EG2	EG1	-,40909	,71175	,834	-2,1530	1,3348
			CG	5,83550*	,78169	,000	3,9317	7,7393
		CG	EG1	-6,24459*	,60560	,000	-7,7225	-4,7667
			EG2	-5,83550*	,78169	,000	-7,7393	-3,9317
Delayed_2	Games-Howell	EG1	EG2	7,59091*	,64869	,000	5,9795	9,2024
			CG	11,16450*	,57829	,000	9,7285	12,6005
		EG2	EG1	-7,59091*	,64869	,000	-9,2024	-5,9795
			CG	3,57359*	,81384	,000	1,5938	5,5534
		CG	EG1	-11,16450*	,57829	,000	-12,6005	-9,7285
			EG2	-3,57359*	,81384	,000	-5,5534	-1,5938

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

The Games-Howell post hoc test for immediate interpretation post-test results were given in Table 4.4 above and indicated that EG1 and EG2 did not significantly differ from each other, p = .400, >.05 but they were significantly different from the CG, p = .000, <.05. The post hoc test revealed similar results for the first interpretation delayed post-test. While the test results of EG1 and EG2 were not statistically significant, p = .834, >.05, the results of CG were significantly different from those of EG1 and EG2, p = .000 <.05. As for the second delayed post-test results, all groups showed significantly different performances from each other, p = .000 <.05.

The Welch and Games-Howell post hoc tests above showed the post-tests differences between groups. Wilcoxon Signed-Rank test was run in order to find out which groups improved significantly in their ability to interpret NAI constructions from pre-tests to post-tests. The Wilcoxon Signed-Rank test was run between the pre-test and immediate post-test results of each group. The interpretation test results of these analyses are shown in Table 4.5 below.

Table 4.5. Within-Group Wilcoxon Signed-Rank Test Results for GJT

case_no			N	Mean Rank	Sum of Ranks
EG1	Immediate - PreTest	Negative Ranks	0[a]	,00	,00
		Positive Ranks	22[b]	11,50	253,00
		Ties	0[c]		
		Total	22		
EG2	Immediate - PreTest	Negative Ranks	0[a]	,00	,00
		Positive Ranks	22[b]	11,50	253,00
		Ties	0[c]		
		Total	22		
CG	Immediate - PreTest	Negative Ranks	1[a]	1,00	1,00
		Positive Ranks	3[b]	3,00	9,00
		Ties	17[c]		
		Total	21		

a. GJT_Immediate < GJT_PreTest

b. GJT_Immediate > GJT_PreTest

c. GJT_Immediate = GJT_PreTest

According to Table 4.5 above, both experimental groups significantly improved after the PI treatment. The GJT immediate post-test scores of all of the participants in EG1 and EG2 were higher than their pre-test scores. The test showed that PI treatment made a significant change in the interpretation of NAI constructions of EG1 (Z = -4.122, p = .000) and EG2 (Z = -4.115, p = .000) compared to the CG (Z = -1.512, p = .131). The GJT mean values in Table 4.6 below also showed that while the ratings of EG1 improved from M = 7.8 to M = 16.5 and EG2 from M = 7.1 to M = 15.6 after

the treatment, the mean values of CG who did not receive treatment only improved to M = 7.6 from M = 7.3 in the immediate post-test.

Table 4.6. Descriptive Statistics Within-Group Wilcoxon Signed-Rank Test for GJT

case_no		N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
EG1	PreTest	22	7,8182	1,56255	5,00	11,00	7,0000	7,0000	9,0000
	Immediate	22	16,5909	2,36359	13,00	22,00	15,0000	16,0000	18,0000
EG2	PreTest	22	7,1818	2,73664	3,00	13,00	4,7500	7,0000	9,0000
	Immediate	22	15,6818	2,25486	12,00	20,00	14,0000	15,0000	17,0000
CG	PreTest	21	7,3810	1,80212	5,00	11,00	6,0000	7,0000	8,5000
	Immediate	21	7,6190	1,90987	4,00	11,00	6,0000	8,0000	9,0000

The first half of the first research question in the study which aimed to examine the possible effects of PI treatment on the interpretation of NAI constructions was attempted to be answered so far using between group tests (Welch test and Games Howell post hoc test) as well as within-group Wilcoxon Signed-Rank test. The between group Welch test and Games Howell post hoc tests showed that immediate and delayed post-tests results of the two experimental groups were significantly higher than the CG. This result suggested that PI treatment had positive effects on the interpretation of NAI constructions. The significant differences were also found using within-group Wilcoxon Signed-Rank test between pre-test scores and immediate post-test scores of the experimental groups.

For testing the time effects of PI treatment, Friedman test was used on the raw scores of the immediate and two delayed post-tests of experimental groups (EG1 and EG2). Table 4.7 below presents the descriptive statistics for each of the time points for post-tests results.

Table 4.7. Descriptive Statistics Friedman Test for Grammaticality Judgment Post-Tests

case_no		N	Mean	Std. Deviation	Minimum	Maximum
EG1	Immediate	22	16,5909	2,36359	13,00	22,00
	Delayed_1	22	12,8636	1,69861	10,00	16,00
	Delayed_2	22	16,5455	1,01076	15,00	18,00
EG2	Immediate	22	15,6818	2,25486	12,00	20,00
	Delayed_1	22	12,4545	2,87398	8,00	17,00
	Delayed_2	22	8,9545	2,86983	4,00	14,00

There was a statistically significant difference between immediate and delayed-post tests for experimental groups as follows: EG1, X^2 (2) = 30.530, p = .000; EG2, X^2 (2) = 40.667, p = .000.

Separate Wilcoxon Signed Rank tests were run on different combinations of the interpretation post-test results to examine where the exact differences occurred for each group. Bonferroni adjustments were used on the Wilcoxon Signed Rank tests results to make multiple comparisons.

Table 4.8. Wilcoxon Signed-Rank Post-Hoc Ranks for Grammaticality Judgment Post-Tests

case_no			N	Mean Rank	Sum of Ranks
EG1	Immediate - Delayed_1	Negative Ranks	0[a]	,00	,00
		Positive Ranks	20[b]	10,50	210,00
		Ties	2[c]		
		Total	22		
	Immediate - Delayed_2	Negative Ranks	11[d]	9,77	107,50
		Positive Ranks	9[e]	11,39	102,50
		Ties	2[f]		
		Total	22		
	Delayed_1 - Delayed_2	Negative Ranks	21[g]	11,00	231,00
		Positive Ranks	0[h]	,00	,00
		Ties	1[i]		
		Total	22		
EG2	Immediate - Delayed_1	Negative Ranks	0[a]	,00	,00
		Positive Ranks	17[b]	9,00	153,00
		Ties	5[c]		
		Total	22		
	Immediate - Delayed_2	Negative Ranks	0[d]	,00	,00
		Positive Ranks	22[e]	11,50	253,00
		Ties	0[f]		
		Total	22		
	Delayed_1 - Delayed_2	Negative Ranks	0[g]	,00	,00
		Positive Ranks	20[h]	10,50	210,00
		Ties	2[i]		
		Total	22		

a. GJT_Immediate < GJT_Delayed_1
b. GJT_Immediate > GJT_Delayed_1
c. GJT_Immediate = GJT_Delayed_1
d. GJT_Immediate < GJT_Delayed_2
e. GJT_Immediate > GJT_Delayed_2
f. GJT_Immediate = GJT_Delayed_2
g. GJT_Delayed_1 < GJT_Delayed_2
h. GJT_Delayed_1 > GJT_Delayed_2
i. GJT_Delayed_1 = GJT_Delayed_2

Table 4.9. Wilcoxon Signed-Rank Post-Hoc Test for Grammaticality Judgment Post-Tests

case_no		Immediate - Delayed_1	Immediate - Delayed_2	Delayed_1 - Delayed_2
EG1	Z	-3,933[b]	-,095[c]	-4,036[c]
	Asymp. Sig. (2-tailed)	,000	,925	,000
EG2	Z	-3,638[b]	-4,121[b]	-3,932[b]
	Asymp. Sig. (2-tailed)	,000	,000	,000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

c. Based on positive ranks.

Post hoc analysis with Wilcoxon Signed-Rank tests are shown in Table 4.8 and Table 4.9 above. Bonferroni adjustments were calculated by dividing the significance level used for this study (.05) by 3 (the number of post-tests). The new significance *p* value was .05/3 = *.016*. According to the Table 4.9, there was a statistical difference between immediate post-test and delayed post-test 1 (*Z* = -3.933, p = .000) with a higher rank in immediate post-test as shown in Table 4.8, as well as between delayed post-test 1 and 2 (*Z* = -4.036, p = .000) with a higher rank in delayed post-test 1 as shown in Table 4.8 in the GJT scores of EG1, however; there were no statistically significant differences between their performances on immediate post-test and delayed post-test 2 (*Z* = -095, p = .925).

There were statistically significant differences between immediate post-test and delayed post-test 1 (*Z* = -3.638, p = .000) in GJT scores of EG2 with a higher rank in immediate post-test as in the case of EG1. There were statistically significant differences between delayed post-test 1 and 2 (*Z* = -3.932, p = .000) as well in the GJT scores of EG2 with a higher score in delayed post-test 1. However, unlike EG1, there were statistically significant differences between immediate post-test and delayed post-test 2 scores of EG2 (*Z* = -4.121, p = .000) with a better performance on immediate post-test.

The first half of the second research question regarding the durable effects of PI on the interpretation of the NAI constructions was examined so far. Friedman test

showed statistically significant differences between immediate and delayed-post tests for experimental groups except for the non-significant difference shown by Wilcoxon Signed Rank post hoc tests between the performances of EG1 on the interpretation of the immediate post-test and delayed post-test 2.

Following the tests for finding out the PI treatment effects and its durability over time, first part of the last research question concerning the re-exposure effects of PI on the interpretation of the NAI constructions was examined. Mann Whitney U test was run to compare the delayed post-test 2 scores of the re-exposure group (EG1) and PI-only treatment group (EG2).

Table 4.10. Mann Whitney U Test Ranks of Re-exposure Effects on GJT

	case_no	N	Mean Rank	Sum of Ranks
Delayed_2	EG1	22	33,50	737,00
	EG2	22	11,50	253,00
	Total	44		

The test results showed that EG1 scores of the interpretation delayed post-test 2 were statistically significantly higher than EG2 (U = .000, p = .000). The mean ranks in Table 4.10 above also indicated that EG1 who received re-exposure treatment had a higher rank (M = 33.5) in the delayed post-test 2 than EG2 who did not receive that treatment (M = 11.5).

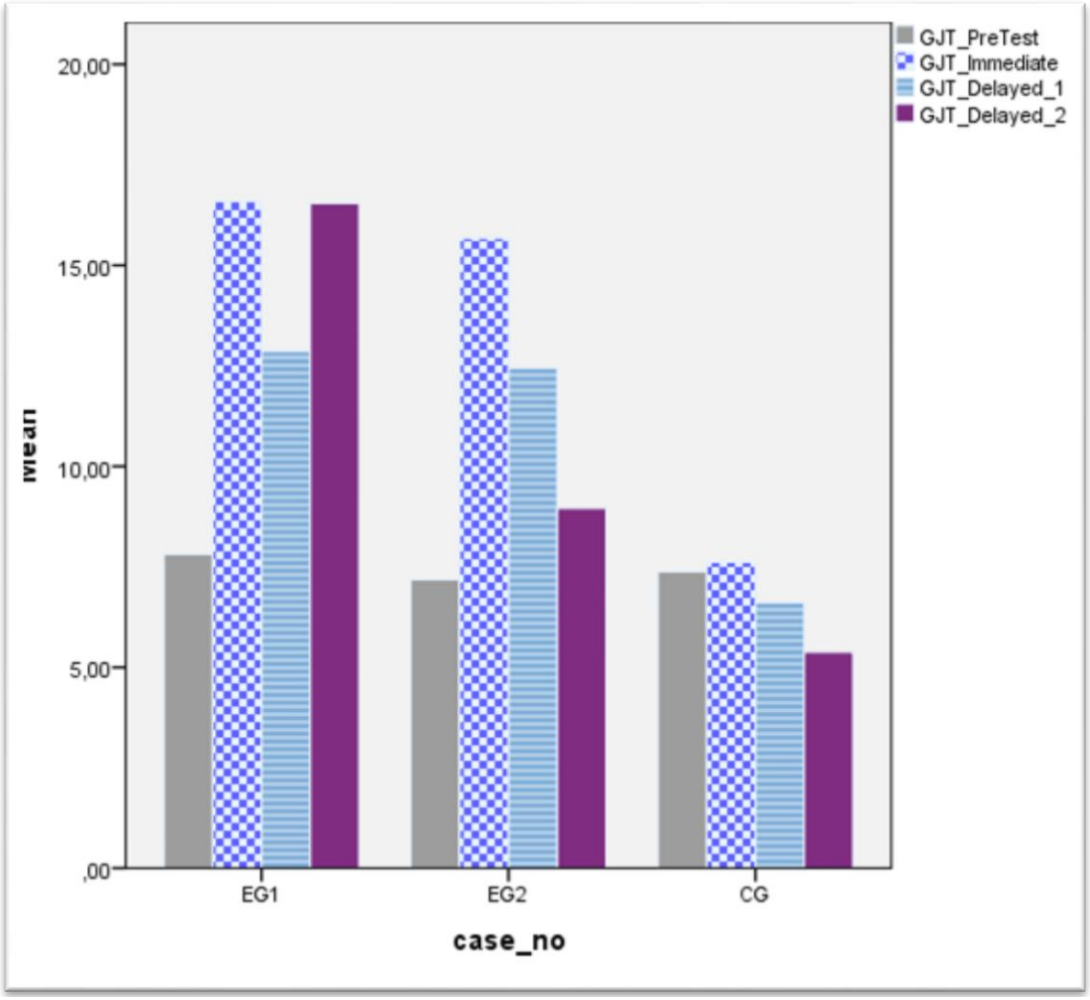

Figure 4.1. Overall groups' performances in GJT

The group performances on the interpretation tests given before and after the treatment are illustrated in Figure 4.1 above. The horizontal axis illustrates groups and the vertical axis represents the mean values of the interpretation tests. The bar in the first row indicated that the pre-test scores of all three groups were low and close to one another. The bar with dots suggested that immediate post-test scores of the experimental groups significantly increased. The performances of EG1 and EG2 decreased in the first delayed post-test given after two-weeks which was represented by the bar with stripes. As for the second delayed-posttest that was given six months later than the PI treatment, EG1 and EG2 differed from each other in their performances. Whereas EG1 improved, the scores of EG2 decreased. This result indicated that re-exposure treatment given to EG1 prior to delayed post-test 2 had positive effects on their ability to interpret the NAI constructions. CG performances, on the other hand, showed a similar performance from pre-test to immediate post-

test, and their performances decreased well below the pre-test mean ranks in the first and second delayed-post tests.

4.3.2. The Production Test (PT) Results after the Treatment

Welch test was conducted on immediate production post-test results to examine whether there were statistically significant differences among the experimental groups who received PI treatment and the control group who did not receive any treatment.

Table 4.11. Welch's F ratios for Production Post-Tests

		Statistic[a]	df1	df2	Sig.
Immediate	Welch	187,329	2	37,069	,000
Delayed_1	Welch	229,226	2	36,862	,000
Delayed_2	Welch	389,679	2	38,963	,000

a. Asymptotically F distributed.

The results revealed statistically significant differences among three groups in the immediate and delayed post-tests with the ratios of Welch's $F(2, 37.06) = 187.3$, $p < .05$ in the immediate post-test, Welch's $F(2, 36.86) = 229.2$, $p < .05$ in delayed post-test 1 and Welch's $F(2, 38.96) = 389.6$, $p < .05$ in delayed post-test 2 as shown in Table 4.11 above.

Post-hoc Games Howell test in Table 4.12 below revealed statistically significant differences between EG1 and CG as well as EG2 and CG, $p = .000$, $<.05$, in the immediate and delayed post-tests. There were no significant differences between EG1 and EG2.

