



## EFFECT OF EXPLICIT AND IMPLICIT INSTRUCTION ON IMPLICIT KNOWLEDGE OF ENGLISH PAST SIMPLE TENSE

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### ABSTRACT

*This study examined the effect of explicit and implicit instruction on second language learners' implicit knowledge of English past simple tense. Fifty-nine intermediate Persian learners of English took part in this study receiving either explicit or implicit instruction about the grammatical feature at classroom setting. Their ability to use the structure was measured at three times through a timed grammaticality judgment task and an elicited oral imitation task. Data was analyzed using ANOVA. Results showed explicit and implicit instruction promoted the use of the target structures in both timed grammaticality judgment task and elicited oral imitation task equally effectively. Findings of this study do not support superiority of explicit instruction over implicit instruction in promoting second language implicit knowledge.*

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**Keywords:** Implicit instruction, Explicit instruction, Implicit knowledge.

### Contribution/ Originality

This study is one of very few studies which have investigated the effectiveness of explicit and implicit instruction on implicit knowledge using valid measures.

## 1. INTRODUCTION

One of the issues within form-focused instruction (FFI) which has received a lot of attention is explicit and implicit instruction (Norris and Ortega, 2000; Spada and Tomita, 2010). Explicit instruction (EI) involves drawing learners' attention to the rules of target feature which is usually done through rule explanation (DeKeyser, 1995; Ellis, 2006). In implicit instruction (II) however, there is no attempt to direct learners' attention towards the rules nor is there any rule explanation. Instead learners have to infer the rules from the exemplars provided (Norris and Ortega, 2000);(DeKeyser, 1995; Ellis, 2005). Research shows that explicit instruction is more beneficial than implicit instruction (Norris and Ortega, 2000; Spada and Tomita, 2010). However, this

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conclusion holds true until one examines the effect of EI and II without taking the type of knowledge resulted from instruction into consideration. In fact how different types of instruction influence explicit and implicit knowledge remains controversial. Explicit knowledge is considered to be conscious, verbalizable and available through controlled processing. While implicit knowledge is tacit, procedural and available through automatic processing (Ellis, 2005). A distinction should be drawn between E/I learning and E/I knowledge. The former refers to the process underlying learning, but the latter refers to product of learning. Norris and Ortega (2000) in a meta-analysis studied the effect of different types of instruction on linguistic features. They found EI more effective and lasting than II. The same result was repeated for the meta-analysis conducted by Spada and Tomita (2010). However there are studies in the literature that indicate there is no difference between EI and II (Andringa *et al.*, 2011; Herna'ndez, 2011). The main reason for the discrepancy is related to the measures which were used to test the knowledge gained through different types of instruction. It is generally believed that measures used for examining relative effectiveness of EI and II are designed in a way that favors explicit knowledge rather than implicit (Ellis, 2005). Doughty (2003), for instance, argues that effect of EI is overestimated and recommends that further studies with implicit knowledge measures be conducted before to be able to decide on the superiority of EI over II. DeKeyser (2003) comparison of 14 papers conducted in classroom and laboratory setting on the effectiveness of EI and II showed that EI was significantly more effective than II. However he admitted that none of the tests used in the papers measured implicit knowledge. In the same vein, Ellis (2005) analyzed the measures used in the studies reviewed by Norris and Ortega (2000). He found that of 49 studies selected for review only 8 studies used implicit knowledge measure and the rest relied on discrete point or declarative knowledge-based tests which originally tap into explicit knowledge. To provide appropriate measures of these two types of knowledge, Ellis (2005) conducted a study using a principal component factor analysis, he found that (a) an oral imitation test, (b) an oral narration test, and (c) a timed grammatically judgment test load into implicit knowledge factor and (d) an untimed grammatically judgment test and (e) a meta-linguistic knowledge test into explicit knowledge. Since then few studies have been conducted on EI/II. Before moving on the literature review, looking into relationship between explicit and implicit knowledge seems necessary.

Relationship between explicit and implicit knowledge is referred to as the interface issue in the literature. The way and the extent to which explicit and implicit knowledge are related, possibility of explicit knowledge to be changed into implicit knowledge and effect of EI on implicit and explicit knowledge are among the main concerns of the interface issue (Ellis, 2005). SLA researchers take different positions with respect to these questions. One view is the non-interface position which stresses on complete dissociation between explicit and implicit knowledge. Proponents of this position (Krashen, 1982; Ellis, 1993) believe that the acquisition mechanism, accessibility and even the part of the brain that this knowledge is stored are different and there can't be any conversion from explicit knowledge to implicit and vice versa. The second position is called strong interface position where explicit knowledge can be extracted from implicit knowledge. Based on this view, explicit knowledge can be converted into implicit knowledge through practice (Sharwood Smith, 1981; DeKeyser, 1998; 2007). The third stance known as weak interface

position is based on "learnability" theory of [Pienmann \(1989\)](#) which states that explicit knowledge can be converted into implicit knowledge when one is developmentally ready.