Table 4.12. Games-Howell Post-Hoc Test for Production Post-Tests

Dependent Variable		(I) case_no	(J) case_no	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Immediate	Games-Howell	EG1	EG2	,00000	,91942	1,000	-2,2354	2,2354
			CG	10,84848*	,76476	,000	8,9611	12,7358
		EG2	EG1	,00000	,91942	1,000	-2,2354	2,2354
			CG	10,84848*	,68092	,000	9,1747	12,5222
		CG	EG1	-10,84848*	,76476	,000	-12,7358	-8,9611
			EG2	-10,84848*	,68092	,000	-12,5222	-9,1747
Delayed_1	Games-Howell	EG1	EG2	-,09091	,88474	,994	-2,2447	2,0629
			CG	11,22944*	,75581	,000	9,3606	13,0983
		EG2	EG1	,09091	,88474	,994	-2,0629	2,2447
			CG	11,32035*	,62247	,000	9,7912	12,8495
		CG	EG1	-11,22944*	,75581	,000	-13,0983	-9,3606
			EG2	-11,32035*	,62247	,000	-12,8495	-9,7912
Delayed_2	Games-Howell	EG1	EG2	1,18182	,62008	,150	-,3247	2,6884
			CG	11,94805*	,50377	,000	10,7142	13,1819
		EG2	EG1	-1,18182	,62008	,150	-2,6884	,3247
			CG	10,76623*	,51650	,000	9,5001	12,0324
		CG	EG1	-11,94805*	,50377	,000	-13,1819	-10,7142
			EG2	-10,76623*	,51650	,000	-12,0324	-9,5001

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

The Welch and Games-Howell post hoc tests above showed the post-tests difference between groups. Wilcoxon Signed-Rank test was used in order to find out which groups improved significantly in their ability to produce NAI constructions from pre-tests to post tests.

The Wilcoxon Signed-Rank test was run between the pre-test and immediate post-test results of each of the three groups. The production test results of these analyses are shown in Table 4.13 below.

Table 4.13. Within-Group Wilcoxon Signed-Rank Test Results for PT

case_no			N	Mean Rank	Sum of Ranks
EG1	Immediate - PreTest	Negative Ranks	0[a]	,00	,00
		Positive Ranks	22[b]	11,50	253,00
		Ties	0[c]		
		Total	22		
EG2	Immediate - PreTest	Negative Ranks	0[a]	,00	,00
		Positive Ranks	22[b]	11,50	253,00
		Ties	0[c]		
		Total	22		
CG	Immediate - PreTest	Negative Ranks	0[a]	,00	,00
		Positive Ranks	1[b]	1,00	1,00
		Ties	20[c]		
		Total	21		

a. PT_Immediate < PT_PreTest

b. PT_Immediate > PT_PreTest

c. PT_Immediate = PT_PreTest

As shown in Table 4.13 above, both EG1 and EG2 significantly improved their performances from pre-test to post-test. The Wilcoxon Signed-Rank test indicated that immediate post-test results of EG1 and EG2 were statistically significantly higher than pre-test scores with the following values respectively, (Z = -4.126, p = .000) and (Z = -4.130, p = .000).

Table 4.14. Descriptive Statistics Within-Group Wilcoxon Signed-Rank Test for PT

case_no		N	Mean	Std. Deviation	Minimum	Maximum	Percentiles 25th	50th (Median)	75th
EG1	PreTest	22	7,6364	1,46533	6,00	10,00	6,0000	8,0000	8,0000
	Immediate	22	18,1818	3,26068	14,00	24,00	16,0000	18,0000	20,5000
EG2	PreTest	22	6,9091	1,34196	4,00	10,00	6,0000	6,0000	8,0000
	Immediate	22	18,1818	2,82230	10,00	22,00	16,0000	18,0000	20,0000
CG	PreTest	21	7,2381	1,33809	6,00	10,00	6,0000	8,0000	8,0000
	Immediate	21	7,3333	1,46059	6,00	10,00	6,0000	8,0000	8,0000

The PT means in Table 4.14 above also showed that while the ratings of EG1 improved from M = 7.6 to M = 18.1 and EG2 from M = 6.9 to M = 18.1 after the treatment, the mean values of CG who did not receive treatment did not show any improvement at all in the immediate post-test.

The other half of the first research question in the study attempted to examine the possible effects of the PI treatment on the production of NAI constructions. For the aim of finding out PI treatment effects, Welch test and Games Howell post hoc test as well as within-group Wilcoxon Signed-Rank test were used. The between group Welch test and Games Howell post-hoc tests showed that immediate and delayed post-tests results of EG1 and EG2 were significantly higher than the CG. This result suggested that PI treatment had positive effects on the production of NAI constructions. There were also significant differences between pre-test scores and immediate post-test scores of the experimental groups which was found by using within-group Wilcoxon Signed-Rank test.

For testing the time effects of PI treatment, Friedman test was run on the raw scores of the immediate and two delayed production post-tests of experimental groups. The descriptive statistics for each of the time points for post-tests results are presented in Table 4.15 below. The means for all tests of both groups are close to one another.

Table 4.15. Descriptive Statistics Friedman Test for Production Post-Tests

case_no		N	Mean	Std. Deviation	Minimum	Maximum
EG1	Immediate	22	18,1818	3,26068	14,00	24,00
	Delayed_1	22	18,1818	3,26068	14,00	24,00
	Delayed_2	22	19,0909	2,02153	16,00	22,00
EG2	Immediate	22	18,1818	2,82230	10,00	22,00
	Delayed_1	22	18,2727	2,56685	12,00	22,00
	Delayed_2	22	17,9091	2,09100	12,00	20,00

According to Friedman test, there was a statistically significant difference between immediate and delayed production post tests for EG1, X^2 (2) = 8.909, p = .012. As for EG2, the *p*-value is close to *.05*, X^2 (2) = 5.200, p = .074.

Wilcoxon Signed Rank was used as a post-hoc test in order to find out the differences. Bonferroni adjustments were used on the results for multiple comparisons. The significance level (.05) was divided by the number of post-tests (3) for the Bonferroni calculation and the new *p* value was .05/3= *.016*. The post hoc ranks and test results are displayed in Table 4.16 and Table 4.17 below.

Table 4.16. Wilcoxon Signed-Rank Post-Hoc Ranks for Production Post-Tests

case_no			N	Mean Rank	Sum of Ranks
EG1	Immediate - Delayed_1	Negative Ranks	0[a]	,00	,00
		Positive Ranks	0[b]	,00	,00
		Ties	22[c]		
		Total	22		
	Immediate - Delayed_2	Negative Ranks	9[d]	6,33	57,00
		Positive Ranks	2[e]	4,50	9,00
		Ties	11[f]		
		Total	22		
	Delayed_1 - Delayed_2	Negative Ranks	9[g]	6,33	57,00

Table 4.16 (Cont'd)

		Positive Ranks	2[h]	4,50	9,00
		Ties	11[i]		
		Total	22		
EG2	Immediate - Delayed_1	Negative Ranks	1[a]	1,00	1,00
		Positive Ranks	0[b]	,00	,00
		Ties	21[c]		
		Total	22		
	Immediate - Delayed_2	Negative Ranks	1[d]	3,00	3,00
		Positive Ranks	4[e]	3,00	12,00
		Ties	17[f]		
		Total	22		
	Delayed_1 - Delayed_2	Negative Ranks	0[g]	,00	,00
		Positive Ranks	4[h]	2,50	10,00
		Ties	18[i]		
		Total	22		

a. PT_Immediate < PT_Delayed_1

b. PT_Immediate > PT_Delayed_1

c. PT_Immediate = PT_Delayed_1

d. PT_Immediate < PT_Delayed_2

e. PT_Immediate > PT_Delayed_2

f. PT_Immediate = PT_Delayed_2

g. PT_Delayed_1 < PT_Delayed_2

h. PT_Delayed_1 > PT_Delayed_2

i. PT_Delayed_1 = PT_Delayed_2

Table 4.17. Wilcoxon Signed-Rank Post-Hoc Test for Production Post-Tests

case_no		Immediate - Delayed_1	Immediate - Delayed_2	Delayed_1 - Delayed_2
EG1	Z	,000[b]	-2,233[c]	-2,233[c]
	Asymp. Sig. (2-tailed)	1,000	,026	,026
EG2	Z	-1,000[c]	-1,342[d]	-2,000[d]
	Asymp. Sig. (2-tailed)	,317	,180	,046

a. Wilcoxon Signed Ranks Test

Table 4.17 (Cont'd)

b. The sum of negative ranks equals the sum of positive ranks.

c. Based on positive ranks.

d. Based on negative ranks.

According to Table 4.17 above, there was not a significant difference between immediate post-test and delayed post-test 1 in the PT scores of EG1 (Z = .000, p = 1.000); however, the p values of immediate and delayed post-test 2 (p = .026) as well as delayed post-test 1 and 2 (p = .026) were equal and close to new p value after Bonferroni adjustments (*.016).* As shown in Table 4.16, almost half of the participants in EG1 (N = 9) did better in the delayed post-test 2 than the immediate post-test and delayed post-test 1.

In order to find out the re-exposure effects of PI, the delayed post-test 2 scores of the re-exposure group (EG1) and the scores of PI only treatment group (EG2) were compared using Mann Whitney U test.

Table 4.18. Mann Whitney U Test Ranks of Re-exposure Effects on PT

	case_no	N	Mean Rank	Sum of Ranks
Delayed_2	EG1	22	25,43	559,50
	EG2	22	19,57	430,50
	Total	44		

The Mann Whitney U Test statistics showed that there was not a statistically significant difference between EG1 and EG2 in terms of their performances on delayed production post-test 2 (U = 177.5, p = .114). On the other hand, the mean ranks of the two groups as shown in Table 4.18 above suggest that EG1 (M = 25.4) showed a better performance than EG2 (M = 19.5).

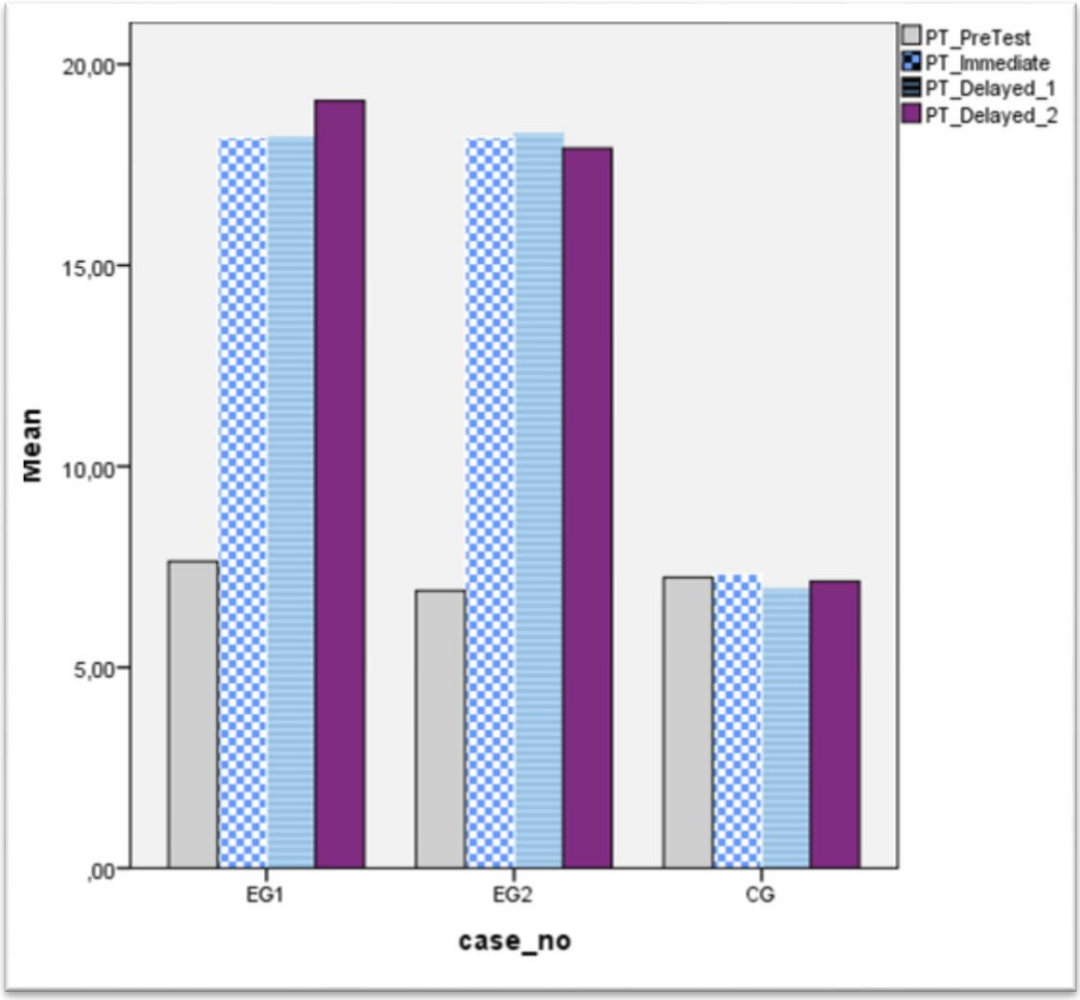

Figure 4.2. Overall groups' performances in PT

Figure 4.2 above displays group performances on the production tests given before and after the treatment. The horizontal axis illustrates groups and the vertical axis represents the mean values of the production tests. The bar in the first row indicated that the pre-test scores of all three groups were low and close to one another. The bar with dots suggested that immediate post-test scores of the experimental groups significantly increased to the same level. They were able to maintain their gains in the first delayed post-test given after two-weeks which was represented by the bar with stripes. As for the second delayed-posttest that was given six months later than the PI treatment, EG1 showed a better performance than EG2. This result indicated that re-exposure treatment given to EG1 prior to delayed-post-test 2 had some positive effects on their ability to produce the NAI constructions. CG performances, on the other hand, showed similar performances on the pre-test, immediate post-test, and the delayed-post tests.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1. Presentation

The present study attempted to examine the short and long-term effects of PI and to measure its re-exposure effects. It aimed to find out whether and to what extent PI was effective on the acquisition of English NAI constructions by Turkish learners of English. The study also tried to reveal whether the re-exposure treatment would improve acquisition of the intended linguistic item. The following research questions were addressed for the purposes of this study:

1. Can PI positively affect the interpretation and production of English Negative Adverbials of Inversion?
2. Can PI help learners maintain their gains in the long run?
3. Will learners receiving re-exposure to the PI treatment get better than the PI only group in interpreting and producing English Negative Adverbials of Inversion?

This chapter begins with the discussion of the results of the study in relation to the research questions mentioned above. It continues with the limitations and suggestions for further studies. Then, the summary of the study is provided. It is followed by pedagogical implications of the study and ends with overall conclusions.

5.2. Discussion of the Results in Relation to the Research Questions

Research Question 1: Can PI positively affect the interpretation and production of English Negative Adverbials of Inversion?

The sentence-level interpretation and production test results showed that PI had a positive effect on the acquisition of NAI constructions. Both of the experimental groups who received PI treatment did equally well on the tests. Their test scores

significantly outperformed the CG who did not receive PI treatment. The findings indicated that PI treatment had a facilitative effect on learners' ability to interpret and produce the sentence-level NAI constructions.

These results that showed the positive effects of PI were consistent with the results in the previous PI studies which compared PI to TI, MOI, and communicative output instruction in order to investigate the effectiveness of PI treatment. The results of these studies showed overall superior effects of PI over other types of instructions (e.g., Benati, 2001, 2005; Cadierno, 1995; Cheng, 2002; Farley, 2001a, 2004; VanPatten & Cadierno, 1993b). Although the current study did not compare PI to other output-based instructions, the comparison of the test results of the PI groups to the non-intervention group indicated that PI treatment had a facilitative effect on the acquisition of the target item.

The results of the study also supported the results of the PI studies (Hikima 2011; Benati, 2015) in which the effects of PI were tested through the comparison of the performances of PI and PI re-exposure group with the CG as in the current study. In these studies, Hikima (2011) and Benati (2015) compared the effects of PI and PI re-exposure on the acquisition of Japanese passive forms by sentence and discourse level tasks. They both found that the PI groups improved in the sentence-level interpretation and production tasks as well as discourse-level interpretation tasks. This can mean that learners with different language backgrounds can acquire various language structures through PI intervention.

The results of some other studies revealed that participants had equal gains both from PI and meaningful output and communicative output-based instructions on the interpretation tests; however, the effects of output-based instructions were superior for their production ability (Birjandi, Maftoon, & Rahemi, 2011; Morgan-Short & Bowden, 2006; Toth, 2006). In the current study, however, performances on both interpretation and production tests were equally well with a slightly better performance in the production test. Although PI is an input-based type of instruction and the learners were not asked to produce the target item during the treatment, PI groups' improvement in the production ability compared to the CG is an important contribution of the PI treatment. This evidence suggests that PI had affected the

processing mechanisms in the input before it became an intake which would affect the developing system and then the output.

The results of the current and the early PI studies suggested that PI treatment can help learners to make form-meaning connections. In this way, learners can attend to both meaning and language forms/structures in the initial process of SLA. Teaching language forms and structures through PI can help learners process them correctly during comprehension. The PI studies so far showed that PI intervention improved the performances of beginner and intermediate level learners on the acquisition of various language forms and structures. This study added new empirical evidence suggesting that PI can also be effective in improving advanced level learners' performances on the acquisition of more complex language structures (such as NAI constructions).

Research Question 2: Can PI help learners maintain their gains in the long run?

The results of the delayed post-tests which were performed two-weeks and six-month intervals after the first PI treatment revealed that PI did not have durable effects on learners' interpretation of the NAI constructions. The performances of EG1 on the interpretation tests decreased significantly from immediate post-test to the first delayed post-test as well as from first delayed post-test to the second. However, it reached to the same mean ranks of immediate post-test in the delayed post-test 2 most probably due to re-exposure treatment effects which will be discussed as part of the third hypothesis of the study below. EG2 showed similar performances with EG1. The only difference was the lower mean ranks of delayed post-test 2 compared to the immediate post-test. As for the production test results, PI showed a long-term effect on the production ability of the learners. Both experimental groups maintained their gains on their ability to produce the sentence-level NAI constructions.

The tests used in measuring the effects of PI in previous research were conducted as immediate post-tests to measure short-term effects of PI. Limited number of studies attempted to measure the long-term effects (e.g., Benati, 2001; Birjandi & Rahemi, 2009; Birjandi, Maftoon, & Rahemi, 2011; Cadierno, 1995; Farley, 2001a, 2001b; Morgan-Short & Bowden, 2006; Qin, 2008; Toth, 2006; VanPatten & Cadierno,

1993b). These studies used follow-up tests ranging from one week to four weeks after the treatment. Most of these researchers found that the PI effects endured up to four weeks with some minor decreases and several others found significant decreases in the production test performances. The results of the current study did not support the previous study results because there was a significant decrease in the interpretation test scores of the learners in the first delayed post-test which was conducted two weeks after the treatment. Unlike the previous findings, the learners in the study maintained their gains in the production tests. Although it has been shown in previous studies as well as in the current study that PI is beneficial for learners' acquisition of different linguistic forms and structures, the results indicate that the overall effectiveness of PI can decrease in time.

Only a couple of studies tested durative effects of PI by using delayed post-tests more than four weeks later than the treatment (e.g. VanPatten & Fernandez, 2004; VanPatten, Inclezan, Salazar & Farley, 2009). These studies showed different results. Whereas VanPatten and Fernandez (2004) found that PI had long-lasting effects (up to eight months), VanPatten *et al*. (2009) showed in their study a decline in learners' performances six weeks after the PI treatment. The present study supported the results of VanPatten *et al*. (2009) partly by showing that PI effects on learners' ability to interpret sentence-level NAI constructions were not durable even when the delayed post-tests were administered six months after the PI treatment. The reason for the diminishing effects of PI over time on learners' ability to interpret NAI constructions could be the short duration of the PI treatment. Four consecutive class hours of instruction and SI activities were provided to the experimental groups and this can explain the decreasing GJT scores of the learners over time. The significantly increased scores of EG1 from immediate post-test to the delayed post-test 2 after they received one-hour re-exposure instruction also supported the tentative conclusion that the prolonged or multiple instructions can help PI effects maintain over time.

Contrary to GJT results, the PT results showed that the learners were able to maintain their gains in the long run. Although PI is an input-based theory and the learners were not asked to produce the target item during the treatment, previous and current research showed that it had positive effects not only on the interpretation but also on

the production ability of the learners. On the other hand, their performances on both interpretation and production tests were shown to diminish after three weeks. As GJT and PT were given to the learners in a different sequence in the present study with the aim of controlling test learning effects, transfer of information from GJT to PT seems unlikely. The PT used in the study might have been easier to remember compared to the GJT. It was composed of 24 sentences half of which were target items while GJT involved 40 items 12 of which were target items. In addition, the tasks in the PT were rewriting and dialogue completion which required learners to re-read the sentences spending more time on the tasks going back and forth through the sentences. This might have helped them remember the tasks and the sentences containing target items. Another possible explanation for the durable effects of PI on the production test compared to GJT could be the effect of "transfer–appropriate processing" (Shintani, 2015). GJT is a special type of testing instrument itself with specific design rules, and some participants may not have been familiar with it. On the other hand, the tasks in PT could show more similarities with the SI activities involved in the PI treatment. Therefore, it is possible that participants might have transferred their experiences in these activities to the PT.

The current study and limited number of longitudinal PI study results showed that learners can maintain their gains through PI in the long run with some decreases in their performances. The decrease can not only be observed in learners' production ability as shown by most of the previous PI studies but also in their interpretation ability as revealed by VanPatten *et al*. (2009) and the current study. The studies used different types of interpretation (e.g. picture matching, multiple choice, GJT) and production tests (e.g. complete the sentences, a gap-fill test, oral production) for measuring the effects of PI. The researchers either developed their own tests for the purposes of their own study or used the previous test items prepared by the researchers. Then, the type of measurement tests can affect the durability of PI. The familiarity of the learners with the activities and the test types used in the study can help the learners maintain their gains the long run.

Research Question 3: Will learners receiving re-exposure to the PI treatment get better than the PI only group in interpreting and producing English Negative Adverbials of Inversion?

The results for the interpretation and production test showed that learners receiving re-exposure to the PI treatment got better than the PI-only group in interpreting and producing English NAI constructions. The increased performances of EG1 on GJT and PT after re-exposure compared to EG2 who did not receive re-exposure indicated that re-exposure to the PI treatment between the first and second delayed post-test helped EG1 improve in their ability to interpret and produce sentences containing NAI constructions.

The re-exposure effects in L2 teaching have been studied by few researchers (e.g. Leow, 1998) and these effects were tested through PI in a comparatively recent study of Hikima (2011) and Benati (2015). The positive results of the re-exposure effects were consistent with the results of these previous studies. Hikima (2011) and Benati (2015) examined the re-exposure effects of PI on Japanese passive construction which was based on the *First Noun Principle* of the IP theory. The current study, on the other hand, tested the re-exposure effects of PI on English NAI constructions based on the *Primacy of Meaning Principle*. The findings of these studies indicated that repeated exposure to PI can help learners further improve in their ability to interpret and produce the target items that are affected by different IP principles.

Benati and Lee (2008) proposed *The Strengthening Hypothesis* which suggested that "second language learners who receive multiple PI treatments that address the same processing principles will increasingly strengthen their use of the more optimal processing strategy until it becomes their default strategy for processing second language input (p.173)." The increased interpretation ability of the learners after the re-exposure treatment in the current study supported the proposed idea that repeated treatments can help strengthen their processing strategies. Andersen (2015) also noted that repeated practice can aid memory strength. In this respect, re-exposure to PI can affect the learners' processing of the input relatively permanently. Therefore, re-exposure to PI can reinforce learning.

5.3. Limitations and Suggestions for Further Studies

As a great deal of SLA studies are empirical (Gass and Selinker, 2008), researchers should be able to make use of the general conclusions drawn from such studies for replication. Drawing general conclusions from SLA studies could be possible to the extent that detailed information about the participants, setting, instruments and data collection procedure could be provided. Apart from comprehensive information about the methodology of the study, the researcher should also notify the other researchers of the limitations of the study they conducted. In this way, the researchers would not only be able to somewhat replicate the study but also extend the scope of their studies in order to contribute to the SLA field. Therefore, the limitations of the current study along with some suggestions are provided in this section to pave the way particularly for the prospective SLA researchers who would replicate the study.

The first limitation of the study was the small number of participants. The total number of participants was 65 and they were randomly assigned to two experimental and one control group. Therefore, the number of the participants in each group was not equal (i.e. EG1: 22, EG2: 22, CG: 21) and this may have been one of the reasons for the violations in the parametric tests. Having a large sample size would help to resolve a potential statistical violation problem and would also affect the generalizability of the results.

Second, the PT used for measurement did not include oral production data. The reason for the lack of oral production data was the linguistic item of the study. Learners would possibly use the negative adverbials in the regular SVO order rather than the inverted form (i.e. the possibility of avoidance), so it would be hard to design and execute controlled output tests. The participants in the current study improved in their ability to produce NAI constructions in the written production test and the effects were durable. Future research can examine the effects of PI through controlled oral tasks along with the written production tasks so that measurement of overall production ability of the learners would be more substantial.

Another limitation of the study was that only one linguistic item was tested because of the time constraints. As the NAI constructions had not been studied before, it took long time and effort to design tests, as well as to develop PI treatment materials and pilot them. Therefore, the results of the study were interpreted regarding the performances of learners on a single topic. Further studies can test PI on multiple topics which share same processing problems of PI (i.e. *Primacy of Meaning Principle* or *First Noun Principle*) in order to compare the results. Testing multiple topics would also increase the validity of the study.

Lastly, the PI treatment and the SI activities in the present study took four class-hours. Although the immediate post-test results showed the positive effects of PI, the effects were decreased on the interpretation ability of the learners in the first delayed post-test that were given to the learners two weeks after the treatment. Future researchers can spend longer hours on the PI treatment to check whether it would have an effect on durability.

5.4. Implications

The PI and SI activities provided in the study were developed based on three IP theory principles: *Primacy of Meaning Principle* and its sub-principles *The Preference for Non-Redundancy* and *Sentence Location Principle*. According to *Primacy of Meaning Principle*, learners process input for meaning before they process it for form. The PI treatment aimed to intervene in the input by giving information about the English NAI constructions as well as about processing strategies based on this principle. The instruction was followed by the input-based activities for learners to process the form while they process meaning.

As *Preference for Non-Redundancy Principle* suggests, learners are more likely to process non-redundant meaningful grammatical forms before they process redundant meaningful forms. In this respect, the learners' attention was drawn to inversion through PI and SI activities which is redundant for learners compared to the negative adverbs in the sentences.

The Sentence Location Principle suggests that learners tend to process items in sentence-initial position before those in final position and those in medial position. The learners were expected to process the negative adverbials in embedded inversions which were in the initial position before other elements in the sentences. In this case, as the learners process input for meaning primarily, they would process the negative element in the sentence initially and would be able to infer that the sentence had a negative meaning. On the other hand, they would not notice that the sentence should follow the ASV order when the negative adverbials are placed in the initial position. The PI treatment provided was designed in a way that would help the learners process the form correctly. The positive effects of PI in the study indicate that it may be possible to get students to attend both to form and meaning to make form-meaning connections while teaching grammar.

PI can be helpful particularly when teaching a second language grammar in contexts where the L1 (e.g. Turkish) and the target language (e.g. English) are incongruent languages. Whereas English is a subject-prominent language, Turkish is a topic-prominent language. Although Turkish language word order is relatively flexible and allows scrambling of the words, it does not have V2. Then, the learners in the study were most probably notable to transfer their knowledge of their mother tongue to the target language forms of NAI constructions. Teachers can help learners overcome this potential obstruction by intervening at the input level adopting PI approach. According to UG accounts for SLA, there is no or little need for instruction; however, the language elements that would be governed only by UG would be limited (Doughty, 2005), so it is required that learners attend to form through instruction (Ellis, 2005). Furthermore, learners may not notice some forms and even if they do, not all the attended input would become an intake (VanPatten, 1996). Teachers can alter the way learners attend to input through explicit teaching of the linguistic item based on cognitive processing strategies which is followed by SI activities as opposed to traditional output-based tasks that have been carried out widely in EFL contexts such as Turkey.

The positive effects of re-exposure showed that PI can be more effective if it is supported with repeated instruction. Learners can remember the linguistic items by being exposed to the treatment multiple times and strengthen their knowledge. It is

important to increase the amount of exposure in the language classroom and this study showed that repeated exposure to the PI at different intervals can enhance learning. Teachers can be trained to use PI in their classrooms and encouraged to give the PI treatment on the grammar topics that address the same processing strategies.

The effectiveness of PI has been shown on the acquisition of various language forms or structures by learners who were either beginner or intermediate proficiency level. This study made an important contribution to the PI literature by showing that advanced level learners can also process a rare and complex linguistic structure and produce it correctly through PI and SI activities.

More specifically, the treatment and re-exposure effects revealed that PI can be particularly useful in contexts where the target language is mainly taught through traditional output-based instructions. The participants of the current study were senior students in an ELT program who were motivated to be teachers; however, they were taught grammar topics deductively through PPP (Presentation, Practice, and Production) approach so far. Therefore, PI was a new method for these learners through which they experienced a different type of learning. The study indicated that an input-based model of teaching was applicable and useful for learners who have high command of the target language and receive comprehensive theoretical and practical knowledge about ELT. The participants of the study were expected to be competent enough both for themselves and their prospective students. In this respect, language teacher education policy makers and professors should take into account PI and its re-exposure effects on teaching grammar particularly the grammar topics that require intensive teaching (e.g. NAI constructions) to facilitate the learning process.

5.5. Summary of the Study

The study aimed to find out whether PI as a pedagogical intervention which is based on an input-based theory called IP would be effective on the acquisition of English NAI constructions by advanced English proficiency level prospective teachers of English. It was particularly interested in its durable effects which were tested through delayed post-tests at two different time intervals (two weeks and six months after the

treatment). It also utilized a re-exposure treatment to PI in order to identify whether repeated exposure could help the learners improve in their ability to interpret and produce sentences containing NAI constructions. Table 5.1 below shows the overview of the study:

Table 5.1. Overview of the Study

Research Questions	**Participants**	**Data Collection Tools**	**Rationale**
1. Can PI positively affect the interpretation and production of English NAI?	PI only Group (EG1) and PI re-exposure Group (EG2) received 4 hours of PI treatment. No treatment was given to CG.	GJT and PT were given immediately after the PI	. to test the effectiveness of PI on sentence-level interpretation and production tasks
2. Can PI help maintain their gains in the long run?	EG1, EG2, CG	GJT and PT were given as first delayed post-test 2 weeks after and second delayed post-test 6 months after the PI	. to test whether PI had durative effects
3. Will learners receiving re-exposure to the PI treatment get better than the PI only group in interpreting and producing English NAI?	EG2 received re-exposure treatment to PI 1 month after the first PI	GJT and PT scores of EG1 and EG2 were compared in the delayed post-test 2 which was conducted 6 months after the first PI	. to test whether re-exposure to PI could help learners improve in their interpretation and production abilities.

The findings of the first research question revealed that PI was effective in the acquisition of English NAI constructions by advanced level English learners. This finding implies that PI can be used as an effective pedagogical tool in teaching grammar. The results of the second research question showed the durability of the PI on the production tasks. Therefore, learners were able to maintain their ability to produce the target item up to six months. Although their interpretation test scores decreased in two weeks' time, the results of the third research question indicated that

they were able to increase their interpretation test scores to the initial level with the help of the re-exposure to the PI. In this respect, these results showed that while PI has durable effects, re-exposure to the PI helps learners improve their performances.

5.6. Conclusion

The present study aimed to test the effects of PI on the interpretation and production of English NAI constructions in short and long terms. It also examined the re-exposure effects of PI on learners' ability to interpret and produce the NAI constructions.

The results of the study confirmed previous PI research literature by demonstrating that learners were able to improve in their ability to interpret and produce sentence-level constructions after they received PI treatment. PI as an input-based approach to grammar teaching can facilitate learning by manipulating the underlying processing strategies that help learners make form-meaning connections though the durability issue needs to be addressed in detail.

The results showed that PI is also effective in comprehending and producing English NAI constructions that were tested first time in the PI literature. In addition, the study provided new empirical data to PI research by involving advanced proficiency level English language learners. The positive effects of PI on these learners' linguistic improvement demonstrated that PI can also be a useful approach in teaching grammar to higher level learners, so the results contributed to the SLA and language teaching field.

The study further examined the re-exposure effects of PI which is a comparatively new paradigm in PI research and showed that learners can improve in their ability to interpret the target linguistic item when they are exposed to the PI multiple times.

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APPENDICES

Appendix A: Background Questionnaire

STUDENT QUESTIONNAIRE

Dear Students,

This questionnaire is a part of a project that aims to find out whether English as a Foreign Language learners improve their ability to interpret and produce the target item in the study. It is hoped that the results of this project will enable teachers to use different types of grammar teaching in their classrooms. Therefore, I would be grateful if you could answer all of the questions in Section A and B listed below.