### 1.1. Previous Studies

A number of studies have so far investigated the effect of EI and II on linguistic features ([Norris and Ortega, 2000](#); [Spada and Tomita, 2010](#)). However, as mentioned above, most of these studies suffer from using dependable measures of explicit and implicit measures. Therefore we restrict the review to the studies that have recently been done and have employed reliable tests.

[Akakura \(2012\)](#) studied effects of EI and II on explicit and implicit knowledge of generic and non-generic English articles. Participants received instruction on English articles through CALL activities and their explicit and implicit knowledge of articles was tested immediately and six weeks after treatment using elicited imitation, oral production, grammaticality judgment, and meta-linguistic knowledge tests. Result showed that explicit instruction had durable effect on implicit knowledge and ungrammatical items of explicit knowledge.

[Herna'ndez \(2011\)](#) studied combined effect of explicit instruction and input flood and input flood alone on the use of discourse markers through narration of an event. Ninety one fourth semester learners of Spanish were divided into three groups of explicit plus input flood, input flood and the control groups. The EI plus input flood group received explicit explanation on discourse markers as well as feedback on their use of these markers during communicative task performance. The Input flood group did the same communicative activities as EI plus input flood group, but without rule explanation and feedback. After receiving treatment, the participants' use of discourse markers were assessed through both immediate and delayed post-test. The Result did not show significant difference between explicit and implicit group.

[Toth and Fuentes \(2012\)](#) compared effects of explicit and implicit instructions on implicit knowledge. Thirty five high school students participated in this study. Explicit group received 270 min of explicit instruction on the Spanish clitic *se* while control group only practiced the target feature implicitly. Students' knowledge of the target feature was assessed immediately and after six weeks through picture description and audio GJT. Result showed positive effects for explicit instruction which confirms permeability of implicit knowledge to explicit instruction (interface).

[Fordyce \(2014\)](#) has investigated effects of EI and II on L2 pragmatics. Eighty one Japanese learners of English were divided into two groups and received instruction on epistemic instance forms. The instruction took about three hours and learners were tested through two writing tasks: descriptive and opinion giving both immediately and four months later. Explicit intervention was found to be significantly more effective than implicit instruction both in short and long terms. However this was true only for the forms that existed in learners' language before instruction took place. For the newly emerged forms, EI and II were found equally effective. Although this study shows superiority of EI, tasks used are naturally in favor of explicit knowledge.

Review of literature shows that more research using implicit knowledge measures is required to reach a conclusion on effectiveness of EI over II. Also interaction between explicit and implicit instruction and different types of linguistic features remains unresolved ([Spada and Tomita, 2010](#)). This study is aimed to fill the gap by answering the following questions:

The goal of this study is to answer the following questions:

1. What is the effect of explicit instruction on implicit knowledge of English past simple tense as measured by TGJT and EOIT?
2. What is the effect of implicit instruction on implicit knowledge of English past simple tense as measured by TGJT and EOIT?

## 1.2. The Present Study

### 1.2.1. Participants

Fifty nine Persian learners of English studying English at a private language institute in Iran participated in this study. They were considered to be of lower-intermediate proficiency level based on the institute's criteria and their current English class they were at. However, to be sure of their homogeneity Oxford Placement Test 2 grammar part was administered (Allan, 1992). Their score was reported on a scale of 100 points. Result showed that they are homogenous; their score ranged between 39 and 47. Participants were between 13-19 years old both male and female. None of them had the experience of being in an English speaking country and their use of English was limited to classroom context. Participants were randomly assigned to one of explicit or implicit groups.