The data collected through this questionnaire will be used only for research purposes and your answers will in no way affect your academic success.

For further information related to the project, please feel free to contact me at yburcin@metu.edu.tr

Thank you for your cooperation!

Burçin YAPICI

Research Assistant

Dept. of Foreign Language Education

Faculty of Education

METU

SECTION A

A) PERSONAL INFORMATION

1. Name: _____

2. Age: _____

3. Gender: □ F□ M

4. E-mail Address: _____

5. Native language: □ Turkish□ English

Other: _____

6. Please write the results that you took from the English proficiency exams listed below along with the dates the exams that were held.

English Proficiency Exams	**Your Results**	**Exam Date**
TOEFL		
IELTS		
Other(s):		

B) LANGUAGE BACKGROUND

7. Which language(s) have you learned? (**including your first language**, in order of acquisition)			
Language	From which age on?	For how long?	Context of acquisition (You can select more than one choices)
1.			(a) At home?
			(b) At high school?
			(c) At university?
			(d) At a language institution?
			(e) At a private tutoring?
			(f) In another country?
			Through virtual media such as;
			(g) online courses
			(h) videos
			(i) social media
			Context(s) other than above (please specify):

Cont’d

2.			(a) At home?	
			(b) At high school?	
			(c) At university?	
			(d) At a language institution?	
			(e) At a private tutoring?	
			(f) In another country?	
			Through virtual media such as;	
			(g) online courses	
			(h) videos	
			(i) social media	
			Context(s) other than above (please specify):	

Cont’d

3.			(a) At home?	
			(b) At high school?	
			(c) At university?	
			(d) At a language institution?	
			(e) At a private tutoring?	
			(f) In another country?	
			Through virtual media such as;	
			(g) online courses	
			(h) videos	
			(i) social media	
			Context(s) other than above (please specify):	

Cont’d

4.			(a) At home?	
			(b) At high school?	
			(c) At university?	
			(d) At a language institution?	
			(e) At a private tutoring?	
			(f) In another country?	
			Through virtual media such as;	
			(g) online courses	
			(h) videos	
			(i) social media	
			Context(s) other than above (please specify):	

Cont'd

5.			(a) At home?	
			(b) At high school?	
			(c) At university?	
			(d) At a language institution?	
			(e) At a private tutoring?	
			(f) In another country?	
			Through virtual media such as;	
			(g) online courses	
			(h) videos	
			(i) social media	
			Context(s) other than above (please specify):	

8. Have you ever lived abroad? □ YES □ NO

9. If YES,

9.1 Where? _____

9.2 For how long? (Please write the time)

_____

C) USE OF LANGUAGE

10. What is your **percentage** of current language use **per week**?

Please write the names of the languages you use in your everyday life. Then, indicate the average percentages of the languages that you use for each situation or activity given below. **(Please start with your native language!)**

In which language(s) do you communicate	Language	Language	Language	Language	Language .....
A) Informal Situations					
.with your partner/boyfriend/ girlfriend					
.with your parents					
.with your extended family					
.with your friends					
B) At Studies/Work					
.with your workfellows					
.with your classmates					
.with your lecturers					
.during classwork/group work					
C) In which language(s) do you watch					
.TV					
.videos					
.videogames					

D) In which language(s) do you					
.chat on the internet					
.write e-mails					
.play computer games					
E) In which language(s) do you listen to					
.radio					
.music					
F) In which language(s) do you read					
.books					
.newspapers					
.articles					

SECTION B: KNOWLEDGE ABOUT THE SELECTED TOPIC

Do you know the grammar topic in the following table? Please put a tick (√) if you know the form, meaning or use of the related topic. Also put either a tick (√) in 'YES' column if you have ever been taught about the topic explicitly or put (X) in 'NO' column if not. If you marked 'YES', please also indicate the context in which you have been taught about the topic. You can select more than one option.

TOPIC	FORM	MEANING	USE	EXPLICITLY TAUGHT?		IF YES,	
				YES	NO		
Inversions (e.g., ***Rarely did I think*** *about my past life. /****Never have I given up*** *following her.*)						(a) At home?	
						(b) At high school?	
						(c) At university ?	
						(d) At a language institution ?	
						(e) At a private tutoring?	
						(f) In another country?	
						Through virtual media such as;	
						(g) online courses	
						(h) videos	
						(i) social media	

Cont’d

						Contexts other than above (please specify):

Appendix B: Explicit Instruction on Negative Adverbials

TOPIC: NEGATIVE ADVERBIALS OF INVERSION

SECTION A

INSTRUCTION

DURATION: 30 MIN.

There are words and phrases in English that function as adverbials that sometimes require an inversion. Inversion is used with a certain aim, and that aim is **often emphasis**. Sentences with inversion sound **more formal or more literary** and sentences like this are less common in ordinary conversation.

In Table 1 you can see the negative adverbials after which the inversion is obligatory when these adverbials are found in sentence initial position.

Table 1

Negative Adverbials of Inversion

N	**NEGATIVE ADVERBIALS**
1.	At no time
2.	Hardly (ever)
3.	In no case
4.	In no way
5.	Never
6.	No longer
7.	Not even once
8.	On no account
9.	Rarely

Cont'd

10.	Scarcely
11.	Seldom
12.	Under no circumstances

When a negative adverb is in the initial position, **the auxiliary of the verb is moved** in front of the subject. Look at the following examples:

Never **has she** visited my country.

Seldom **is Mary** late for work.

In no way **can Jane** stay at home alone at night.

On no account **should the parents** abandon their children.

PLEASE KEEP IN MIND THE FOLLOWING POINTS:

SECTION B

Table 2

Inversion Principles

N	RULES	EXAMPLES
1.	If there is not a progressive auxiliary **to be**, the perfective auxiliary **to have** or any of the modals (e.g., **can, should**), then the dummy auxiliary DO should be added to the main sentence when inverted after a negative adverbial.	**1a.** *My cousin seldom plays football with his friends* (positive sentence) **1b.** *Seldom **DOES** my cousin play football with his friends* (inversion with a negative adverbial) **1c.** *He hardly ever ate meat in his childhood*(positive sentence) **1d.** Hardly ever did he eat meat in his childhood (inversion with a negative adverbial)
2.	The rule of inversion after negative adverbials is also valid in embedded clauses (i.e., if there is a negative adverbial at the beginning of the embedded clause then the subject and the auxiliary change places).	**2a.** *The actress will no longer act in a TV show* (positive sentence) **2b.** *No longer will the actress act in a TV show* (main sentence with inversion because of a negative adverbial) **2c.** *The actress says that no longer will she act in a TV show*(embedded sentence with inversion because of a negative adverbial)

Cont'd

3. When a negative adverbial is added to the main or embedded clauses there is no need to add NOT to the inverted clause.	**3a.** *Daniel rarely cooks at home* (positive sentence) **3b.** *Rarely does Daniel cook at home* (main sentence with inversion because of a negative adverbial) **3c.** **Rarely does NOT Daniel cook at home* (Ungrammatical sentence with inversion and added NOT) **3d.** *Daniel thinks that rarely should he cook at home* (embedded sentence with inversion because of a negative adverbial) **3e.** *Daniel thinks that rarely should NOT he cook at home* (Ungrammatical embedded sentence with inversion and added NOT)
4. Not all frequency adverbials require inversion when used at the beginning of a clause. *Always, frequently, sometimes, usually* are some of the frequency adverbials which do not require inversion.	**4a.** *My sister **usually/sometimes** plays the piano after school.* **4b.** ***Usually/Sometimes**, my sister plays the piano after school.*

Appendix C: Structured Input Activities- Student Handout

ACTIVITIES

ACTIVITY 1

The survey below shows how often five friends **Joe, Marco, Alice, Helen and Tiffany** do some daily activities. Examine the chart and write down the name of the person who does the activity in the following statements.

	Joe	**Marco**	**Alice**	**Helen**	**Tiffany**
Wake up at 7 a.m.	Under no circumstances	Seldom	Rarely	Frequently	Generally
Have breakfast	Usually	Rarely	Never	Always	Frequently
Have lunch	Rarely	Generally	Always	Usually	In no case
Have coffee in the morning	Generally	Under no circumstances	Frequently	Seldom	Usually
Take the bus to the work	Seldom	Always	Usually	Generally	In no case
Check the e-mails	Always	Frequently	Generally	Never	Frequently
Finish the work on time	Frequently	Usually	Rarely	At no time	Seldom
Go to the gym	Generally	At no time	Seldom	Rarely	Always
Watch TV after work	Never	Seldom	Usually	Frequently	Generally

Cont'd

Go to bed at 1 a.m.	Seldom	Rarely	Under no circumstances	Always	Usually

1) Seldom does …….....wake up 7 a.m. in the morning.

2) In no case does……take the bus to the work.

3) …….always goes to bed at 1 a.m.

4) Under no circumstances does ……...have coffee in the morning.

5) ……..……usually watches TV after work.

6) Rarely does…….have lunch.

7) At no time does ……..…. finish the work on time.

8) …….frequently checks the e-mails.

9) Never does …….have breakfast.

10) …….…….generally goes to the gym.

ACTIVITY 2

Listen to the statements* and decide whether they are facts or claims. Circle the appropriate choice.

1. It is said that in no case can our brain be aware of all of the information it takes in.
   a) Fact
   b) Claim

2. It is said that koalas generally sleep 22 hours a day.
    a) Fact
    b) Claim

3. It is said that never can flying cars happen.
    a) Fact
    b) Claim

4. It is said that our eyes are always the same size from birth.
    a) Fact
    b) Claim

5. It is said that hardly ever do aliens visit the earth.
    a) Fact
    b) Claim

**The statements were removed from the students' handouts.*

ACTIVITY 3

Match the beginnings of the sentences in Column A with their ends in Column B.

Column A	**Column B**
1. You can…	a. …criticize my thoughts.
2. Hardly ever can…	b. …judges the way I live.
3. He says that in no way…	c. …always accepts my arguments.
4. Scarcely does…	d. …not ignore what I say.
5. Usually, people…	e. …you tell the truth.
6. He rarely…	f. …can he compete with me.

Cont'd

7. She thinks that she…	g. …she agree with me.

ACTIVITY 4

Listen to the text about what a visitor should and should not do in Turkey and decide whether the statements are True (T), False (F) or Not Given (NG). Put a tick in the appropriate column.

1.	Never should a visitor smoke in a mosque.	**T**	**F**	**NG**
2.	Rarely can a man go inside a mosque with shorts.	**T**	**F**	**NG**
3.	It is sometimes not easy to find food in a distant village during Ramadan.	**T**	**F**	**NG**
4.	In no case can a visitor wear shorts in rural areas.	**T**	**F**	**NG**
5.	A visitor can't usually find food outside of large cities.	**T**	**F**	**NG**
6.	On no account should a female visitor talk to Turkish men in rural areas.	**T**	**F**	**NG**

ACTIVITY 5

Examine the chart below and see how frequently a university student Martin tries to do or not to do against depression. What about you? Indicate whether the same routines apply to you or not by checking either True for me or Not True for me box below.

Martin's Routines Against Depression	**True for me**	**Not True for me**
1. No longer do I sleep less than 7 hours a day.		
2. I generally eat healthy food.		
3. I always do exercise.		
4. Hardly ever do I drink alcohol.		

5. I frequently go out with my friends.		
6. At no time do I watch touching films.		

ACTIVITY 6

You are going to listen to a text in which Sandra talks about the things she believes a person should do and should not do. Do you agree/disagree with Sandra? Put a tick in the appropriate column below.

	AGREE	**DISAGREE**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

ACTIVITY 7

Read the text and decide whether the ideas in the text are Acceptable or Unacceptable to you. Put a tick in the appropriate column.

FACEBOOK AND JOB SEEKERS

"Many job seekers think that recruiters use social media to see what they look like and to see what their friends look like. Personally, I could care less about what you look like, but I do care about what you sound like," says top recruiter Abby Kohut. "Using poor language or speaking badly about people or constantly complaining will

not win you any points with recruiters." Kohut adds, even when using abbreviations, check your grammar and spelling to make sure that it's top notch.

"Recruiters understand that people have social lives, so the occasional drinking picture is okay. What's not okay is drug use or other illegal activities portrayed right on [job candidates'] public Facebook profiles," says Rich DeMatteo, founder of Com on the Job, a career blog and community for job seekers. "For these reasons, it's so incredibly important that everyone use privacy settings on Facebook." DeMatteo also warns that recruiters are widely known for having larger networks than most. "For this reason, it's smart for job seekers to only allow direct connections to view their status updates and pictures," he adds.

"I recruit very heavily from social media sites and I have placed three people in the last year from Facebook. What I look for is someone that has a profile that portrays them in a positive light," explains John A. Fulcher, director of the healthcare division for Bauer Consulting Group. "Following companies that you want to work with is a very good way to stay in tune with the job market and stay visible to that employer."

Sharing articles of interest will also get you noticed as someone the recruiter would want to work with. It means you have your finger on the pulse and you're passionate about the industry.

For Jeremy Spring, vice president and senior search consultant for executive search firm Elever Professional, extreme religious or political expressions, including bigotry (even if it's in jest), are red flags. Add to the list, unsavory or tactless humor. "These may seem obvious, but the Facebook environment lends to its users a false sense of privacy and a seemingly self-constructed ecosphere where true and embellished expressions are acceptable," Spring says. "On many occasions our consultants have had to re-consider the legitimacy of a candidate after finding the above issues on a Facebook page." His advice for job seekers? "If you use Facebook liberally, my suggestion is to set an innocent and decent image of yourself as your profile picture and ratchet up the privacy settings to the highest degree."

		Acceptable	Unacceptable
1.	Abby Kohut thinks that never should a job seeker speak badly with a poor language in social media.		
2.	According to Rich Dametteo, recruiters usually don't mind the drinking pictures of a job candidate.		
3.	John A. Fulcher frequently recruits people from social media sites.		
4.	"On no account should a job seeker exhibit extreme attitudes to religion or politics on Facebook", says Jeremy Spring.		
5.	Jeremy Spring warns job seekers that in no way should they give improper image and be visible to anyone on Facebook.		

ACTIVITY 8

There are rules in the society which people are expected to obey. If you don't obey these rules, you are not punished legally but the society would condemn or criticize you. Do you obey such rules willingly or unwillingly? Read some of these rules below and circle the appropriate column.

1. You should always give your seat to elder people.	a) willingly	b) unwillingly
2. In no case should you argue with family members in front of other people.	a) willingly	b) unwillingly
3. You should frequently visit your neighbors.	a) willingly	b) unwillingly
4. Under no circumstances should you park in handicapped spot.	a) willingly	b) unwillingly
5. At no time should you spit on the floor.	a) willingly	b) unwillingly
6. You should never use bad words.	a) willingly	b) unwillingly
7. On no account should you interrupt older people.	a) willingly	b) unwillingly

Appendix D: Grammaticality Judgment Test- List 1 (Version A)

E-mail:

Section:

TEST 2

Please read the sentences given below and decide whether they are well-formed English sentences. Please **DO NOT** judge them according to how likely they are to be uttered in real life or not!

You are going to judge the sentences in two ways: First, circle one scale among *1 to 5 (1= Completely Ungrammatical, 5=Perfectly Grammatical)* according to the grammaticality of the sentence. Second, if you think there is a grammatical problem in the given statement, please underline the problematic part of the sentence.

Please look at the two examples below before starting:

Examples:

a) The police wanted my brother to move his car to the parking area.

Completely Ungrammatical **1**_____**2**_____**3**_____**4**___ [5] **Perfectly Grammatical**

b) The teacher says that my son **<u>hasn't attended</u>** the classes two days ago.

Completely Ungrammatical [1] _____**2**_____**3**_____**4**_____**5** **Perfectly Grammatical**

1) My mother say that our cat Lily is suffering from a stomachache today.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

2) My friend has always wanted to work at the same company with me.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

3) In no way my father could prove his innocence in the car accident.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

4) The professor said that he had attended a meeting about History next week.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

5) My husband is going to visit the museum at the end of June.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

6) Jessica says that she wants to sleep after a long and busy day.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

7) Rarely does her little child bring fruits and vegetables for lunch to kindergarten.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

8) My friend believes that she can get a good grade in Sociology exam.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

9) The famous footballer says that never does the work stress make him depressed.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

10) My best friend Marie study with a native speaker to sound like her.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

11) The child don't spend time outside with his parents even at the weekend.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

12) Her mother complains that seldom does Catherine take care of their dog Pepe.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

13) His father said that he could not buy a house for his children.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

14) Our teacher had got angry with the noisy students in his classroom today.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

15) On no account my cousin intended to apologize to Carla to please her.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

16) Jason complains that his wife always forgot to send him a birthday present.

Completely 1_____2_____3_____4_____5 Perfectly Ungrammatical Grammatical

17) She said that at no time did she come to class on time.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

18) Her mother said that Paul should not talk about the matter in detail.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

19) My brother said that he buys his flight ticket by nine o'clock tomorrow.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

20) She said that in no case she can spend a year in prison.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

21) My little sister enjoys spending too much time in front of the TV.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

22) The taxi driver had to take the old woman to another hospital immediately.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

23) Under no circumstances does a clever person lend his best friend any money.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

24) She listened to the lecture about the new project in the conference hall.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

25) A tour guide give some information about historical places during a trip.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

26) No longer does my friend Martin share his little office with anybody else.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

27) She say that she wants me to go to the party with her.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

28) She wants to add more people to her new group from other classes.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

29) He complained that the team did not struggle enough to win the game.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

30) The suspect indicated that not even once he was involved in a crime.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

31) My friend sit in front of the computer all day long after school.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

32) Nick decided that it was necessary to go to the office on Sundays.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

33) The new book became very popular all over the world in a short time.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

34) Hardly ever the student speaks English with his Turkish friends outside the class.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

35) My daughter didn't go on a vacation with her friends for a long time.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

36) The doctor said that he is working at a state hospital since 2006.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

37) The young boy falls from his bike on his way to school yesterday.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

38) The students complained that scarcely the new school bus follows the right route.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

39) He said that it was easy for him to learn the Russian language.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

40) My boss hope that he can rest a lot during his summer vacation.

Completely Ungrammatical **1_____2_____3_____4_____5** **Perfectly Grammatical**

Appendix E: Production Test- List 2 (Version A)

E-mail:

Section:

TEST 1

Task 1

Rewrite the following sentences without changing their meaning. You may need to use different words from the ones in the original sentence.

Example:

He has never visited Italy before.

It is the first time he has visited Italy.

1) Marco does not want to talk to his sister anymore.
   Under no circumstances…….…….

2) Cameron said, "I will be working all day long."
   Cameron said that……...

3) Dorothy's husband always drives carefully.
   At no time……...

4) He has probably borrowed that blue car from his friend.
   It is likely that…….

5) My daughter will move to another house this summer.
   No longer……

6) He must have missed the bus.
   The teacher is almost certain that……

7) "This young boy hasn't been to any bar in his life" said George to his friend.
   George said that never……

8) She doesn't need to prepare breakfast this morning.
   It isn't……..

9) "I mostly go on holidays with my friends" said Amanda.
   Amanda said that rarely……..

10) The last time Nancy saw her brother was three months ago.
    Nancy hasn't……...

11) "He doesn't often greet his neighbors in the mornings." complained Joe.
    Joe complained that seldom……

12) My mother will call a mechanic to repair her car.
    My mother will have……...

Task 2

Read the short dialogues between two people below. Complete the sentences that follow each dialogue according to the words of the second person talking in the dialogue.

Example:

Son: Do you have some time to help me with the Maths exercises, Dad?

Dad: Let's work on them after dinner, shall we?

Dad suggested that <u>they work on the Maths exercises after dinner</u>.

1) Malcolm: My biggest dream is to travel to Africa one day.
   Janet: You can't go without me!

In no case……

2) Rose: When are you going to buy a car?
   Eric: It isn't certain yet.

Eric said that he……...

3) Professor: Which of the following countries receive very low rainfall?
   Student: I think it is Egypt! It has got a dry and warm weather.

Hardly ever……..

4) Taylor: Hey, Daniel! Have you seen my book?
   Daniel: No, but I guess it's in the living room.

Daniel said that the book…….

5) Ray: Hey, Frank! Let's watch the film Saw tonight!
   Frank: I'm sorry but I don't usually watch horror films.

Scarcely……...

6) Daisy: Will your cousin join us?
   Sarah: I hope so.

Sarah thinks that her cousin……

7) Angelina: Would you like to come to the garden party tonight?
   Valeria: I don't know. I have never attended a party in my life.

Valeria said that not even once……...

8) Son: Mom, when will the meal be ready?
   Mother: If you help me, it will be ready in only five minutes!

The mother asks……..

9) Dad: Are you going to visit Robert today?
   Timothy: No! I won't talk to him again.

Timothy said that on no account.....

10) Barbara: Let's go to the concert tonight!

    Sally: I think I should stay home and rest.

Sally would…….

11) Nelson: Let's go to Dan's coffee shop!

    Rachel: I won't go anywhere in this heavy rain!

Rachel said that in no way……..

12) Pat: How about going on a picnic at the weekend?

    Adam: Great idea! I don't want to spend the weekend alone.

Adam is willing……...

Appendix F: Curriculum Vitae

PERSONAL INFORMATION

Surname, Name : Yapıcı, Burçin

Nationality : Turkish (TC)

Email : yburcin@metu.edu.tr

EDUCATION

Degree	Institution	Year of Graduation
MA	Hacettepe University, Foreign Language Education	2009
BA	Çukurova University, English Language Teaching	2006

WORK EXPERIENCE

Year	Place	Enrollment
2008- 2015	METU, Department of Foreign Language Education	Research Assistant

PERSONAL EXPERIENCE

Year	Place	Enrollment
2015-2016	University of Arizona, MENAS	Fulbright FLTA
2011	University of Greenwich	Erasmus Placement Mobility Internship

FOREIGN LANGUAGES

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
German	A2	A2	A1	A1	A2

(*) Common European Framework of Reference for Languages

PRESENTATIONS AND PUBLICATIONS

Yapici, B. (2008). The effect of fill-in-the-blank type of authentic dialogues on focus-on-form approach in EFL classroom. In D. Cokal-Karadas & F. Kilickaya (Eds.), The *6th METU International Postgraduate Conference in Linguistics and Language Teaching Proceedings,18-19 September, Ankara: Turkey, Murat Publishing, pp.148-155.*

Yapici, B., Akyol Ö., İlerten, F. (2011). Türk kadın moda dergilerindeki metinlerde kullanılan İngilizce ifadeler. *In H. Cubukcu, N. F. Turkay, D. Sucak, E. Altunkol, O. Akyol, & E. Ucar (Eds.), The* 25th *National Linguistics Convention Proceedings, 5-7 May, Cukurova University, Adana:Turkey, pp.272-275.*

Appendix G: Turkish Summary/ Türkçe Özet

İNGİLİZCE DEVRİK-OLUMSUZ ZARF YAPILARINI EDİNMEDE İŞLEMLEME ÖĞRETİMİNİN YENİDEN MARUZ BIRAKMA VE UZUN VADELİ ETKİLERİNİ ÖLÇME

1. Giriş

Son yıllarda ikinci dil öğretiminde dilbilgisine atfedilen rolde bir değişim oldu. Daha önceleri uzun yıllar dilbilgisi, dil öğreniminin temel bileşeni olarak görülüyordu. Dil öğrenmek, o dilin dilbilgisi kurallarını öğrenebilmeyle denkti. 1970'lerde iletişimsel dil öğretiminin gelmesiyle ve dilin iletişim için olduğunu gösteren bu yeni düşünceyle birlikte dilbilgisine atfedilen önem azalmaya başladı. Yakın geçmişte ise ikinci dil ediniminde dilbilgisinin önemi hem araştırmacı hem de profesyoneller tarafından yeniden vurgulanmıştır. Nassaji ve Fotos'a (2011) göre bu vurgunun birçok sebebi vardır ve bunların birkaçı şu şekilde özetlenebilir: (i) dil öğrenebilmek için bir bilinç düzeyinde olmak gereklidir, (ii) anlam üzerine odaklanmayı yeğleyen yetersiz deneysel çalışmalar, (iii) dil öğretiminin, ikinci dil kazanım sürati ve nihai seviyesine ulaşması üzerindeki önemli etkileri son araştırmalarla gösterilmiştir.

Yukarıda belirtilen nedenler ayrıca dil ediniminde dil öğretiminin önemini vurgulamaktadır. İkinci dil ediniminde dil öğretiminin en büyük bileşenlerinden biri girdidir. Girdinin rolü ise işlemleme kavramı aracılığıyla anlaşılabilir (Gass, 2005). VanPatten (1996) girdi işlemleme teorisiyle ilgilenmiştir ve öğrencilerin, edindikleri dilbilgisinin zihinsel bir temsilini oluşturmak için girdi kullandıklarını belirtmektedir. Bununla birlikte, gözetilen girdilerin tamamının algıya dönüşmeyeceğine ya da dilbilimsel ögenin yanlış yorumlanabileceğine dikkat çekmiştir. Bu nedenle, VanPatten ve meslektaşları (Lee & VanPatten, 2003; VanPatten, 1996, 2002) girdi temelli bir yaklaşım olup temel odağı, ikinci dil öğrenicileri, dili girdi aşamasında işlemlerken müdahale etmek olan işlemleme öğretimini (İÖ) geliştirdiler.

Araştırmacılar, İÖ'nün ne kadar etkili olduğunu ölçmek için birçok deneysel çalışma yaptılar. Çalışmaların çoğunda girdi temelli bir yaklaşım olan İÖ diğer geleneksel çıktı temelli yaklaşımlarla karşılaştırılmıştır. Çalışmalar, İÖ 'nün hem yorumlama hem de üretim düzeylerinde genel olarak üstün etkisini ortaya koymuşlardır.

Bu çalışma, İÖ'nün öğrencilere, daha önceki İÖ çalışmalarında incelenmemiş olan İngilizce devrik olumsuz-zarf (DOZ) yapılarını yorumlama ve üretme yeteneklerini geliştirmede yardımcı olup olamayacağını göstermekle alan yazına daha fazla katkıda bulunmayı amaçlamaktadır. Ayrıca, çalışmanın tasarımı, aynı İÖ'nün iki işlemleme grubuna uygulanması ve sonuçların kontrol grubu ile karşılaştırılması bakımından önceki araştırmalardan farklıdır.

Bu çalışma, aynı zamanda, öğrencilerin kazanımlarının uzun vadede korunup korunmadığını bulmayı amaçlamaktadır. Uzun vadeli İÖ kazanımlarını ölçen çalışmaların sayısı sınırlıdır, bu nedenle daha fazla çalışma gereklidir. Mevcut çalışmanın, İÖ'nün uzun vadeli etkilerini tanımlamasına katkıda bulunacağı düşünülmektedir. Buna ek olarak, yalnızca birkaç çalışma İÖ'nün yeniden maruz bırakma etkilerini araştırmıştır. Bu çalışma, bir İÖ grubunun performanslarını İngilizce DOZ yapılarına yeniden maruz bırakılan başka bir İÖ grubu ile karşılaştırarak bu boşluğu doldurmayı amaçlamaktadır.

1.1 Çalışmanın Önemi

Bu çalışmanın temel amacı, ikinci dil öğrenicilerin hedef dilbilgisel öğeyi cümle düzeyinde yorumlama ve üretme becerisini korumakla kalmayıp İÖ'ye yeniden maruz bırakıldıkları takdirde bu becerilerini güçlendirebilecekleri hipotezini desteklemek için İÖ'ye yeniden maruz bırakmayı uzun vadeli etkileriyle birlikte ölçmektir. Önerilen çalışma, yeniden maruz bırakma muamelesi çok kısa dönemli ve gecikmeli testler kullanarak İngilizce DOZ yapılarının edinilmesine yönelik İÖ'nün etkilerini araştıracaktır.

İÖ üzerinde yapılan çalışmalar, çoğunlukla İÖ'nün etkili olup olmadığını anlamak için onu geleneksel öğretimler veya diğer çıktı temelli uygulamalarla kıyaslamıştır ve bu çalışmaların katılımcıları, başlangıç veya orta seviyedeki İngilizce öğrencileriydi. Sonuçlar, İÖ'nün diğer öğretim uygulamalarına göre daha etkili olduğunu

göstermiştir. Mevcut çalışma, İÖ ‘ye maruz bırakılan ileri seviye İngilizce öğrenicilerinin de DOZ yapıları içeren cümleleri yorumlama ve üretme becerilerini geliştirip geliştiremeyeceklerini araştırarak alan teori ve araştırmasına katkıda bulunmayı amaçlamaktadır. Araştırmaya katılan öğrenciler İngilizce öğretmeni adaylarıydı. O bakımdan çalışmanın sonuçları, öğretmenlerin dilbilgisi öğretiminde İÖ’nün olası olumlu etkilerini kullanmaları bakımından önemlidir.

İÖ’nün kısa dönem etkilerini belgeleyen çalışmaların sayısı, uzun vadeli etkilerini belgeleyenlerden çok daha fazladır. İÖ’nün, etkileri kısa dönemli art sınavlardan sonra bir hafta ile dört hafta hatta sekiz ay süren etkili bir yöntem olduğu tespit edilmiştir. Bununla birlikte, bu çalışmalarda İÖ’nün etkileri çok kısa süreli testlerden uzun süreli testlere kadar geçen sürede azalmış ve öğrencilerin hiçbiri uzun vadeli bir ilerleme kaydedememiştir.

İÖ’ye yeniden maruz kalma etkileri ise yalnızca birkaç çalışma tarafından araştırılmıştır. Bilişsel bir bakış açısıyla bakıldığında, tekrarlanan maruz kalma durumu, ikinci dil öğrenicilerinin dilbilgisi yapılarını idrak etmede güçlenmelerini sağlayabilir ve ikinci dil edinimlerini geliştirebilir. Bu nedenle, çalışmanın özellikle, öğrencileri DOZ yapılarına iki kez maruz bırakarak onların bu yapıları uygun, doğru ve nispeten kalıcı bir şekilde işlemlemelerine yardımcı olarak, dilbilgisi öğretimine katkı sağlaması umulmaktadır.

1.2 Araştırma Soruları

Bu çalışmanın cevaplamayı amaçladığı araştırma soruları şunlardır:

1. İÖ, İngilizce DOZ yapılarının yorumlanması ve üretilmesini olumlu bir şekilde etkileyebilir mi?
2. İÖ, öğrencilerin kazanımlarını uzun vadede korumasına yardımcı olabilir mi?
3. İÖ’ye yeniden maruz kalan öğrenciler, İngilizce DOZ yapılarını yorumlama ve üretmede yalnızca İÖ grubundan daha iyi olabilir mi?

2. Alan yazın İncelemesi

2.1 Anadil ve İkinci Dil Ediniminde Girdinin Rolü

Girdi, dil öğrenmenin gerekli bir unsurudur. Çocuklar anadillerini büyük olasılıkla az bir bilinçle veya bilinçsiz olarak öğrenirken dilsel girdilere aşırı derecede maruz kalmaktadırlar. Davranışçı kurama göre, çocukların taklit ederek öğrenmeleri bekleniyordu, bu yüzden girdi dil edinimi için tek kaynak olarak görülüyordu (Gass, 2005). 1960'lı yıllarda ortaya çıkan bilişsel bakış açısından ise, girdi ana dil ediniminde yeterli değildi. Bilişselciler, dilin taklit yoluyla öğrenildiği düşüncesini reddettiler. Çocukların bilişsel yeteneklerinin edinim sürecine dâhil olduğunu ileri sürdüler. Bu fikri desteklemek için verilen yaygın örnek ise çocukların duydukları sınırlı sayıda sözceden sayısız cümle üretebiliyor oluşudur (Chomsky, 1981). Çocukların özgün sözceleri, insanların dil öğrenmek için doğuştan bir kapasiteye sahip olduğu görüşünü desteklemektedir. Chomsky tarafından önerilen doğuştanlık varsayımı -Evrensel Dilbilgisi olarak da bilinir- tüm dillerin evrensel ilkeleri paylaştığını ve diller arasındaki farklılıkların parametreler biçiminde karakterize edildiğini ileri sürmektedir. Bir öğrenci ana dilini evrensel ilkeler yoluyla edinebilir ve yapması gereken şey, öğrenilen dile özgü parametreleri yeniden ayarlamaktır. Öte yandan, Evrensel Dilbilgisi (ED) girdinin sahip olduğu önemli rolü tamamen reddetmez. Littlewood'un (2005) belirttiği gibi, "girdi, öncelikle mekanizmaları harekete geçirmek için tetikleyici olarak hareket eder" (sf. 10).