## 1.3. Instructional Materials

### 1.3.1. Explicit and Implicit Instruction

Implicit instruction is defined as activities that enable learners to infer rules without awareness (DeKeyser, 1995; Housen and Pierrard, 2006). This can be achieved by exposing learners to the exemplars of a rule without focusing their attention on the form (Ellis *et al.*, 2009). Following previous studies (Ellis *et al.*, 2009);(Norris and Ortega, 2000);(Housen and Pierrard, 2006); (DeKeyser, 1995); (Spada and Tomita, 2010) we used a text enriched with the target form. Explicit instruction involves rule explanation where the goal is to develop meta-linguistic knowledge of a rule. Details of the explicit and implicit instruction are given below. Each lesson began by a comprehension text enriched with the target language feature. The instructor read the text while participants listened to it. Then participants were asked to find the meaning and supporting ideas. After that, grammatical explanations related to the target feature were presented by the instructor. Then the participants were asked to find the examples of the target feature in the text. This was followed by doing multiple choice exercises with focus on the target feature. Then participants did whole-class guided speaking under instructor's supervision and later in small groups through which they practiced the target structure rules and received feedback from teacher when necessary. Details of activities performed during the class time for explicit group is shown in Table 1.

Table-1. Description of the lessons

Time	Task	Goal
5 min	1. Pre-reading	Familiarize with the content of text
15 min	2. Reading the text	Processing text content; exposure to target features
15 min	3. Grammar explanation	Provide the rule for the target feature
		<i>Continue</i>

10 min	4. Grammatical Analysis	Find examples of the target feature in the text
10 min	5. Multiple choice exercises	To practice the target feature
15 min	6. Guided speaking	Instructor-guided communicative activities to
10 min	7. Information exchange (small group)	Independent communicative practice using the target feature

The same comprehension texts were used for implicit treatment. However, there was no grammatical explanation of the target feature rules. Also there were not any exercises focusing on the target features. Learners listened to the instructor while the text was being read by the instructor. Then they were asked to read the text and find the essential meaning and supporting ideas. They were told to guess the meaning of unknown words. Learners did communicative activities without receiving any feedback from instructor on the target feature.

#### 1.4. Instruments and Procedures

Three versions of the same TGJT and EOIT tests were prepared. Then a version of the TGJT and EOIT were administered as a pre-test before giving treatment. After that, each group received relative treatment for two sessions. Post-test one was administered immediately after instruction finished and the second post-test was taken two weeks after the first one.

Both tests were performed individually with the aid of computer by the researcher being present at all sessions. Administration of the tests through computer was of great importance for keeping the test condition constant for all subjects. This was especially of great importance for TGJT where time for each item varied. Instructions for tests were given in participants' native language and two extra items were put at the beginning of each test to familiarize participants with testing condition. Data from each test was recorded in a separate database.

#### 1.5. Elicited Oral Imitation Task (EOIT)

This task contained 6 sentences, half grammatical and half ungrammatical distributed randomly over the test. Content of the sentences were in a way that one could agree or disagree with them. Pre-recorded sentences were presented orally, each time one sentence. First a participant was required to say whether he agrees or disagrees with the content of the sentence by pressing Agree or Disagree button on the computer screen. This was done to focus their attention on meaning rather than form Ellis *et al.* (2009). After judging on its content, they were required to repeat the sentence in the correct form. Their responses were recorded by computer, transcribed and obligatory context for the target feature was identified. Correctly supplied context was given 1 point and incorrect suppliance or avoidance of target feature use was given 0.

#### 1.6. Timed Grammaticality Judgment Test (TGJT)

This test contained 8 sentences, half grammatical and half ungrammatical distributed randomly, which were presented in written form through computer. Participants were required to decide whether each sentence was grammatically correct or incorrect by pressing one of the options on the computer screen within a fixed time. Time limit for each sentence varied from 4-7 seconds according to its length and complexity. Time limit was set through a pilot study. A group of

students other than subjects with the same level of English proficiency and characteristics were asked to answer the questions and judge about their response time. After making some adjustments, challenging time for each sentence reported by pilot group was set as a response time. Instructions for the test were given in the participants' native language. Two sentences were added to the beginning of the test for training purpose. Each sentence judged correctly was given 1 and the sentence judged incorrectly or left unanswered was given zero. Then percentage accuracy score was calculated. Reliability (Cronbach's alpha) estimated for the test was 0.785.

## 2. RESULT

Data were analyzed using SPSS package. Descriptive statistics for both explicit and implicit groups are given in Table 2. An independent samples *t-test* was run to see if there was a significant difference between EI and II groups at the beginning of the experiment. Result showed no difference for TGJT,  $t(60) = 0.364$ ,  $p = 0.714 \geq 0.05$ ; nor for EOIT,  $t(58) = 0.438$ ,  $p = 0.663 \geq 0.05$ .