Girdi, ikinci dil ediniminde de önemli rol oynamaktadır. Öğrenciler hedef dile maruz kalmadıkça edinim yapılamaz (Ellis, 2005). Fakat ikinci dil öğrenicilerin, ana dil ediniminde olduğu gibi, girdi sınırının üzerinde zihinsel bir temsil oluşturup oluşturamadıkları ve ED'nin bu bilginin inşa edilmesine yardımcı olup olamadığı tartışma konusudur (White, 2005). Bu tartışma, yetişkinlerin ikinci dil ediniminde mantıklı olabilir çünkü yetişkinler ana dillerini çoktan edinmişlerdir. Bu nedenle, çocukların ve yetişkinlerin başlangıç durumları birbirinden farklıdır ve aynı zamanda çocukların aksine birçok yetişkin dil edinimi standartlarında farklı erişim seviyeleri göstermektedir (Sorace, 2005). Bu bağlamda, erişkinlerin ikindi dil ediniminde, ikinci dil öğrenicilerinin eriştikleri bilgiye ilişkin ana dil aktarımı da dikkate

alınmalıdır çünkü ikinci dil öğrenicileri çocukluk döneminde zaten ana dillerini kazanmışlardır.

Krashen'ın (1985) ikinci dil edinimi kuramına göre, edinim için gerekli olan tek şey kavranabilir girdidir. Ona göre, edinim bilinçaltı bir süreç olmalıdır ve kavranabilir girdi öğrencilere dolaylı olarak verilmelidir. İkinci dil öğrenicilerinin doğal çevrede önemli bir miktar girdiye maruz kaldıkları varsayılır. Fakat sınıf ortamında, ne yabancı dil öğretmenleri ne de öğrenciler sınıflarında yeterli miktarda kavranabilir girdi verilip verilmediğinde emin olabilirler. Buna ek olarak, öğrenciler aldıkları her girdiyi anlayamazlar çünkü mevcut tüm bilgiler ile ilgilenmeleri imkânsızdır (Wong, 2005). Bu nedenle, öğrencilerin girdiyi işlemlemesine yardımcı olacak özel bir açık öğretim türü gerekir. Bu amaçla, VanPatten (1993) tarafından, İÖ modeline dayanan İÖ teorisi ve ilkeleri geliştirilmiştir.

2.2 Girdi İşlemleme Teorisi

VanPatten and Cadierno (1993a), ikinci dil öğreniminde üç süreç olduğunu öne sürmektedir. İlk süreç, girdinin alıma dönüştüğü İÖ'yü ifade eder. VanPatten'ın (2002a) belirttiği üzere alım, girdiden gerçek anlamda işlenen ve ileri işlemleme için kısa süreli bellekte tutulan dilsel veriler olarak tanımlanmaktadır. Bu ikinci dil edinimi modelinde, ilk süreçler, "kavrayış sırasında biçim-anlam bağlantılarını kuran stratejiler ve mekanizmalar" içerir (VanPatten & Cadierno, 1993a, sf. 46). İkinci süreç, gelişmekte olan sistemin uyumunu ve yeniden yapılandırılmasını içerir. Bu ileri işlemleme, alımın hatalı işlenmiş verileri içerebileceği gerçeğinden ötürü gereklidir. İzlemeyi, erişimi, kontrol vb. içeren üçüncü süreç, gelişmekte olan sistemi dil üretiminde kullanmak için gereklidir.

İÖ, öğrencilerin, öncelikle anlamaya dikkatlerini vermişken, girdiden biçime erişme biçimlerini ve anlama esnasında cümleleri analiz etmelerini ifade eder (VanPatten, 2002a).

VanPatten, İÖ ilkelerini 1993 yılında geliştirdi ve 2007 yılında bir daha gözden geçirdi. Teorinin mevcut biçiminde iki ana ilke vardır (Lee & Benati, 2009). Bunlar, altı alt ilkeye bölünmüş olan "Anlam Önceliği İlkesi" ve üç alt ilkeye sahip olan "İlk önce Ad İlkesi"dir.

VanPatten'a göre (1996), öğrenci, anlama kısmen veya tamamen ulaşabilmesine rağmen, biçim-anlam bağlantılarını aynı anda yapar. Bu fikir, İÖ teorisinin iki ana ilkesini desteklemektedir. İlk ilke olan "Anlam Önceliği İlkesi", Krashen'ın (1982) girdi hipotezi teorisine de dayanan, öğrenci öncelikle girdideki anlamı arar fikrini ileri sürmektedir. Ancak kısa süreli belleğin kısıtlamaları nedeniyle bazı özellikler gözden kaçabilir (örn. Çekim eki). Öğrencinin anlamak için başlangıçta işlemlediği söz ya da cümledeki öğeler "Anlam Önceliği İlkesi"nin altı alt ilkesini teşkil eder. Bu çalışma için, DOZ yapısı seçilmiştir ve bu yapı "Anlam Önceliği İlkesi"nin alt ilkeleri olan "Cümleden Atılamayan Öğe Tercihi İlkesi" ve "Cümledeki Konum İlkesi"ne uymaktadır.

2.3 İşlemleme Öğretimi

İÖ, VanPatten'ın girdi işlemleme teorisine dayanan biçim odaklı bir öğretim yöntemidir (Wong, 2004). Biçim odaklı öğretim yöntemi, "öğrencilerin dikkatini, derslerde ortaya çıkan ve ağır basan odağı anlam veya iletişim olan dilsel öğelere açıkça dikkat çeker" (Long, 1991, sf. 45-46). İÖ, İÖ prensiplerini göz önüne alan, girdideki hem biçim hem de anlama, seçici dikkatin açık bir şekilde çekilmesi ile oluşan, biçim odaklı ve açık öğretim yönteminin birleşimidir. Örneğin, girdi işlemleme teorisindeki "Cümleden Atılamayan Öğe Tercihi İlkesi"ne göre, öğrenciler cümleden atılabilen yapıları işlemlemeden önce cümleden atılamayan anlamlı yapıları işlemlemeye daha meyillidirler. İÖ, cümleden atılabilir bir yapı olan "Zaman İşaretleri"ni, öğrencilerin biçim-anlam bağlantıları kurmasına yardımcı olmak için girdide daha belirgin bir hale getirebilir (Benati, 2001).

İÖ'nün amacı, "öğrencilerin girdi verilerine dikkatlerini çekecek yolları etkilemektir" (Van Patten, 1996, sf. 2). Bu nedenle, İÖ, girdiye kasıtlı olarak müdahale eder (Lee & Benati, 2009). İÖ, geleneksel yöntemlerin yaptığı gibi çıktıyı manipüle etmek yerine, işlemleme mekanizmaları ve odaklanmış alıştırmalar yoluyla girdi işlemlemesinde olası değişiklikler yapmayı hedefler. Bu nedenle, İÖ, önce, "öğrenicilerin belirli bir biçimi veya yapıyı doğru işlemlemesini engelleyen işlemleme stratejisini tanımlar" (Wong, 2004, sf. 35) ve bu bakımdan diğer açık öğretim yöntemlerinden farklıdır. İÖ, aynı zamanda, öğrencilere anlaşılır girdi

sağlamaya çalışan diğer anlama temelli yaklaşımlardan da farklıdır ve öğrenicilerin anlama sırasında girdiği nasıl işlemlediğiyle ilgilenmemektedir (VanPatten, 1996).

İÖ'nün başlıca bileşenleri şunlardır:

1. Öğrencilere hedef dil biçimi veya yapısı hakkında bilgi verilir.
2. Hedef yapının işlemlenmesini olumsuz olarak etkileyebilecek girdi işlemleme stratejileri hakkında bilgilendirilirler.
3. Anlama esnasında, biçimi anlamaları ve işlemlemelerine yardımcı olan girdi tabanlı aktiviteler yürütürler (Nassaji & Fotos, 2011, sf. 24).

2.4 İşleme Öğretimi Hakkında Yapılan Araştırmalar

Bu bölüm, İÖ ile geleneksel öğretim ve diğer sonuç odaklı öğretimlerin karşılaştırılmasıyla başlayan İÖ araştırma sonuçlarının bir özetidir. Daha sonraki kısımda, İÖ'nün uzun vadeli etkilerini sınayan çalışmaların sonuçları ve son kısımda ise İÖ'nün yeniden maruz bırakma etkilerini araştıran çalışmaların sonuçları özetlenecektir.

2.4.1 İşlemleme Öğretimi ve Geleneksel Yöntemlerin Kıyaslandığı Çalışmaların Sonuçlarının Özeti

İÖ'nün diğer çıktı temelli öğretim yöntemlerinin etkisi ile karşılaştırılan çalışmaların sonuçları, İÖ'nün genel olarak çıktı temelli öğretimlerden daha etkili bir yöntem olduğunu göstermiştir. Çalışmalardan aşağıdaki sonuçlar çıkarılabilir:

- Başlangıç ve orta düzeydeki öğrenicilerin, İÖ sayesinde, hedef öğeleri yorumlama yeteneklerinde üretme yeteneklerine kıyasla daha fazla kazanımları olmuştur.
- Diğer çıktı temelli öğretim yöntemlerinin de öğrenicilerin üretme yeteneklerinin geliştirilmesinde yararlı olduğu bulunmuştur.
- İÖ, farklı dil geçmişlerine (örn. İngilizce, Çince ve Yunanca) ve çeşitli hedef dil biçimlerine (örn. İspanyolca, İtalyanca, Fransızca, İngilizce) sahip öğrenicilerde olumlu etkilere sahiptir.

- İÖ, İÖ teorisinin farklı işlemleme stratejilerine dayanan dilsel öğelerin ediniminde etkili olabilir.

2.4.2 İşlemleme Öğretiminin Uzun Süreli Etkilerini Ölçen Çalışmaların Sonuçlarının Özeti

- Bulgular, İÖ'nün bir haftadan sekiz aya kadar süren etkileri olduğunu gösterdi.
- İÖ'nün yeni başlayanlar orta yeterlik seviyesindeki ikinci dil öğrenicileri üzerinde uzun süreli etkileri olduğu gösterilmiştir.
- Öğreniciler kazanımlarında devamlılığı sağlayabildiler, ancak uzun vadede herhangi bir gelişme göstermediler. Performansları ya iki art sınav süresi arasında sabit kaldı ya da art sınavlarda bir miktar azaldı.
- Öğrenicilerin çok kısa süreli art sınavlardan gecikmiş art sınavlara doğru iyileştirilmiş olan performansları, farklı zaman aralıklarında (bir haftadan altı haftaya kadar değişen sürelerde) onları test eden bazı İÖ çalışmaları tarafından da gösterildiği gibi önemli ölçüde azaldı.
- Çalışmalar, çoğunlukla yorumlamadan ziyade üretim performanslarında düşüş gösterdi.

2.4.3 İşlemleme Öğretiminin Yeniden Maruz Bırakma Etkilerini ÖlçenÇalışmaların Sonuçlarının Özeti

İÖ'nün yeniden maruz bırakma etkilerini ölçen iki çalışma (Benati, 2015; Hikima, 2011), ana dili İngilizce olan dil öğrenicilerinin, cümle ve söylem düzeyindeki Japonca edilgen yapıları yorumlama ve üretme kabiliyetlerini geliştirme olanağı olup olmadığını test etmiştir. Hipotezi destekleyici sonuçlar, İÖ'ye ya da yapılandırılmış girdi temelli aktivitelere yeniden maruz bırakılmanın, yalnız İÖ ile elde edilemeyen, öğrenicilerin çok kısa süreli art sınavlardan uzun süreli art sınavlara olan performanslarını artırmak için kullanılabileceğini göstermiştir.

3. Araştırma Yöntemi

Bu bölüm, İÖ'nün İngilizce DOZ yapılarının edinimindeki etkilerini ölçmek için kullanılan izlekleri sunmaktadır. Birinci bölümde, DOZ yapıları ve bu konuyu seçme

nedenleri açıklanmaktadır. İkinci bölümde araştırma planı anlatılmaktadır. Ardından, verilerin toplandığı katılımcılar, artalan anketi, öğretim materyalleri ve değerlendirme araçları sunulmuştur. Puanlama ve veri analiz yöntemleri ise son bölümde açıklanmıştır.

3.1 Araştırmanın Dilbilgisi Konusu

Bu çalışma için seçilen hedef öğe, İngilizcede öne yerleşiklik durumunda devriklik gerektiren DOZ yapılarıdır. Yüklem haricindeki bazı unsurlar cümlenin başlangıç kısmına kaydığı ve Yüklem-Özne ya da Yardımcı Fiil-Özne-Yüklem dizilimini takip ettiği zaman devriklik ortaya çıkar. DOZ yapıları bir Özne-Yardımcı Fiil-Devriklik türüdür, bu nedenle, Olumsuz Zarflar cümle başındayken Yardımcı Fiil-Özne-Yüklem dizilimini takip eder.

DOZ yapıları içe yerleşik cümlelerde de kullanılabilir (Green, 1985). Bu çalışmada, içe yerleşik DOZ yapılarında tamamlayıcı olan ve sadece dolaylı cümlelerde kullanılan "That" cümlecik örneklerine yer verilmiştir.

Türkçe cümleler ise, İngilizceden farklı olarak Özne-Nesne-Yüklem sırasını takip eder ve "zarflar, genellikle niteledikleri yüklem, sıfat veya zarftan önce gelirler" (Erguvanlı, 1984, sf. 136).

Örn: Ceren arabayı dikkatli kullanır.

Özne-Nesne-Yüklem düzeni Türkçede genel bir dilbilgisi kuralıysa da sözcük düzeni esnektir. Devrik sözcük düzeni yapıları kullanmak mümkündür. Öte yandan, DOZ yapılarını devrik yapmayı gerektiren bir kural yoktur. İngilizceden farklı olarak Türkçe olumsuz zarflar yerleşik cümlelerde kullanıldığında devrik cümle gerektirmez.

Örn: Ahmet nadiren araba kullandığını söyledi.

İngilizce öğrenen Türk konuşucular, bu farklılık yüzünden DOZ yapılarını edinmede güçlük çekebilirler. Bu öğrenciler için bir diğer zorluk, biçim-anlam bağdaştırma probleminden kaynaklanıyor olabilir. Biçim ve anlam bağlantısının şeffaf olmaması, bu bağdaştırmayı edinmeyi sorunlu hale getirebilir (De Keyser, 2005). DOZ yapıları

belirli bir amaç için kullanılır, bu nedenle günlük konuşmalardaki Özne-Yüklem-Nesne düzeni kadar yaygın değildir. Reinders ve Ellis (2009) İngiliz Ulusal analizi sonucu devrik cümle yapan olumsuz zarfların nadir kullanımına değinmişlerdir.

Ana dili Türkçe olan İngilizce öğrenicilerin dilbilgisi kurallarına uygun biçimde DOZ yapıları oluşturma ve/veya kullanırken karşılaşabilecekleri işlemleme sorunları, "Anlam Önceliği İlkesi" ve onun alt ilkesi olan "Cümleden Atılamayan Öğe Tercihi İlkesi"nden kaynaklanabilir. Yerleşik cümlelerde ise bu ilkeler "Cümledeki Konum İlkesi" ile koordineli bir biçimde çalışabilir. VanPatten (2004) bir başka olasılık olarak "öğrenicilerin edinime anadil ayrıştırma yöntemiyle başlaması" olarak tanımladığı "Anadilden Aktarım İlkesi"nden de bahsetmiştir.

3.2 Araştırma Deseni

Veriler, üç grup yabancı dil öğrencisinden deneysel yöntem kullanılarak toplandı. Bu gruplar: EG1, EG2 ve CG olarak adlandırıldı. EG1 ve EG2'ye İÖ ve yapılandırılmış girdi aktiviteleri kullanılarak DOZ yapıları öğretildi. EG1 ise bu eğitimi ikinci art sınavdan iki hafta sonra ikinci kez aldı. CG ise ne söz konusu açık öğretim yöntemini aldı ne de aktiviteleri yaptı. Çalışmada ön-test ve art-test deseni kullanıldı. Deneylerdeki bağımsız değişken, EG1 ve EG2'ye uygulanan açık öğretim ve yapılandırılmış girdi aktiviteleriydi. Bağımlı değişken ise, katılımcıların test puanlarıydı. İlk art sınavlar iki deneysel gruba öğretimden hemen sonra uygulanmış eş zamanlı olarak da CG'ye uygulanmıştır. İkinci art sınavlar öğretimden iki hafta sonra, son art sınav ise öğretimden altı ay sonra olmak üzere üç gruba da uygulanmıştır. Testler cümle düzeyinde yorumlama ve üretim olmak üzere iki tiptir. İÖ ve testler araştırmacı tarafından uygulanmıştır.

3.3 Katılımcılar

Çalışma, Türkiye'deki bir devlet üniversitesinde, ileri seviye İngilizce bilgisine sahip üç Türkçe konuşucu grupla yürütülmüştür. Katılımcılar, 22 ile 24 yaş aralığında olup dört yıllık İngilizce Öğretmenliği programındaki son sınıf lisans öğrencilerinden oluşmuştur.

3.4 Anket

Anket, iki amaç için kullanılmıştır. Bunlardan ilki, katılımcıların İngilizce yeterlilik seviyesi ve ayrıntılı dil geçmişlerini öğrenmekti. Katılımcıların ileri düzey İngilizce yeterliliklerine sahip olduğu varsayılmıştır. Bununla birlikte, bu bilgiyi doğrulamak için katılımcılara uluslar arası düzeyde İngilizce bilgisini ölçen TOEFL ve/veya IELTS standart test sonuçları sorulmuştur. Bu anket ile ikinci olarak, katılımcıların DOZ yapılarının biçim, anlam ve kullanımı hakkında herhangi bir bilgiye sahip olup olmadıkları sorulmuştur. Ayrıca DOZ yapılarının onlara eğitimlerinin herhangi bir döneminde açıkça anlatılıp anlatılmadığı da sorulmuştur. Böylece, anlatılacak uygun dilbilgisel yapının seçiminin geçerliliğini artırmak hedeflenmiştir.

3.5 Öğretim Materyalleri

Öğretim materyalleri İÖ'nün üç aşamasını takip ederek hazırlanmıştır. Bunlar:

1. DOZ yapıları hakkında açık öğretim
2. İşlemleme stratejileri hakkında bilgi
3. İki farklı yapılandırılmış aktivite türü: Göndergesel ve Duygusal.

DOZ yapıları ile ilgili açık öğretim *ne, nasıl, neden* soruları temel alınarak düzenlendi. İşlemleme stratejileri hakkında bilgi verme işi ise, katılımcıların potansiyel alım olanaklarını engelleyebilecek işlemleme problemlerini fark ettirmeye yönelik bir girişimdi. Bu potansiyel işlemleme problemleri, İÖ teorisi prensiplerini temel almıştır.

Eğitim ve yönergeler katılımcıların İngilizce dilbilgisi seviyelerinin yüksek olması sebebiyle İngilizce dilinde verildi. Eğitim boyunca katılımcılardan hedef yapıları üretmeleri istenmedi. Eğitim dört saat sürdü.

Aktivitelerin amacı, katılımcıların biçim-anlam ilişkileri kurmak için cümle başında yer alan olumsuz zarflara odaklanmalarını sağlamaktı. VanPatten'ın önerdiği gibi aktiviteler bireysel farklılıkları göz önüne alması bakımında hem sözlü hem de yazılı olarak sunuldu. Dört göndergesel aktivitenin ikisi sözlü ikisi yazılıydı ve aynı şekilde dört duygusal aktivitenin de ikisi sözlü ve ikisi yazılıydı.

3.6 Değerlendirme Testleri

İki tür cümle düzeyinde test kullanıldı. Bunlar, dilbilgisi karar testi ve üretim testinden oluşuyordu. Dilbilgisi karar testinde 12'si hedef 24'ü çeldirici olmak üzere toplam 40 cümle bulunuyordu. Hedef maddelerin ve çeldiricilerin yarısı dilbilgisi kurallarına aykırıydı. Her cümle 13 kelimeden oluşturuldu, böylece cümle uzunluklarının katılımcıların kararlarını yönlendirici bir etkisi olmayacaktı. Katılımcılardan cümleleri 5'li Likert ölçeğine göre (1 = Hiç Dilbilgisi Kurallarına Uygun Değil, 5 = Tamamıyla Dilbilgisi Kurallarına Uygun) derecelendirmeleri istendi. Tahmin olasılığını azaltmak için de derecelendirmeye ek olarak cümlelerde problemli olduğunu düşündükleri bölümün altlarını çizmeleri istendi.

Üretim testi ise iki bölümden oluşuyordu. Bunlar yeniden yazma ve diyalog tamamlama idi. Her bir bölüm yarısı hedef, diğer yarısı çeldirici olmak üzere 12 maddeden oluşuyordu. Yeniden yazma bölümünde katılımcılardan verilen cümleleri anlamlarını değiştirmeden yeniden yazmaları istendi. Cümle girişleri ise ipucu olarak verildi. Diyalog tamamlamada ise iki kişilik kısa diyaloglar oluşturuldu ve katılımcılardan diyalogdaki ikinci kişinin konuşması cevabına dayanarak özet bir cümle oluşturmaları istendi ve bu bölümde de cümle girişleri ipucu olarak verildi.

Dilbilgisi karar testi ve üretme testlerinin her birindeki soruların yerleri değiştirilerek ikişer liste oluşturuldu. Katılımcılara her test uygulamasında farklı listeler verildi. Örneğin, ilk art sınavda üç grup da dilbilgisi karar testinin A türünü ve üretme testinin B türünü aldılar. İki hafta sonraki art sınavda ise dilbilgisi karar testinin B türünü ve üretme testinin A türünü aldılar. Ayrıca testler üç gruba da her defasında farklı öncelikle verildi.

3.7 Puanlama

5'li Likert ölçeğine dayanan dilbilgisi karar testinde katılımcılar her dilbilgisi kuralına uygun hedef cümlede 5'i işaretledilerse 2 puan; 4'ü işaretledilerse 1 puan aldılar. 3, 2 veya 1'i işaretleyenlerse hiç puan alamadılar. Dilbilgisi kuralına uygun olmayan hedef cümlelerde ise, 1'i işaretledilerse ve cümlelerin yanlış olan Olumsuz Zarf + Yardımcı Fiil + Özne diziliminin altını çizdilerse 2 puan; 2'yi işaretledilerse 1

puan aldılar. 3, 2 veya 1'i işaretleyenlerse hiç puan alamadılar. Bu testten alabilecekleri maksimum puan 24'tü.

Üretme testinin puanlaması ise şu şekilde yapıldı: Katılımcılar her doğru cevap için 2 puan aldı, yanlış cevaplardan ise hiç puan alamadılar. Katılımcıların alabilecekleri maksimum puan 24'tü. 2 puan alabilmenin tek şartı ise verdikleri cevaplarda Olumsuz Zarf + Yardımcı Fiil + Özne diziliminin kullanılmış olmasıydı. Bunun dışında kalan herhangi bir dilbilgisel konu dikkate alınmadı.

3.8 Veri Analizi

EG1 ve EG2'ye uygulanan dilbilgisi karar testi ve üretme testinin sonuçları CG'ninkilerle karşılaştırıldı. İlk önce ön testlerin ham puanlarına Tek Yönlü Varyans Analizleri uygulandı. Öğretimin etkililiğini ve uzun vadeli sonuçlarını ölçmek için ise ön test ve art sınav puanlarına Tekrarlanan Varyans Analizleri uygulandı. Ancak analizlerdeki kural ihlalleri nedeniyle varyans analizleri yerine parametrik olmayan testler kullanıldı.

4. Bulgular

İlk önce, uygulama öncesi üç grup arasında anlamlı farklılıklar olup olmadığını görmek için normallik varsayımı gerektirmeyen ve parametrik olmayan "Kruskal-Wallis H testi" kullanıldı. Daha sonra, İÖ etkisini ve bu etkinin uzun vadeli olup olmadığını öğrenmek için ayrı ayrı parametrik olmayan testler uygulandı. İÖ'nün gruplar arasındaki etkilerini ölçmek için "Welch test" ve "Games-Howell post hoc test"leri uygulandı. Her bir grubun ön testten art testteki gelişimini değerlendirmek için *t-testi*nin parametrik olmayan karşılığı olan "Gruplar arası Wilcoxon Signed-Rank testi" kullanıldı. İÖ'nün uzun vadeli etkilerini ölçmek için ise "Friedman testi" uygulandı. Son olarak, yeniden maruz bırakma etkilerini ölçmek için de bağımsız *t-testi*nin parametrik olmayan alternatifi olan "Mann Whitney U testi" kullanıldı.

4.1 Uygulama Öncesi Dilbilgisi Karar Testi Bulguları

Kruskal-Wallis H Testi sonuçlarına göre, grupların test sonuçlarının ortalama değerleri, EG1 (M = 36,2), EG2 (M = 30,7) ve CG (M = 32) olmak üzere birbirine

yakındı. Kruskal-Wallis H test istatistiği, H (2) = 1.037, p = .595, gruplar arasında istatistiksel olarak anlamlı bir fark olmadığını gösterdi.

4.2 Uygulama Öncesi Üretme Testi Bulguları

Sonuçlara göre, grupların ortalamaları EG1 (M = 37,3), EG2 (M = 29) ve CG (M = 32,6) olmak üzere birbirine yakındı. Kruskal-Wallis H testindeki p-değeri de, H (2) = 2.540, p = .281, üç grup arasında istatistiksel olarak anlamlı bir farklılık olmadığını gösterdi.

4.3 Ön ve Art Sınav Bulguları

4.3.1 Uygulama Sonrası Dilbilgisi Karar Testi Sonuçları

Welch testi sonuçları, çok kısa zamanlı art sınav için, Welch's F (2, 41.17) = 121,3, p <.05; ilk gecikmiş art sınav için, Welch's F (2, 39.45) = 55.83, p <.05 ve son gecikmiş art sınav için, Welch's F (2, 33.56) = 225,9, p <.05 olmak üzere anlamlıdır. Sonuçlar, grupların ortalama dilbilgisi karar testi puanları bakımından farklılık gösterdiğini ortaya koydu. Welch testi sonuçları anlamlı çıktığı için, post-hoc test olarak Games Howell testi kullanıldı. Buradaki amaç grupların dilbilgisi karar testi puanları açısından nasıl farklılaştığını bulmaktı. Test sonuçları, çok kısa süreli art sınavda EG1 ve EG2'nin arasında anlamlı bir fark olmadığını, p = .400, >.05, fakat CG ile aralarında anlamlı bir fark bulunduğunu, p = .000, <.05, gösterdi. Söz konusu test, ilk art sınav için de benzer sonuçlar ortaya koydu. EG1 ve EG2'nin test sonuçları istatistiksel olarak anlamlı olmadığı halde, p = .834, >.05, CG'nin test sonuçları, EG1 ve EG2'den anlamlı olarak farklıydı, p = .000 <.05. İkinci art sınav sonuçlarında ise, tüm gruplar birbirinden anlamlı derecede farklı performans gösterdiler, p = .000 <.05.

Wilcoxon Signed Rank testi ise hangi grup ya da grupların DOZ yapılarını yorumlama yeteneklerinde ön testten art sınavlara kadar önemli ölçüde iyileşme olduğunu görmek için her bir grubun ön test ve çok kısa süreli art sınav sonuçları arasında yürütüldü. Sonuçlar, her iki deney grubunun da İÖ'den sonra anlamlı şekilde ilerleme kaydettiğini gösterdi. EG1 ve EG2 grubundaki tüm katılımcıların çok kısa süreli art sınav puanları, ön test puanlarından yüksekti. Test, İÖ'nün, EG1

(Z = -4.122, p = .000) ve EG2'nin (Z = -4.115, p = .000), CG'ye kıyasla (Z = -1.512, p = .131) DOZ yapılarını yorumlamada önemli bir değişiklik yaptığını ortaya koydu. İÖ'den sonra EG1'in ortalaması *M* = 7,8'den *M* = 16,5'a; EG2'nin ortalaması *M* = 7,1'den *M* = 15,6'ya çıkarken İÖ'ye tabi tutulmayan CG'ninki ise yalnızca *M* = 7,3'ten *M* = 7,6'ya yükselmiştir.

İÖ'nün uzun vadeli yorumlama etkilerini test etmek için EG1 ve EG2'nin çok kısa süreli ve gecikmiş art sınavlarından aldıkları ham puanlara Friedman testi uygulandı. Testler arasındaki fark, EG1 için de X2 (2) = 30.530, p = .000; EG2 için deX2 (2) = 40.667, p = .000, anlamlıydı. Tam olarak bu farkların hangi testlerde oluştuğunu bulmak için her grup için art sınav sonuçlarının farklı birleşimleri üzerinde Wilcoxon Signed Rank testi yürütüldü. Çoklu karşılaştırmalar yapmak için de Bonferroni ayarlamaları yapıldı. Buna göre de yeni p değeri 05/3 = *.016* oldu. EG1 sonuçlarına bakıldığında çok kısa süreli art sınav ve ilk gecikmeli art sınav arasında (Z = -3.933, p = .000) ve ilk ve son gecikmeli art sınav arasında (Z = -4.036, p = .000) istatistiksel olarak bir fark gözlendi. Her iki durumda da ilk gecikmeli art sınav ortalamalarının daha yüksek olduğu görüldü. Aynı şekilde EG2 sonuçlarında da çok kısa süreli art sınav ve ilk gecikmiş art sınav arasında anlamlı farklar vardı(Z = -3.638, p = .000) ve ilk gecikmeli sınav ortalamaları bu grup için de daha yüksekti. Gecikmiş art sınavların ikisi arasında da anlamlı farklar vardı ve ilk sınavın ortalama sonuçları daha yüksekti(Z = -3.932, p = .000).

Son olarak, İÖ'ye yeniden maruz bırakma etkilerinin DOZ yapılarının yorumlanması üzerindeki etkileri Mann Whitney U testi kullanılarak incelenmiştir. Yeniden İÖ'ye maruz bırakılan EG1'in test sonuçları İÖ'yü yalnızca bir kez alan EG2'nin sonuçları ile karşılaştırılmıştır. Sonuçlar, EG1 sonuçlarının EG2'den istatistiksel olarak daha yüksek olduğunu göstermiştir(U = .000, p = .000). Ortalama değerlere bakıldığında da benzer sonuçlar ortaya çıkmıştır: EG1 için *M* = 33,5 ve EG2 için *M* = 11,5.

4.3.2 Uygulama Sonrası Üretim Testi Sonuçları

Welch's F testi sonuçları üç grup arasında da çok kısa süreli art sınav ve gecikmeli art sınav sonuçlarında istatistiksel olarak anlamlı farklar ortaya koydu. Bu oranlar, çok kısa süreli art sınav için Welch's F (2, 37.06) = 187,3, p <.05; ilk gecikmeli art sınav için, Welch's F (2, 36.86) = 229,2, p <.05 ve ikinci gecikmeli sınav için

Welch's F (2, 38.96) = 389,6, p <.05'dir. Post Hoc Games Howell testi sonuçları ise hem EG1 ve CG hem de EG2 ve CG arasında p = .000, <.05 olmak üzere çok kısa süreli art sınavlar ve gecikmeli art sınav sonuçlarında anlamlı farklılıklar olduğunu gösterdi. EG1 ve EG2 arasında ise anlamlı farklılık görülmedi.

Wilcoxon Signed Rank testi, EG1 ve EG2'nin çok kısa süreli art sınav sonuçlarının (Z = -4.126, p = .000) ön test sonuçlarından (Z = -4.130, p = .000) yüksek olmak üzere aralarında istatistiksel olarak anlamlı farklılıklar olduğunu ortaya koydu. Yine, EG1'in ve EG2'nin ortalama değerleri İÖ'den sonra *M* = 7,6'dan *M* = 18,1'e yükselirken, eğitim almayan CG'nin ortalama değerleri testten çok kısa süre sonra bir iyileşme göstermedi.

İÖ'nün uzun vadeli üretme etkilerini ölçmek için uygulanan Friedman testine göre, EG1'in çok kısa süreli ve gecikmiş art sınavlarının sonuçları arasında istatistiksel olarak anlamlı farklar, X2 (2) = 8.909, p = .012, vardı. EG2 için ise *p* değeri .05'e yakındı: X2 (2) = 5.200, p = .074. Farklılıkları bulmak için post hoc test olarak Wilcoxon Signed Rank testi uygulandı. Çoklu karşılaştırmalar için Bonferroni ayarlamaları kullanıldı ve yeni *p* değeri, .05/3= .016 olarak hesaplandı. EG1'in çok kısa süreli art sınav ve ilk gecikmeli art sınav sonuçları arasında anlamlı bir fark yoktu (Z = .000, p = 1.000). Fakat çok kısa süreli art sınav ve ikinci gecikmeli art sınav sonuçları arasında ayrıca iki gecikmeli art sınav sonuçları birbirine eşit(p = .026) ve Bonferroni düzeltmelerinden sonraki *p* değerine (.016) yakındı. EG1'in yaklaşık yarısı (N = 9) ikinci gecikmeli art sınavda diğer sınavlardan daha iyi performans gösterdi.