For both TGJ and EOI, a 2(conditions)  $\times$  3 (times measurement) repeated measure ANOVA was used to compare EI and II groups' performance over time. Result showed significant main effect for past-tense feature over time for both TGJ and EOI tasks :TGJ:  $F(2, 51.63) = 20$ ,  $p < 0.01$ , with effect size of  $d = 0.391$ ; for the EOI:  $F(2, 57) = 4.47$ ,  $p < 0.5$ , with effect size of  $d = 0.142$ . No interaction was observed between instruction and time for the TGJ,  $F(2, 57) = 0.252$ ,  $p \geq 0.05$ , nor For EOI,  $F(2, 57) = 0.51$ ,  $p \geq 0.05$ .

For TGJ, data analysis showed that both EI and II groups made significant difference between T0 and T1 and between T1 to T2. This progress was almost equal from T0 to T1 and from T1 to T2 without significant difference between two groups. However both EI and II groups made significant difference between T0 and T1 and between T1 to T2. This shows that instruction was equally effective for both groups. Significant difference between T1 and T2 shows that enduring effect of instruction even after it had stopped. Both groups made significant progress between T0 and T1,  $t(60) = 1.01$ ,  $p = 0.313 \geq 0.05$ , and between T1 and T2,  $t(60) = 0.316$ ,  $p = 0.752 \geq 0.05$ .

Similarly, on EOIT both EI and II groups made significant progress between T0 and T1. Interestingly taking the initial difference between EI and II groups into consideration, the amount of progress was almost the same for both groups. However comparison between T1 and T2 showed significant decrease in learners' performance on EOIT, returning to T0 position. This shows that although instruction had immediate effect, its effect was not lasting and dropped significantly immediately after instruction finished. No significant difference was found between EI and II groups at T1,  $t(58) = 0.305$ ,  $p = 0.721 \geq 0.05$  and T2,  $t(59) = 0.079$ ,  $p = 0.938 \geq 0.05$ .

Table-2. Descriptive statistics for past tense

Measure	Instruction	n	T0	T1	T3
TGJT	EI	29	2.55/1.35	3.37/1.37	3.93/1.27
	II	30	2.63/1.29	3.16/1.05	3.9/1.4
EOIT	EI	29	17.77/19.56	27.79/20.86	21.12/16.73
	II	30	21.43/31.42	30.41/20.41	22.91/17.72

### 3. DISCUSSION

This study was conducted to investigate effect of implicit and explicit instruction on implicit knowledge of English past simple tense. To this end, participants' knowledge of past simple tense acquired in explicit and implicit learning condition was tested through TGJT and EOIT. Result showed that both EI and II have significant effect on implicit knowledge. However no significant difference was found between EI and II.

Comparison between EI and II on TGJT and EOIT showed significant progress for both groups on the tasks without much difference between them. Therefore the result of this study does not support this hypothesis that EI is more effective than II (Norris and Ortega, 2000; Spada and Tomita, 2010). However, there are some recent studies that show no difference between EI and II (De Graaff, 1997; William and Evans, 1998; Housen *et al.*, 2005; Andringa *et al.*, 2011). Part of this discrepancy might be due to the type of measures used. Most of previous studies used discrete point or declarative knowledge-based tests which are naturally measures of explicit knowledge to investigate the effectiveness of EI and II. Another reason might be the idea that effect of EI and II on different linguistic features be different. Unfortunately, evidence in the literature is not enough to determine whether the effect of instruction type varies as the linguistic feature varies (Spada and Tomita, 2010).

The result of the study suggests that EI influence implicit knowledge. This is in line with interface-position (). In the same vein it is against encapsulation theory (Chomsky, 1965) which states that linguistic competence is completely isolated from other cognitive modules including conscious processes which underlies explicit knowledge. Although this study indicates that EI influences implicit knowledge, the relationship between explicit and implicit knowledge is too complex to be explained exactly. The effect might be due to the fact that language learners are consciously using their explicit knowledge in the tasks (DeKeyser, 1998), although the tasks used in this study allow the least amount of explicit knowledge application, they are not pure measures of implicit knowledge. Or implicit acquisition of the target features is due to explicit knowledge (Skehan, 1998). This study also supports Ellis (2005) claim that explicit knowledge and implicit knowledge measures can be separated. Following Ellis (2005) we used TGJT and EOIT as measures of implicit knowledge. The significant effect observed in both TGJT and EOIT for each group can be indication of the fact that both tasks measure the same trait.

Although this study showed no difference between EI and II, one needs to be cautious in interpretation of the result since many factors may affect the outcome including type of linguistic feature, type of tests used, age, proficiency level, setting, amount of instruction, native language etc. however as it was mentioned earlier, more study is required to decide on the superiority of EI over II. This study investigated effect of instruction on implicit knowledge, future studies should include explicit knowledge measures as well. Also further research is required on different linguistic features.

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