İÖ'nün yeniden maruz bırakma etkilerini ölçmek için EG1'inve EG2'nin ikinci gecikmeli art sınav sonuçları Mann Whitney U testi kullanılarak karşılaştırıldı. Sonuçlar, anlamlı bir fark olmadığını gösterdi. Öte yandan, EG1'in ortalama değerleri (M = 25,4), EG2'ninkinden(M = 19,5) daha yüksek olduğundan İÖ'ye yeniden maruz bırakma işleminden sonra EG1'in daha iyi bir performans gösterdiği anlaşıldı.

5.Tartışma ve Sonuç

Bu bölüm, çalışmanın sonuçlarının araştırma soruları ile bağlantılı olarak tartışılması ile başlar. Bunu, araştırmanın pedagojik etkileri takip eder ve sonuçlarla sona erer.

5.1 Araştırma Sorularıyla İlişkili Sonuçların Tartışılması

Araştırma Sorusu 1: İÖ, İngilizce DOZ yapılarının yorumlanması ve üretilmesini olumlu bir şekilde etkileyebilir mi?

Cümle seviyesindeki yorumlama ve üretim testi sonuçları, İÖ'nün DOZ yapıları üzerinde olumlu bir etkiye sahip olduğunu gösterdi. İÖ'ye maruz bırakılan her iki deney grubu da testleri eşit derecede iyi yaptı. Aldıkları test puanları, İÖ'ye maruz bırakılmayan CG'nin sonuçlarından belirgin şekilde iyiydi.

Bu sonuçlar, daha önceki İÖ ve diğer öğretim yöntemlerinin kıyaslandığı ve İÖ'nün diğer yöntemlere göre genel olarak üstün olduğunu gösteren sonuçlarla tutarlıydı (örn: Benati, 2001, 2005; Cadierno, 1995; Cheng, 2002; Farley, 2001a, 2004; VanPatten & Cadierno, 1993b). Mevcut çalışma, İÖ'yi diğer yöntemlerle karşılaştırmamış olsa da, deney gruplarının test sonuçlarının İÖ almayan gruba göre hedef dilbilgisi yapısının edinimi üzerinde kolaylaştırıcı bir etkiye sahip olduğunu gösterdi.

Çalışmanın sonuçları, ayrıca İÖ'nün etkilerinin test edildiği diğer İÖ çalışmalarının (örn: Hikima 2011; Benati, 2015) sonuçlarını da desteklemiştir. Söz konusu çalışmalarda, bu çalışmada olduğu gibi, İÖ grubunun ve İÖ'ye yeniden maruz bırakılan grubun test sonuçları eğitim görmeyen grupla kıyaslanmıştır ve sonuçlara göre her iki deney grubu da Japoncadaki edilgen yapıları üretme ve yorumlama becerilerinde İÖ'den sonra ilerleme kaydetmiştir. Bu sonuçlar, farklı dil geçmişine sahip öğrenicilerin İÖ yoluyla çeşitli dil yapılarını edinebileceği anlamına gelebilir.

Bu çalışmada, önceki bazı İÖ çalışmalarından (örn: Birjandi, Maftoon ve Rahemi, 2011; Morgan-Short & Bowden, 2006; Toth, 2006) farklı olarak, öğrenicilerin, üretim testlerinde, yorumlama testine göre biraz daha yüksek bir başarıya sahip olduğu gösterildi. Her ne kadar İÖ girdi-tabanlı bir eğitim türü olup, öğrenicilerden de İÖ sırasında hedef dilbilgisi yapısını üretmeleri istenmemesine rağmen, İÖ

gruplarının CG'ye kıyasla üretim kabiliyetlerindeki iyileşme, İÖ'nün önemli bir katkısıdır. Bu kanıt, İÖ'nün, gelişmekte olan sistemi ve ardından çıktıyı etkileyecek bir alım olmadan önce, girdideki işlemleme mekanizmalarını etkilediğini göstermektedir.

Tüm bu çalışmalar, İÖ'nün öğrenicilerin biçim-anlam ilişkisi kurmalarına yardımcı olabileceğini düşündürtmektedir. Bu şekilde, öğreniciler ikinci dil ediniminin ilk aşamasında hem anlam hem de dil yapılarına veya formlarına dikkat edebilirler. Dil form ve yapılarını İÖ ile öğretmek öğrenicilerin bunları anlama sırasında doğru biçimde işlemlemesine yardımcı olabilir. Ayrıca, şimdiye kadarki çalışmalar ekseriyetle İÖ'nün başlangıç ve orta düzey dil öğrenicilerinin performanslarını geliştirdiğini gösterdi. Bu çalışma ise, alan yazına, İÖ'nün ileri düzey dil öğrenicilerinin daha karmaşık yapıları edinmede de iyileştirici etkisi olabileceğini düşündüren yeni bir katkı sağlamış oldu.

Araştırma Sorusu 2:İÖ, öğrencilerin kazanımlarını uzun vadede korumasına yardımcı olabilir mi?

EG1 ve EG2'nin ilk uygulanan gecikmeli yorumlama testi sonuçlarında düşüş gözlendi. Üretim testi sonuçları ise, İÖ'nün öğrenicilerin üretim yetenekleri üzerinde uzun vadeli bir etkisi olduğunu gösterdi.

Sınırlı sayıda çalışma, İÖ'nün uzun vadeli etkilerini ölçmeye çalışmıştır (Benati, 2001; Birjandi, Maftoon ve Rahemi, 2011; Cadierno, 1995; Farley, 2001a, 2001b; Morgan-Short & Bowden, 2006; Qin, 2008; Toth, 2006; VanPatten & Cadierno, 1993b) ve bu çalışmalardaki gecikmeli art sınavlar, eğitimden sonra bir hafta ile dört hafta arasında değişen sürelerde verildi. Çalışmaların çoğu, dört haftadan sonra İÖ'nün etkilerinde ufak düşüşler olduğunu ortaya koydu. Diğer birkaçı ise, üretim test sonuçlarında önemli düşüşler gözlemledi. Bu yüzden mevcut çalışma sonuçları, bahsedilen önceki çalışma sonuçlarını destekler nitelikte değildi. Ancak tüm çalışmalarda ortak olarak İÖ'nün uzun vadeli etkilerinde düşüşler gösterildi.

İÖ'nün etkilerini dört haftadan daha uzun zaman sonra test eden alan yazında sadece birkaç çalışma vardı (örn. VanPatten & Fernandez, 2004; VanPatten, Inclezan, Salazar & Farley, 2009) ve bu çalışmalar farklı sonuçlar ortaya koydu. VanPatten ve

Fernandez (2004),İÖ'nün uzun süreli etkilere (sekiz aya kadar) sahip olduğunu gösterirken VanPatten ve arkadaşları (2009) çalışmalarında, İÖ'den altı hafta sonra öğrencilerin performanslarında bir düşüş olduğunu gösterdi. Mevcut çalışma VanPatten ve arkadaşlarının (2009) bulduğu sonuçlara benzer sonuçlar elde etti.

Çalışmada ortaya çıkan yorumlama testlerinde yaşanan düşüşün nedeni, İÖ'nün kısa tutulması olabilir. Toplamda dört saat süren İÖ, öğrenicilerin yorumlama yeteneklerinin kalıcı olmasına yeterli gelmemiş olabilir. Üretme test sonuçlarının görece kalıcı olmasının açıklamalarından biri, bu testlerin yorumlama testlerine kıyasla hatırlanması daha kolay olması olabilir çünkü toplam 24 sorunun 12'si hedef maddeyi içeriyordu. Yorumlama testinde ise 40 maddeden 12'si hedef maddelerden oluşuyordu. Ayrıca üretim testlerinde öğreniciler cümleleri tekrar tekrar okumak ve cümleler arasında gezinmek için daha fazla vakit bulmuş olabilirler. Bu da yine hatırlanmalarını kolaylaştırmış olabilir. Bir başka muhtemel açıklama ise Shintani (2015)'in ortaya koyduğu "transfere uygun işlemleme" etkisi olabilir. Dilbilgisi karar testi özel bir test aracı türüdür ve öğreniciler bu teste aşina olmayabilirler. Öte yandan, üretim testindeki sorular İÖ'deki yapılandırılmış girdi aktivitelerine daha çok benzerlik göstermiş olabilir. Bu da bizi, katılımcıların bu etkinliklere ilişkin deneyimlerini üretim testlerine aktardıkları varsayımına götürebilir. Böylece, önceki çalışmalar ve mevcut çalışma, ölçme testlerinin türü ile İÖ'nün uzun vadeli olması arasında bir bağlantı kurulabileceğini gösterdi.

Araştırma Sorusu 3: İÖ'ye yeniden maruz kalan öğrenciler, İngilizce DOZ yapılarını yorumlama ve üretmede yalnızca İÖ grubundan daha iyi olabilir mi?

Sonuçlar, İÖ'ye yeniden maruz bırakılan öğrencilerin DOZ yapılarını yorumlama ve üretmede İÖ'ye bir kez maruz bırakılan gruptan daha iyi olduklarını gösterdi. Bu sonuçlar, daha önceki çalışmaların sonuçları ile tutarlılık gösterdi. Hikima (2011) ve Benati (2015), bu çalışmadan farklı olarak İÖ'ye yeniden maruz bırakmanın "İlk önce Ad İlkesi"ne dayanan etkilerini inceledi. Bu çalışmaların ve mevcut çalışmanın bulguları İÖ'ye yeniden maruz bırakılmanın, öğrenicilerin farklı İÖ ilkelerinden etkilenen hedef maddeleri yorumlama ve üretme yeteneklerini daha da geliştirmesine yardımcı olabileceğini gösterdi.

Benati ve Lee (2008)'nin "Güçlendirme Hipotezi"ne göre, "aynı işlemleme ilkelerine hitap eden çoklu İÖ alan ikinci dil öğrenicileri, ikinci dil girdisini işlemlemeleri için varsayılan strateji haline gelene kadar, en uygun işlem stratejisini kullanımlarını giderek güçlendirecektir"(s.173). Mevcut çalışmadaki bulgular, bu hipotezi destekler niteliktedir. Andersen (2015) de, tekrarlanan uygulamaların bellek gücüne yardımcı olabileceğini belirtmiştir. Bu bakımdan, İÖ'ye yeniden maruz bırakma, girdinin işlenmesini nispeten kalıcı olarak etkileyebilir. Bu da öğrenmeyi güçlendirebilir.

5.2 Eğitimsel Çıkarımlar

İÖ'nün çalışmada gösterilen olumlu etkileri, dilbilgisi öğretiminde öğrencilerin biçim-anlam bağlantıları kurmaları için hem biçime hem de anlama dikkatlerini yönlendirmenin mümkün olabileceğini göstermektedir.

İÖ, özellikle anadili(örn. Türkçe) ve hedef dili (örn. İngilizce) uyuşmayan dil öğretim ortamlarında dilbilgisi öğretirken yardımcı olabilir. Öğretmenler, ikinci dil edinimindeki ilk aşama olan girdi işlemleme evresine İÖ yöntemiyle müdahalede bulunarak öğrenicilere olası tıkanıklığın üstesinden gelmelerine yardımcı olabilirler. Böylece, Türkiye gibi geleneksel, çıktı temelli bir dilbilgisi öğretim yaklaşımının yaygın olarak kullanıldığı ülkelerde, bilişsel işlemleme stratejilerine dayanan ve yapılandırılmış aktivitelerden oluşan bir yöntem kullanılarak öğrenicilerin girdilere verdikleri dikkatlerin yolları değiştirilebilir.

Öğreniciler, İÖ'ye birden fazla maruz bırakıldıklarında dilsel öğeleri hatırlayabilirler ve bilgilerini güçlendirebilirler. Dolayısıyla, sınıflarda dilsel öğelere daha çok maruz bırakılmaları önemlidir bu da öğrenmeyi geliştirebilir. Öğretmenler İÖ'yü sınıflarında kullanacak şekilde eğitilebilirler ve aynı işleme stratejilerini ele alan dilbilgisi konularında İÖ'yü kullanmaya teşvik edilebilirler.

İkinci dili öğrenmeye yeni başlayan veya orta yeterlik seviyesinde olan öğrenicilerin çeşitli dil biçim veya yapılarını edinmesinde İÖ'nün olumlu etkileri gösterilmiştir. Bu çalışma da ileri düzey dil öğrencilerinin görece nadir kullanılan ve karmaşık bir dilsel yapıyı İÖ sayesinde işlemleyebileceğini ve doğru bir şekilde üretebileceğini gösterdi.

Şimdiye kadar dilbilgisi konuları katılımcılara,“Sunum, Uygulama ve Üretim” yaklaşımı ve tümdengelim yolu ile öğretildi. Bu nedenle, İÖ, bu öğrenicilere farklı bir öğrenme tecrübesi yaşatan yeni bir yöntemdi. Çalışma, girdi temelli bir öğretim modelinin, hedef dile hâkim olan öğreniciler için geçerli ve yararlı olduğunu ortaya koydu. Bu bağlamda, ikinci dil eğitimi ilkelerini oluşturanlar ve öğretmenler, özellikle yoğun öğretim gerektiren dilbilgisi konularını öğretirken, öğrenme sürecini kolaylaştırmak için, İÖ'yü ve onun yeniden maruz bırakma etkilerini gündemlerine almalıdırlar.

5.3 Sonuç

Bu çalışma, İÖ'nün DOZ yapılarının yorumlanması ve üretilmesi üzerindeki kısa ve uzun vadedeki etkilerini test etmeyi amaçlamıştır. Ayrıca, İÖ'nün yeniden maruz bırakma etkilerini de incelemiştir.

Çalışmanın sonuçları, önceki İÖ araştırma alan yazınını desteklemiş ve öğrencilerin İÖ sayesinde cümle düzeyindeki yapıları yorumlama ve üretme becerilerini geliştirdiklerini göstermiştir. İÖ, dilbilgisi öğretiminde kullanılan girdi temelli bir yaklaşım olarak, öğrencilerin biçim-anlam bağlantıları kurmalarına yardımcı olan temel işlemleme stratejilerini manipüle ederek öğrenmeyi kolaylaştırabilir. İÖ'nün uzun vadeli etkileri ise gelecek çalışmalarda ayrıntılı bir şekilde ele alınmalıdır.

Sonuçlar, İÖ'nün bu tür çalışmalarda ilk kez test edilen DOZ yapılarını anlamada ve üretmede etkili olduğunu gösterdi. Buna ek olarak, çalışma, ileri düzey İngilizce konuşucularının katılımıyla İÖ araştırmasına yeni deneysel veriler sağladı. İÖ'nün bu öğrencilerin dil gelişimi üzerindeki olumlu etkileri, dilbilgisi öğretiminde daha üst seviyedeki öğrencilere de yararlı bir yaklaşım olabileceğini ortaya koymuştur. Bu nedenle, sonuçlar ikinci dil edinimi ve dil öğretim alanına katkıda bulunmuştur.

Çalışma, İÖ araştırmalarında nispeten yeni bir değerler dizisi olan İÖ'nün tekrar maruz kalma etkilerini de incelemiş ve öğrencilerin İÖ'ye birden fazla maruz kaldıklarında hedef dilsel öğeyi yorumlayabilme yeteneklerini geliştirebildiklerini göstermiştir.

Appendix H: Tez Fotokopisi İzin Formu

ENSTİTÜ

Fen Bilimleri Enstitüsü	
Sosyal Bilimler Enstitüsü	X
Uygulamalı Matematik Enstitüsü	
Enformatik Enstitüsü	
Deniz Bilimleri Enstitüsü	

YAZARIN

Soyadı : Yapıcı
Adı : Burçin
Bölümü : Yabancı Diller Eğitimi (İngiliz Dili Eğitimi A.B.D)

TEZİN ADI (İngilizce) : Measuring Re-exposure and Long-term Effects of Processing Instruction on the Acquisition of Negative Adverbials of Inversion

TEZİN TÜRÜ : Yüksek Lisans [ ] Doktora [X]

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. [ ]
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. [ ]
3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz. [X]

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: