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THE EFFECTS OF GRAMMAR INSTRUCTION WITH THREE NOTICING LEVELS ON ESL LEARNERS' GRAMMAR TESTS

By

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ABSTRACT

THE EFFECTS OF GRAMMAR INSTRUCTION
WITH THREE NOTICING LEVELS ON ESL LEARNERS' GRAMMAR TESTS

By Yeon Heo

Research has shown that an increase in the level of noticing positively influences L2 learners' grammar knowledge. However, the effects of different noticing levels on implicit and explicit grammar knowledge have not been adequately investigated. The purpose of this study is to investigate the relationships among noticing levels, difficulty in rules, and types of grammar knowledge. Grammar lessons with three different levels of noticing, timed Grammaticality Judgment Test (GJT) sets, untimed GJT sets, and metalinguistic tests were designed. Sixty participants were divided into three groups over a period of one week. Group 1 took implicit instruction where visual input enhancement was used in the reading material (Implicit Focus-on-Form). Group 2 took explicit grammar instruction with out-of-context examples (Focus-on-Forms). Group 3 received the combination of instructions for Groups 1 and 2 (Explicit Focus-on-Form). On Days 2 and 3, all groups learned the easy rule and the difficult rule respectively. The results suggest three major findings. First, higher noticing levels in grammar learning significantly influenced L2 learners' explicit knowledge of an easy rule. Overall, explicit FonF was the most effective. Second, implicit and explicit knowledge are fundamentally different in terms of retention and are possibly interfaced depending on the combination of rule complexity, time pressure, and grammaticality. Third, the grammaticality of the items in the GJT played an important role for both easy and difficult rules, whereas time pressure played a more important role for the learning of the difficult rule.

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Literature Review

Second language researchers have reached agreements on two important aspects of second language acquisition (SLA). One is that input is an essential component of SLA (Gass, Mackey, & Pica, 1998; Gass & Varonis, 1994). The other is that not all input is attended to by L2 learners (Doughty & Williams, 1998; Long, 1991; Sharwood Smith, 1993). Only a subset of the input filtered from the original input, which is called *intake*, is made available for accommodation by the developing L2 system (VanPatten, 1996).

Researchers in cognitive psychology and SLA have examined the role of attention in mediating input and intake. Schmidt (1994) maintains that learners learn what they attend to and do not learn much of what they do not attend to. The role of attention has been explored in terms of the *noticing hypothesis* (Schmidt, 1994; 1990). According to Schmidt (1994), "noticing is the necessary and sufficient condition for the conversion of input to intake for learning" (p.17). He further argues that subliminal learning cannot account for SLA processes, explaining that noticing requires learners' conscious comprehension and awareness of input. In other words, noticing is crucial for L2 information to be stored in memory (Schmidt, 1994).

If noticing plays a central role in SLA, the important question to consider is how to draw learners' attention to grammatical features in the input in order to

promote learning. Sharwood Smith (1981, 1991) introduced the concept of *input enhancement* as a way of reorienting the discussion on the role of grammar in L2 instruction. Input enhancement, in his definition, refers to a deliberate attempt to make specific features of L2 input more salient in order to draw learners' attention to these features. He further explains that different input enhancement techniques may vary in degrees of explicitness (i.e.,the sophistication and detail of the attention-drawing device). At the highly explicit end of the continuum, metalinguistically sophisticated rule presentation explanations can be found. At the less explicit end, highlighting of the target form can be found (Sharwood Smith, 1991).

In general, two types of input enhancement have been investigated. The first type is visual input enhancement (Alanen, 1995; Shook, 1994). According to Sharwood Smith (1993), this is a way of attracting learners' attention to form in written input by changing the properties of the text, such as changing the fonts, making things in italics, having bold face, putting things in capital letters, using color coding, and underlining. However, visual input enhancement was found to only be effective with other instructional methods, such as explicit rule presentation (White, 1998).

The second type of input enhancement is explicit rule presentation, which is a technique that provides learners with a metalinguistic description of the target forms

(Doughty & Williams, 1998). Based on Schmidt's *noticing hypothesis* (1990, 1994), DeKeyser (1995) used the definitions of implicit and explicit to differentiate two types of instruction based on the degree of learner noticing. According to DeKeyser (1995), there are two dimensions of teaching and learning rules: explicit versus implicit and deductive versus inductive. Explicit learning occurs with concurrent awareness of what is being learned while implicit learning occurs without such concurrent awareness, through memorization of instances or inference of rules. Inductive learning means that examples are provided before rules are explained or discussed while deductive learning means that rules are presented before examples are encountered. The former can be both explicit and implicit, while the latter is necessarily explicit. In the implicit/explicit dichotomy, explicit learning occurs when learners generalize rules while they are aware of what is being learned. On the other hand, implicit learning occurs when learners memorize instances of rules or infer rules without awareness (DeKeyser, 1995).

The two types of input enhancement, which can also be called instructed SLA, have been investigated along with the trials to classify the nature of instruction. Long (1983) first questioned the validity of Krashen's (1982) influential claim of a learning/acquisition distinction, which described learning as different from acquisition in that they are two distinguished, non-interfaced systems. In Krashen's claim,

learning was regarded as peripheral and played a limited role of monitoring the process in L2 performance. In his claim, comprehensible input without explicit grammar instruction was enough for acquisition. Long (1983) attempted to investigate the influence of instruction in SLA and claimed that instruction is considerably beneficial regardless of the learner's age, proficiency level, test modes (either integrative or discrete-point), and the amount of comprehensible input. Long (1991) continued to investigate the effectiveness of instructed SLA by dividing the nature of instruction into three categories: FonF, FonFS, and FonM. FonF refers to pedagogical interventions that draw the learner's attention to form within a meaningful context when necessary. The forms should be learnable given the learner's developmental state (Long, 1991). FonFS draws the learner's attention to isolated language forms with no regard for meaning under the assumption that L2 forms need to be learned in a structured sequence according to linguistic complexity. FonM instruction focuses on exposure to rich input and meaningful use of L2, which can make incidental acquisition of L2 possible. Among the three, FonF was supported in that it overtly draws students' attention to forms as the need arises incidentally, whose overriding focus is on meaning or communication (Long, 1991).

Building upon the previous studies of Sharwood Smith, Long, and DeKeyser, Doughty and Williams (1998) used the notion of a continuum in order to explain the

degree of intrusiveness of the pedagogical intervention on the process of meaning. They defined the criterion as "obtrusiveness," meaning the degree of interruption that FonF causes on the flow of communication (Doughty & Williams, 1998). The technique with the least obtrusiveness is input flood. Visual input enhancement is the second least obtrusive pedagogical intervention according to a taxonomy of FonF techniques (Doughty & Williams, 1998). These two are called implicit FonF techniques in that they avoid metalinguistic discussion and minimize interruption during the communication of meaning. Both techniques have four major features in common. First, learners' attention is not directed by teachers. Second, learners do not manipulate the form. Third, the learning condition is not deductive. Fourth, the techniques are integrated into the task (Doughty & Williams, 1998).

Even though the FonF of Long and the input enhancement of Sharwood Smith are different, the expanded FonF and input enhancement are similar in many ways. While FonF techniques require that grammar or vocabulary teaching occurs incidentally during communicative events, input enhancement does not necessarily require the instruction of grammar or vocabulary. In Long's original use of the term, FonF would exclude pedagogical interventions that require a proactive, as opposed to reactive, attention to form. Input enhancement is less restrictive because it can be both proactive and reactive and does not require communicative interaction as a

prerequisite (Sharwood Smith, 1991). However, today, the term FonF has been used in a broader sense and has been expanded to include both proactive and reactive types of interaction (Doughty & Williams, 1998). The expanded FonF definition may refer to any technique that draws learners' attention to form in meaning-based situations in either spontaneous or predetermined ways. Therefore, modified FonF and input enhancement can be regarded as similar in that both refer to external efforts to draw learners' attention to form (Wong, 2005).

Several major previous studies have emphasized the effect of instructed SLA, based on the finding that the more learners notice the input, the more facilitated the process of language acquisition becomes. Doughty (1991) investigated the effect of instruction on the acquisition of relative clauses by 20 intermediate-level English learners. In this study, the participants were divided into three groups. Each group skimmed and scanned the material, answered comprehension questions, and formulated summaries of the passage in their L1 via recall. One group received no instruction and was exposed to the same linguistic input as the other participants. The experimental groups were a meaning-oriented group and a rule-based group. Both of them were given visual cues that served to focus attention on the major components of relative clauses. The meaning-oriented group received visual input enhancement techniques of highlighting and capitalization, whereas the rule-based group was given

a presentation of the rule and the examples. After treatment, both instructed groups scored higher than the control group on both comprehension and production tests. These results imply that instruction accompanied with noticing levels may have been instrumental in improving L2 learners' performances in their reading comprehension and L1 production (Doughty, 1991).

Alanen (1995) examined how rule presentation and visual input enhancement affected the acquisition of structural language elements, using semi-artificial Finnish. Two target rules were locative suffixes and four types of consonant alternations. Three types of input were provided: visually enhanced learning targets by the use of italics, explicit rule presentation, and a combination of both. The participants were divided correspondingly into four groups, one being a control group. The scores of grammaticality judgment and sentence completion tests supported the hypothesized achievement order, which was from high to low: combination of explicit rule presentation & visual input enhancement, explicit rule presentation, visual input enhancement, and control. Alanen's study also claimed that there cannot be learning without noticing. The participants who learned the target rules made comments on them either in their think-alouds or rule statements. Especially among the participants in the visual input enhancement and control groups, there was a statistically significant positive correlation between the learning outcomes and the participants'

comments on the target rules. This can suggest that even a small amount of help in focusing the learners' attention on rules, such as visual input enhancement or learner-generated attention to form, may facilitate the learners' acquisition of the target rules.

The studies of DeKeyser (1995) and Robinson (1996) used computers as a means of instruction. DeKeyser reported a computerized experiment with a miniature linguistic system with five morphological rules and a lexicon of 98 words. The linguistic system was not artificial but natural. The 61 participants were divided into two treatment groups: implicit inductive and explicit deductive groups. DeKeyser formulated two hypotheses: (1) explicit-deductive learning would be better than implicit-inductive learning for straightforward rules, and (2) implicit-inductive learning would be better than explicit-deductive learning for "fuzzy," less transparent rules. The implicit-inductive learning group was instructed to pair sentences with color pictures and the explicit-deductive learning group was presented with traditional grammar rules. The results showed that the explicit rule presentation was effective for straightforward rules, but not for less transparent rules. However, "fuzzy" rules appeared to be learned better by the implicit-inductive learning group, even though the results did not show a statistical significance.

Robinson (1996) investigated 104 adult students of English who were learning both an easy and a complex rules. The participants were divided into four groups and

required to view the sentences on a computer screen. The first group was simply asked to remember the sentences. The second group was given comprehension questions about them. The third group was asked to identify the rules illustrated by the sentences. The fourth group first received direct explanations of the rules and then tried to apply them to the sentences. In the results, in terms of the easy rules, the group receiving explicit explanations outperformed all the other groups on a transfer GJT administered immediately after the treatment.

Norris and Ortega (2001) tried to identify the relative effectiveness of different types of L2 instruction among 49 unique sample studies from the published SLA literature. Seventy-seven studies were coded as implicit/explicit and FonF, FonFS, or FonM. Methods of measurement were coded as metalinguistic judgment, selected response, constrained constructed response, or free constructed response. Methodological features, such as the learner population, instructional setting, research design, and statistical analyses, were also considered in the coding process. The results showed that there is an apparent advantage for explicit over implicit types of L2 instruction. Moreover, they also presented an instructional treatment effectiveness continuum as follows from large to small: Explicit FonF (large effect), Explicit FonFS (large effect), Implicit FonF (medium effect), and Implicit FonFS (small effect). Norris and Ortega concluded that explicit types of instruction are more effective than

implicit types and FonF and FonFS show equivalent effects on L2 learners' target-oriented gains.

In sum, the general consensus regarding grammar instruction that draws learners' attention to grammatical form is that it may be useful when it is carried out within communicative and meaningful contexts. Furthermore, the higher the noticing level, the greater the rate of form acquisition. However, the optimal degree of explicitness has yet to be determined with regard to the complexity of rules and the types of grammar knowledge.

With regard to the interaction between the two types of instruction and the complexity of rules, it has been argued that implicit learning is beneficial for complex structures (Krashen, 1994). Because complex structures are hard to grasp explicitly, implicit learning will provide a relative advantage for L2 learners (DeKeyser, 2003). DeKeyser (1995) investigated the interaction between two types of instruction (implicit and explicit conditions) and two types of rules (categorical and prototypical rules). The results showed a small advantage for the implicit group concerning the prototypical rule and a strong benefit for the explicit group with regard to the categorical rules. In terms of the hard rules, Robinson (1996) also found that implicit instruction was the second most advantageous among the four learning conditions: implicit, incidental, rule-search, and instructed learning. However, as the implicit

group did not outperform the instructed group, there were no significant differences observed.

The categorization of difficult and easy grammatical structures was attempted with reference to the distinction between implicit and explicit knowledge of a second language (Ellis, 2006). For his study, Ellis assumed that there are potential determinants of what make different grammar rules easy or difficult as both implicit and explicit knowledge. For implicit knowledge, frequency, saliency (i.e., ease of noticing), functional value (i.e., clarity or multiplicity of the function), and regularity (i.e., the scope that a rule covers and the extent to which a rule holds true) can serve as the criteria to determine the difficulty of the rules. For explicit knowledge, conceptual clarity (i.e., the degree of formal and functional simplicity) and metalanguage use (i.e., the technicality of metalanguage to formulate a rule) can be the determiners. For the experiment, implicit and explicit grammar knowledge of 17 English grammar rules was measured using an oral imitation test involving grammatical and ungrammatical sentences, an oral narration test, a timed GJT, an untimed GJT with the same content, and a metalingusitc knowledge test (Ellis, 2005). The results showed that some rules – easy in terms of explicit knowledge – were difficult in terms of implicit knowledge. The rules concerned the indefinite article, 3rd person *–s*, plural *–s*, regular past tense *–ed*, the uses of since/for, and relative clauses.

The rules varying little in ease or difficulty for implicit and explicit knowledge were verb complements, yes/no questions, modals, and ergative verbs. The study also showed that both types of knowledge predicted the learners' general language proficiency, which means that language proficiency draws upon both types of knowledge. Even though a clear correlation was not found between the rank orders of difficulty of the seventeen rules for the two types of grammar knowledge, this study suggests that perceiving grammar in two different types and measuring them accordingly will shed light upon the understanding of the relationship between the acquisitional and the learning processes (Ellis, 2006).

Robinson (1996) explains the complexity of rules by distinguishing linguistic and pedagogic rules. Linguistic rules are abstract forms in which knowledge of language is represented in the mind of L2 learners. Pedagogic rules are simplified, concrete, and limited versions of such linguistic rules. Robinson introduced structure and explanation complexities to explain the complexity of pedagogic rules: structure and explanation complexities (1996). Structure complexity is similar to Ellis's (2006) conceptual clarity (i.e., the degree of formal and functional simplicity); explanation complexity is similar to metalinguistic use (i.e., the technicality of metalanguage to formulate a rule). Robinson claimed that the complexity of pedagogic rules can be estimated when both of these factors are taken into consideration. If the pedagogic

rules are too complex, either from structure or from explanation complexity, this hampers learners' noticing and understanding, which is not facilitative to rule acquisition. On the contrary, the complex rules require greater mental and communicative efforts and attentional resource allocation to the input (Robinson, 2005).

DeKeyser (2003) distinguishes the complexity of rules by using "objective" and "subjective" difficulty. Objective difficulty is about the inherent difficulty of various rules based upon theoretical predictions. Subjective difficulty is about the actual difficulty that L2 learners experience in learning grammar rules. This distinction is in line with Robinson's distinction of linguistic and pedagogic rules. Even though linguistic rules can be characterized as "objective," the complexity, the theoretical qualities, and the abstractness of the grammar underlying natural languages make it hard to characterize easy and hard rules based solely on linguistic theory. Therefore, DeKeyser suggests that rule difficulty is ultimately an individual issue that can be understood in the relationship between the rule's inherent linguistic complexity and the ability of learners to learn the rule. This subjective difficulty of the rule determines the degree of effectiveness of explicit instruction even for the same rule.

The effects of implicit and explicit learning on memory have been studied by

Jacoby and Dallas. It has been presumed that the difference between implicit and explicit learning lies in stability of implicit learning on memory. Jacoby and Dallas (1981) assessed implicit and explicit memory performance following a study task that required elaborative processing (e.g., answering questions about the meaning of target words) or non-elaborative processing (e.g., deciding whether or not a word contains a particular letter). They found that explicit memory performance (i.e., yes/no recognition performance) was higher following elaborative study tasks than non-elaborative tasks, whereas implicit memory performance (i.e., reporting the target words at a 2-sec rate) was unaffected by the study-task manipulation. The study shows that performance on implicit memory tasks is not affected by variations in the levels or types of study processing.

Another property of implicit learning on memory is a higher durability than explicit learning on memory. Allen and Reber (1980) tested knowledge of the grammatical structure of two artificial languages after a two-year hiatus. In the original study, the researchers required participants to learn two different artificial languages under two different training conditions (i.e., paired-associate learning and an observation procedure). The results were interpreted in terms of three cognitive modes for acquiring knowledge of the grammars: explicit rule induction, individual memory utilization, and an implicit abstraction strategy. In two years, participants

were asked to classify new stimuli (i.e., judging well-formedness of the word strings). The results showed that even two years after learning, the subjects were significantly above chance at assigning grammatical status to test items. However, the robustness was different according to the types of knowledge. After two years, explicit knowledge was relatively fragile, whereas implicit knowledge was durable. Participants continued to make accurate judgments in the absence of verbalizable knowledge. The researchers also reported that intuitive apprehension of grammaticality is harder to come by, whereas knowledge gained via implicit learning is persistent in both form and quality (Allen & Reber, 1980).

The research on implicit and explicit grammar knowledge has also been conducted in terms of the non-interface and interface positions (Ellis, 2005). The basic difference between the two is the possibility of the conversion from explicit to implicit grammar knowledge. The non-interface position claims that implicit knowledge does not derive directly from explicit grammar knowledge. The strong non-interface position supports the view that explicit knowledge has no role in the development of implicit knowledge and vice versa (Ellis, 2005; Krashen, 1982). The weak non-interface position allows the possibility that if L2 learners pick up a second language through natural exposure, the implicit knowledge transforms into explicit through the process of conscious analysis of the implicit knowledge

(Bialystok, 1994).

The interface position claims that explicit grammar knowledge can be converted into implicit grammar knowledge. There are two kinds of interface positions: strong and weak. The strong interface position supports the idea that explicit grammar knowledge can be converted into implicit and vice versa (DeKeyser, 1998; Ellis, 2005). The strong interface position also claims that the L2 learner first learns grammar as declarative[1] knowledge. Then, through practice, the declarative knowledge can become implicit, proceduralized, and automatized knowledge (Sharwood Smith, 1981, DeKeyser, 1998). Two points are noteworthy: first, the conversion does not necessarily result in the loss of the original explicit knowledge. Second, there has been a disagreement on whether the practice is mechanical or communicative in nature (Ellis, 2005). The weak interface position suggests that there is a time limitation; the conversion is possible only if the learner is developmentally ready to acquire the linguistic form (Ellis, 2005). However, how

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[1] The distinction between the two kinds of knowledge can be summed up in three points. (1)Acquisition: Declarative knowledge is factual knowledge that people can report or describe, whereas procedural knowledge is knowledge people can only manifest in their performance. (2)Reportability: Knowledge that one is able to verbally describe or declare is considered declarative, whereas knowledge that can only be inferred from an individual's behavior is considered procedural. (3)Retention: The retention functions for the two types of memories are independent. The most striking case of this is when people get better at using the procedural knowledge but worse at recalling the declarative knowledge (e.g. memories about the typewriter keyboard and typing can be an example) (Anderson, 1993).

and when the two types of grammar knowledge are interfaced or interrelated needs to be investigated more so that the results can assign a significant role to explicit knowledge and learning in SLA. Because research has shown that implicit learning or knowledge is more stable and durable than explicit learning or knowledge, more studies on their interface will shed light on both the general understanding and the facilitation of SLA.

The measurement of implicit and explicit L2 knowledge has also been investigated. A problem facing investigations of implicit and explicit learning is the lack of valid measures of second language implicit and explicit knowledge. In this point of view, the results of Norris and Ortega's meta-analysis are problematic due to the original studies' biased measurement of target grammar gains (Norris & Ortega, 2001). The majority of the studies in the research implemented discrete-point or declarative knowledge-based measures in artificial and controlled conditions. As a result, the effectiveness of explicit instruction was overstated due to the conditions where short-term, explicitly focused instruction is measured on artificial, discrete-point tests (Doughty, 2003). To investigate real use of L2 knowledge in terms of dynamic L2 processing, more spontaneous conditions should be included to strike a balance between implicit procedural knowledge and explicit declarative knowledge.

Many recent studies have shed insight on how to measure grammar

knowledge using tests that have high construct validity. A timed GJT, an oral narration test, and an oral imitation test are interpreted as measuring implicit grammar knowledge, while a timed GJT and a metalinguistic knowledge test are regarded as measuring explicit grammar knowledge (Ellis, 2005; Loewen, 2003). With regard to a GJT, two factors are important to measure the different types of knowledge. One is time pressure. The other is the grammaticality of the test items, which plays an important role in encouraging L2 learners to use different types of grammar knowledge. Judging ungrammatical sentences directs L2 learners to use grammar "rule" more frequently (Loewen, 2003). Therefore, it can be argued that an untimed GJT using ungrammatical items may allow L2 learners to use explicit knowledge more, whereas a timed GJT that uses grammatical items would be a more valid measure of implicit grammar knowledge (Loewen, 2003). It is not clear, however, which grammar knowledge L2 learners would use for an ungrammatical item in a timed GJT.

The methods for measuring noticing have been investigated by many researchers. The measurement of noticing is not an easy task for SLA researchers since it involves assessing learner-internal processes. Previous studies used postexposure tasks such as multiple-choice recognition tasks (Leow, 1993), grammaticality judgment tasks (Alanen, 1995), and interviews (White, 1998).

However, the think-aloud, an on-line measure, has an advantage over the postexposure tasks since it provides more information about learners' allocation of cognitive resources, the role of awareness, and the degree of awareness while processing L2 forms (Leow, 1997).

Leow has focused on two topics in his studies. One is that L2 learners with higher awareness perform better than those with lower awareness. He claimed that more awareness contributes to more recognition and to accurate written production of noticed forms. This also increases allocation of attention and permits learners to take in and retrieve the target rule in a more efficient way when compared to less awareness (Leow, 1997). Leow (2004, 2005) also attempted to provide insight into the issue of reactivity in on-line think-aloud protocols. In his study (2004), first-year college level students of Spanish were exposed to the same reading passage, pretest, and posttest tasks but differed on type of condition (with or without think aloud). The results indicated that think-aloud protocol does not play a significant role in learners' comprehension, intake, and controlled written production. Based on theses results, Leow claimed that on-line think-aloud does not trigger changes in learners' cognitive processes while performing tasks, which means reactivity does not play a significant role in learners' subsequent performances (2004). He also expanded the scope of investigation regarding on-line think-alouds by distinguishing non-metalinguistic protocol from metalinguistic protocol

(2005). The results showed that metalinguistic verbalization caused a significant decrease in text comprehension. Moreover, both types of verbalization significantly increased the amount of time on task. In sum, the on-line think-aloud protocol needs to be the focus of more research in order to prove its validity concerning reactivity in SLA.

Summary of the Literature Review and Research Questions

Based on the previous literature, three elements should be noted. First, more noticing (the combination of input enhancement and rule presentation) is more facilitative in SLA than less noticing (input enhancement only) (Alanen, 1995; DeKeyser, 1995; Robinson, 1996; Norris & Ortega, 2001). Second, the degree of noticing and awareness is related to improved performance of L2 learners (Leow, 1997; Schmidt, 1994). However, the effectiveness varies according to the complexity of the rules. One problem of the previous studies is that the tests for the research have been biased for explicit grammar knowledge or not clearly defined. The second element is that measurement for implicit and explicit grammar knowledge should be differentiated in that timed and more spontaneous tests may measure implicit grammar knowledge, whereas untimed tests may measure explicit grammar knowledge. In addition, grammaticality of items for GJTs should also be further investigated to prove its validity in measuring the two types of grammar knowledge. Finally, the third element

is that the interface between implicit and explicit grammar knowledge has been presumed. The argument for the necessity of explicit grammar knowledge has gained support. Researchers believe it may facilitate the development of implicit grammar knowledge in a weak or strong way. However, more investigation is required.

At this juncture, a study that relates the effectiveness of pedagogical intervention with different noticing levels, two rules with different complexity, and more balanced measurements between implicit and explicit grammar knowledge is necessary. To bridge the research gap, this study focuses on the following three concerns: (a) how three types of grammar instruction (with three different noticing levels) influence two types of rules in two kinds of grammar knowledge; (b) whether time pressure or grammaticality of GJTs influences the participants' performances in timed and untimed GJTs; and (c) what grammar knowledge the participants use for timed GJTs, untimed GJTs, and the metalinguistic tests throughout the experiment.

Based on the major foci, the following questions guided this study:

1. Do variations on grammar instruction, with three different noticing levels on explicitness, influence L2 learners' grammar accuracy for an easy rule in terms of implicit and explicit grammar knowledge?
2. Do variations on grammar instruction, with three different noticing levels on explicitness, influence L2 learners' grammar accuracy for a difficult rule in

terms of implicit and explicit grammar knowledge?

3. Does either time pressure or grammaticality of GJTs influence the participants' performance in timed and untimed GJTs?
4. Are the measurements correlated throughout the experiment in terms of time pressure, grammaticality, and rule complexity?

Methods

Participants

The participants in the study were 60 adult ESL learners at the intermediate level. They were recruited from the English Language Center (ELC) at Michigan State University and from Lansing Community College via flyers and through the researchers' visiting of the participants' classes. This study was advertised as extra ESL instruction. Thirty of the participants were male and thirty of them were female. The average length of residence in America was 8 months. They ranged in age from 20 to 31 with an average age of 23. Forty-five of the participants spoke Korean as an L1 while of the remaing 15, 6 spoke Chinese, 4 Arabic, 2 Vietnamese, 2 Japanese, and 1 French. Participants at Michigan State University were paid 25 dollars for participating. Those at Lansing Community College were paid 30 dollars—the extra five dollars was paid to cover their transportation costs to and from MSU's campus

where data was collected.

Rules

The two rules, the modal and the past unreal conditional, were chosen for the study based on their neutrality concerning the score difference between implicit and explicit knowledge (Ellis, 2006). According to Ellis, the modal is an easy rule among 17 English rules in terms of mean scores. The difference between implicit and explicit scores for the modal is 0.01, which is negligible considering the other differences of the 16 rules. The unreal conditional is a difficult rule among the 17 rules in terms of mean scores. The difference is 0.13, which means that the unreal conditional varies little with regard to implicit/explicit knowledge among difficult rules. Choosing these two neutral rules in terms of implicit and explicit grammar knowledge helps to conduct a more balanced experiment for the purposes of investigating the difference between the two types of grammar knowledge and their relationships with noticing levels.

Materials

Instruction materials were made with Hot Potatoes (University of Victoria, 2003), a free Java Script program. The time for the treatment for each group was 20 minutes. The reading tasks for each group were designed using J- Cloze, one of the five modules of Hot Potatoes. All materials for each group were designed so that the participants could read the passages and complete the thirteen sentences that

contained blanks. These sentences followed the reading passages. The thirteen sentences for each group were copied from the previous reading passages that were presented to them. This practice was only to prove that the participants had read the reading passages carefully. The results were not taken into consideration for the analysis.

The reading material for Group 1 with implicit FonF contained capitalized grammar structures (Appendix B-1). The material for Group 2 with FonFS started with the reading task with explicit and deductive grammar instruction. The material for Group 3 was designed to start with the shortened version of the same explicit and deductive grammar instruction as Group 2 with FonFS. After that, the shortened version of the reading material for Group 1 followed.

The reading passages, the explicit instructions, and the examples chosen for the two rules were adapted from *Grammar in Context* (Elbaum, 2005), *Grammar in Use Intermediate* (Murphy & Smalzer, 2000), and *Advanced Grammar in Use* (Hewings, 1999). The length and the content of the passages and sentences were adjusted for the purpose of making the reading situations for the three groups equal with regards to the time limit (20 minutes), the instances of the target rules (30-50 cases for each rule), and the total number of the words (700-750 words for each rule).

A retrospective questionnaire was used in the present study for measuring

awareness of the target rules right after the second treatment. The decision to use a questionnaire rather than on-line think-aloud was based on the assumption that on-line think-alouds would hamper learners' cognitive processes when they take a computerized timed GJT. Instead, the participants were asked to complete the retrospective questionnaire and specify their noticing levels and their sources of grammaticality judgment for the timed GJTs by describing the proportion of grammar-related 'feel' and grammar 'rule' (Ellis, 2006) on a scale from 1 to 100 (Appendix G-1,2,3).

Research Procedure

Pilot Study

Ten native speakers of English participated in the pilot study. They judged the grammaticality of the 32 items and the time they used to judge each item was recorded. The time each native speaker had spent was averaged for each sentence in the set. Based on the average time, the time for each GJT in the set was allocated. Twenty percent of the time the native speakers had taken to complete the test was added to the average (Ellis, 2005; Loewen, 2003). Five nonnative speakers of English at the intermediate level also took the timed GJT and read the reading materials. According to the results, the numbers of the words and type-in practice sentences in

the reading materials were adjusted for the participants to finish the reading within 20 minutes.

Main Study

Data collection took place in computer laboratories at MSU outside of the participants' normal class times. Table 1 demonstrates the procedures of the study.

Table 1

Procedures of the Study

Day 1	Day 2	Day 3
Pre-test	Treatment 1	Treatment 2
	Treatment of the rule 1	Treatment of the rule 2
1.Timed GJT 2.Untimed GJT 3. Metalinguistic test	Post-Test	Post-Test
	1.Timed GJT 2.Untimed GJT 3. Metalinguistic test	1.Timed GJT 2.Untimed GJT 3. Metalinguistic test

On Day 1, the participants logged onto the Hot Potatoes web site using their pre-assigned IDs and passwords after filling out the bio-data questionnaire (Appendix A). First, they practiced with the trial exercises for the timed GJTs. The exercise for the timed GJT consisted of five sentences whose time limit and sentence length varied. The rules in the five sentences were not related to the target rules for this study. After the exercise, the participants took two types of pre-tests: implicit and explicit

grammar tests. Because this study focuses on the influence of noticing levels on learners' SLA processes concerning rules, the learners' previous grammar knowledge was measured. That is, to control for this variable, their implicit knowledge was tested through the timed GJT and explicit grammar knowledge was tested through the untimed GJT and the metalinguistic test. The set of the timed GJT consisted of 32 sentences. Sixteen of the sentences were used to measure the participants' grammar knowledge about the easy rule (the modals, Appendix E-1) and the other half were designed to measure the learners' grammar knowledge about the difficult rule (the past unreal conditional, Appendix E-2). Each of the 32 sentences was timed based on the pilot study with 10 native speakers of English. As previously stated, times allocated to each sentence for the nonnative speakers were assumed to be 20% more than the native speakers' reaction times (Ellis, 2005).

The untimed GJT consisted of the same sentences as the set of the timed GJT. The untimed GJT did not have a time constraint. The metalinguistic test consisted of 12 multiple-choice questions to measure the participants' metalinguistic knowledge about the two rules (Appendix F-1, 2). After the three grammar tests, the participants were divided into three groups randomly: implicit FonF (Group 1, the input enhancement group), FonFS (Group 2, the rule presentation group), and explicit FonF (Group 3, the combination of both rule presentation and input enhancement). Group 1

(Implicit FonF) refers to the lowest noticing level of a meaning-focused reading task where the target forms get visual input enhancement with capitalization. Group 2 (FonFS) refers to the high noticing level of rule presentation with out-of-context examples where the target forms are used. Group 3 (Explicit FonF) refers to the middle noticing level of rule presentation with a meaning-focused task where the target forms are visually enhanced with capitalization.

On Day 2, all groups logged onto the website where the first reading tasks and the tests for the easy rule (the modals) had been assigned for each participant. Through implicit instruction, Group 1 learned the modals by engaging in the reading task. In the reading task, the easy structures were capitalized as a way of input enhancement during the learning process. Group 2 with FonFS learned the modals through explicit and deductive instruction. The participants read the instruction about the modals and the examples where the various modals were used. The example sentences were out of context. Group 3 with explicit FonF learned the modals through explicit and deductive instruction first using the same explicit instruction as Group 2 with FonFS. However, the number of the examples was smaller (Appendix D-1). After that, the participants in Group 3 with explicit FonF read the shortened version of the first reading material that was presented to Group 1 with implicit FonF. In the reading task, the structures were capitalized for Group 3 with explicit FonF. The task

for Group 3 consisted of two parts: the receipt of explicit grammar instruction and the reading of the input enhanced passage. Subsequently, all groups took the timed GJT, the untimed GJT, and the metalinguistic test.

On Day 3, the treatments and the tests were the same as during Day 2; however, the participants learned the past unreal conditional instead of modals. Afterward, the paraticipants filled out one of the three retrospective questionnaires that had been designed for each group (Appendix G-1, 2, 3).

The research was conducted within a period of one week. The time gap between Days 1 and 2 was three days and the gap between Days 2 and 3 was four. The time that each participant spent each day was approximately one hour. The total time for the research for each participant was three hours.

Data Analysis

Coding

The number of the correct answers to each sentence for the timed GJT was tabulated depending upon the structures. A perfect score for each rule was 16. The results of the untimed GJT and the metalinguistic test were scored using the built-in scoring system in Hot Potatoes. For example, if a participant had four answers correct out of the total of five, he or she got 80 points out of 100. The scores for the untimed GJT and the

metalinguistic test were converted into raw scores for the purpose of making the results of the three tests more compatible with each other. The perfect score for the untimed GJT for each rule was 16 while the perfect score for the metalinguistic test for each rule was 6. The tests for the present study and their perfect scores are summarized in Table 2.

Table 2
Summary of the Tests and the Perfect Scores

	Timed GJT	Untimed GJT	Metalinguistic Test
Easy Rule	16	16	6
Difficult Rule	16	16	6

Analysis

Descriptive statistics were calculated for the timed and untimed GJTs for each group, as well as for the grammatical and ungrammatical sections of the GJTs. In order to investigate the effects of the noticing levels of each group, a Repeated Measures ANOVA was employed on the sample (n=60) for each rule. In order to compare the gains among groups, a one-way ANOVA was used. In order to investigate the difference between implicit and explicit grammar knowledge in the delayed tests for each group with differing noticing levels, another Repeated Measures ANOVA was employed. In order to investigate the relationships among the tests before and after the treatments, Pearson Correlations were performed.

Results

The results of the three tests for each group in terms of the easy rule (the modal), shown in Table 3, reveal that all groups performed better on the posttests than on the pretests. The scores for the timed GJT for the three groups are lower than the scores for the untimed GJT. The scores of the timed GJT posttest for the three groups are lower than those of the untimed GJT pretests.

Table 3

Descriptive Statistics for the Tests (Easy Rule)

		Group 1			Group 2			Group 3		
		N	Mean	Sd	N	Mean	Sd	N	Mean	Sd
Timed GJT	Pre	20	8.40	2.50	20	8.65	2.37	20	8.25	2.36
	Post	20	10.05	2.42	20	10.60	1.85	20	11.10	2.81
Untimed GJT	Pre	20	12.30	1.87	20	11.05	2.56	20	11.25	2.40
	Post	20	12.65	2.54	20	12.85	1.79	20	12.90	2.02
Metalinguistic Test	Pre	20	2.90	1.41	20	2.65	1.42	20	2.80	1.24
	Post	20	3.52	1.45	20	3.50	1.67	20	4.15	1.57

The results of the three tests for each group in terms of the difficult rule (the past unreal conditional), shown in Table 4, reveal that all groups performed better on the posttests. The scores of the timed GJT for the three groups are lower than those for the untimed GJT. The scores of the timed GJT posttest for the three groups are lower than those of the untimed GJT pretests. While the descriptive statistics suggest that there were differences between the pre and posttests for each group in terms of the two rules, ANOVAs were performed to determine if these differences were

statistically significant.

Table 4

Descriptive Statistics for the Tests (Difficult Rule)

		Group 1			Group 2			Group 3		
		N	Mean	Sd	N	Mean	Sd	N	Mean	Sd
Timed GJT	Pre	20	7.80	2.39	20	7.25	2.49	20	8.70	2.16
	Post	20	8.10	2.22	20	8.45	2.21	20	9.30	2.34
Untimed GJT	Pre	20	9.70	2.34	20	8.80	1.96	20	9.65	2.35
	Post	20	10.45	2.42	20	11.00	2.36	20	10.95	2.52
Metalinguistic Test	Pre	20	2.75	1.33	20	2.45	1.43	20	2.10	1.55
	Post	20	3.60	1.50	20	3.00	1.78	20	3.40	1.76

Research question 1 concerns the relationship between noticing levels and implicit and explicit grammar knowledge for the easy rule (the modal). The results, shown in Table 5, indicated that there was a significant difference between the groups' performances. They suggest that explicit instruction with various noticing levels for the easy rule is effective concerning explicit grammar knowledge. In addition, the ANOVA showed that there was a significant interaction between time and group.

Table 5

Repeated Measures ANOVA for Untimed GJT (Easy Rule)

Variable	Df	F	P	Partial Eta Squared
Time	2	24.684	.000	.302
Group	2	.381	.685	.013
Time*Group	4	3.261	.046	.103

The results for one-way ANOVA for the untimed GJT for the easy rule show

that Group 2 with FonFS showed marginally significant better performance than Group 1 with implicit FonF (Table 6). Group 3 with explicit FonF also showed better performance than Group 1 with implicit FonF technique. Groups with FonFS and explicit FonF techniques did not show statistically significant difference. However, Group 2 with FonFS showed better result than Group 3 with explicit FonF by 0.15, which is not statistically significant.

Table 6

Gain Comparison between Groups for Untimed GJT (Easy Rule)

(I) 1=Implicit FonF 2=FonFS 3=Explicit FonF	(J) 1=Implicit FonF 2=FonFS 3=Explicit FonF	Mean Difference (I-J)	Std. Error	Sig.
1	2	-1.45000	.62450	.061
	3	-1.30000	.62450	.103
2	1	1.45000	.62450	.061
	3	.15000	.62450	.969
3	1	1.30000	.62450	.103
	2	-.15000	.62450	.969

For ease of interpretation, this interaction is represented in Figure 1, which shows that there is a nearly statistically significant difference in the three groups with different noticing levels on the untimed GJT for the easy rule, with rule presentation groups (Group 2 and Group 3) performing significantly better than the visual input enhancement group (Group 1).

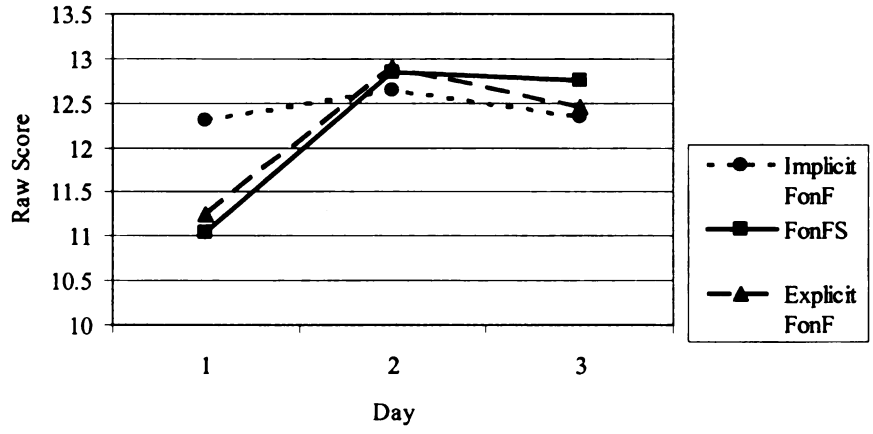

Figure 1. Profile plots of each group for the untimed GJT in terms of the easy rule throughout the experiment.

The results, shown in Table 7, indicated that there was also a significant difference between the groups' performances throughout the experiment. This suggests that various noticing levels are facilitative for the learning of the easy rule in terms of the timed GJT. However, the ANOVA did not show that there was a significant interaction between time and group. Therefore, it can be said that raising noticing levels in the explicit instruction did not affect the improvement of implicit grammar knowledge for the easy rule.

Table 7

Repeated Measures ANOVA for the Timed GJT (Easy Rule)

Variable	Df	F	P	Partial Eta Squared
Time	2	39.321	.000	.408
Group	2	.304	.739	.011
Time*Group	4	1.106	.338	.037

Table 8 shows the performance difference between each group for the easy rule in terms of the timed GJT. The performance of the groups can be ordered from high to low: Group 3 with explicit FonF > Group 2 with FonFS > Group 1 with implicit FonF. However, this order should be considered with caution since there is not a significant interaction between time and group.

Table 8

Gain Comparison between Groups for Timed GJT (Easy Rule)

(I) 1=Implicit FonF 2=FonFS 3=Explicit FonF	(J) 1=Implicit FonF 2=FonFS 3=Explicit FonF	Mean Difference (I-J)	Std. Error	Sig.
1	2	-.30000	.83985	.932
	3	-1.20000	.83985	.333
2	1	.30000	.83985	.932
	3	-.90000	.83985	.535
3	1	1.20000	.83985	.333
	2	.90000	.83985	.535

For ease of interpretation, the differences are represented in Figure 2, which shows that Group 2 with FonFS and Group 3 with explicit FonF showed different performance to Group 1 for the timed GJT for the easy rule.

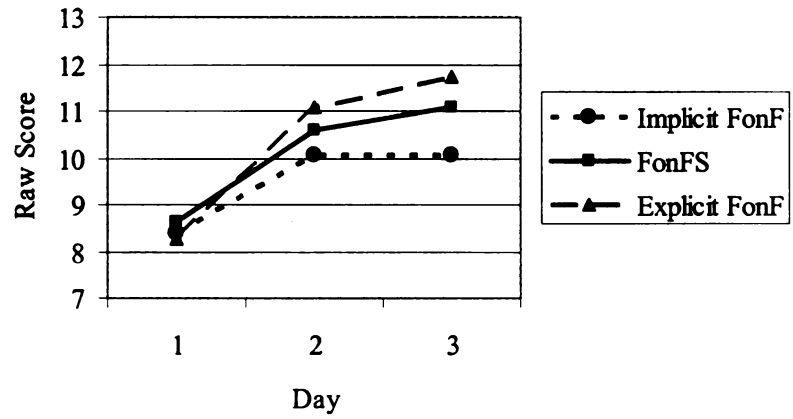

Figure 2. Profile plots of each group for the timed GJT in terms of the easy rule throughout the experiment.

Research question 2 concerns the relationship between noticing levels and implicit and explicit grammar knowledge for the difficult rule (the unreal conditional). The results, shown in Table 9, indicated that there was a significant difference between the groups' performances throughout the experiment. Therefore, it suggests that explicit instruction with various noticing levels facilitates the participants' learning of explicit grammar knowledge for the difficult rule.

Table 9

Repeated Measures ANOVA for Untimed GJT (Difficult Rule)

Variable	Df	F	P	Partial Eta Squared
Time	2	12.983	.000	.186
Group	2	.287	.752	.010
Time*Group	4	.765	.550	.026

However, the ANOVA did not show that there was a significant interaction

between time and group. Therefore, it can be said that raising noticing levels in the explicit instruction was not effective for the learning of explicit grammar knowledge for the difficult rule.

Table 10 demonstrates the comparison of each group's performance on the untimed GJT in terms of the difficult rule. Group 3, with explicit FonF, showed the best performance, whereas Group 2, with FonFS, marked the lowest score. The performance of Group 1 marked in the middle of the two groups. However, these results should be considered with caution since they are not statistically significant.

Table 10

Gain Comparison between Groups for Untimed GJT (Difficult Rule)

(I) 1=Implicit FonF 2=FonFS 3=Explicit FonF	(J) 1=Implicit FonF 2=FonFS 3=Explicit FonF	Mean Difference (I-J)	Std. Error	Sig.
1	2	.0667	.49056	.990
	3	-.2833	.49056	.833
2	1	-.0667	.49056	.990
	3	-.3500	.49056	.757
3	1	.2833	.49056	.833
	2	.3500	.49056	.757

For ease of interpretation, Figure 3 showed the pattern of the three groups' performances for the untimed GJT for the difficult rule.

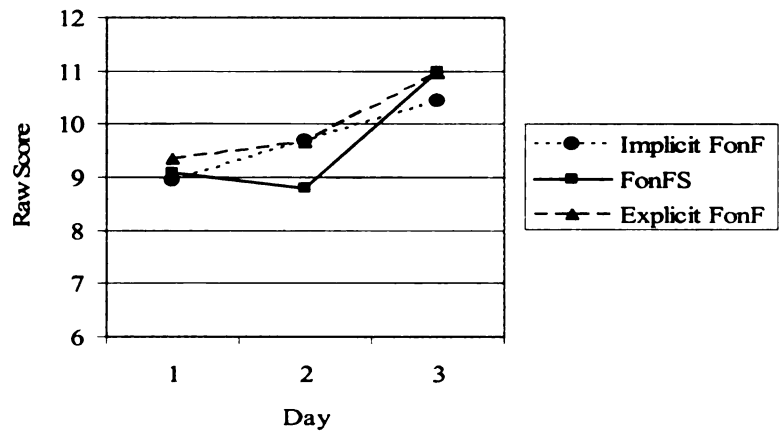

Figure 3. Profile plots of each group for the untimed GJT in terms of the difficult rule throughout the experiment.

Group 2, with FonFS, showed a decrease on Day 2 while Group 1 (implicit FonF: visual input enhancement) and Group 3 (explicit FonF: rule presentation + implicit instruction) did not show any decrease on Day 2 when the participants learned the easy rule. Between Days 2 and 3, all of the groups showed improvement.

The results, shown in Table 11, indicated that there was a statistically significant difference between the groups' performances. However, the ANOVA did not show that there was a significant interaction between time and group, either. Therefore, it can be said that instructional conditions that promoted higher levels of noticing were not found to be significantly better than instructional conditions with lower levels. The highest level of noticing did not significantly facilitate the learning of implicit grammar knowledge relating to a more difficult rule.

Table 11

Repeated Measures ANOVA for Timed GJT (Difficult Rule)

Variable	Df	F	P	Partial Eta Squared
Time	2	2.593	.079	.044
Group	2	4.473	.016	.136
Time*Group	4	.250	.909	.009

Table 12 demonstrates the comparison of each group's performance on the timed GJT in terms of the difficult rule. Based on the observed mean differences, the performance of the groups can be ordered from high to low: Group 3 with explicit FonF > Group 1 with implicit FonF > Group 2 with FonFS.

Table 12

Gain Comparison between Groups for Timed GJT (Difficult Rule)

(I) 1=Implicit FonF 2=FonFS 3=Explicit FonF	(J) 1=Implicit FonF 2=FonFS 3=Explicit FonF	Mean Difference (I-J)	Std. Error	Sig.
1.0	2.0	.0667	.49056	.990
	3.0	-.2833	.49056	.833
2.0	1.0	-.0667	.49056	.990
	3.0	-.3500	.49056	.757
3.0	1.0	.2833	.49056	.833
	2.0	.3500	.49056	.757

For ease of interpretation, Figure 4 shows the pattern of the three groups performances for the timed GJT for the difficult rule. Group 2, with FonFS, decreased on Day 2, while Groups 1, with implicit FonF and 3, with explicit FonF, did not

decrease on Day 2 when the participants took the timed GJT for the difficult rule. Between Days 2 and 3, all of the groups showed improvement. However, the improvement is not statistically significant. The timed GJT showed similar results for the three groups for both the easy and difficult rules.

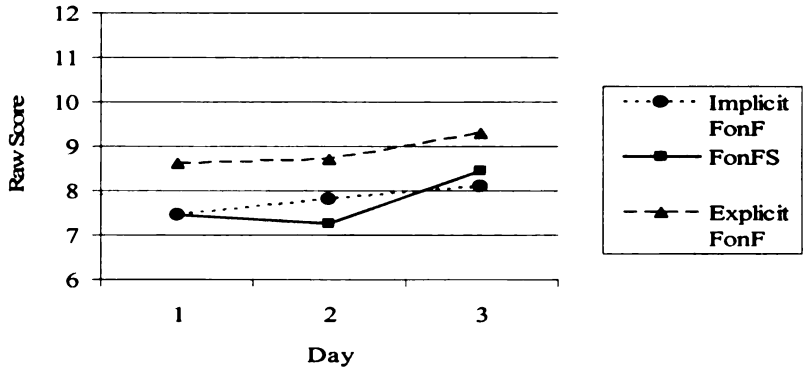

Figure 4. Profile plots of each group for the timed GJT in terms of the difficult rule throughout the experiment.

In sum, three noticing levels facilitated the three groups' learning process for explicit grammar knowledge (easy and difficult rules). However, for implicit grammar knowledge, the learning with three noticing levels was facilitative only for the easy and not for the difficult rule. Additionally, the learning condition with higher noticing levels was effective for both the easy and difficult rules. Groups 2, with FonFS, and 3, with explicit FonF, showed better performance than Group 1, with visual input enhancement. For explicit grammar knowledge, Group 2, with FonFS, was slightly better than Group 3, with explicit FonF, whereas Group 3 was slightly better than

Group 2, with FonFS, for implicit grammar knowledge. For the difficult rule, both the timed and untimed GJTs showed a pattern that Group 3, with explicit FonF, did better than Group 2, with FonFS.

Concerning the role of different noticing levels, Figure 5 yields the profile plot for the three groups' performances in the untimed and the timed GJTs for the difficult rule.

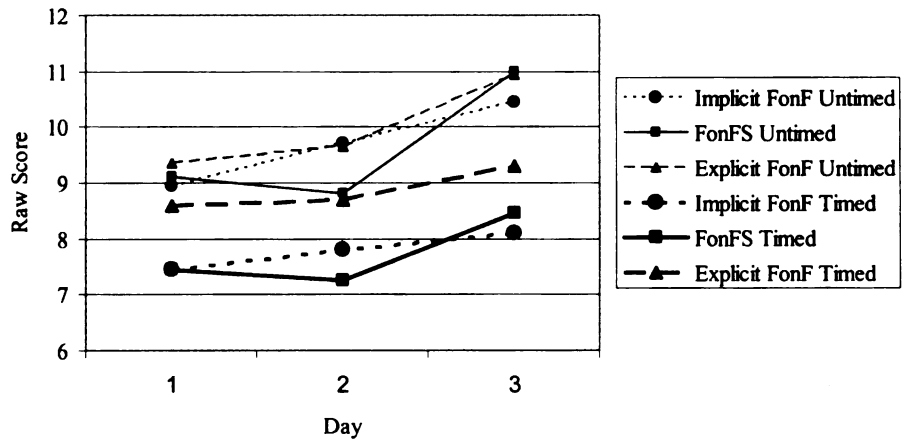

Figure 5. Profile plots of each group for the untimed and timed GJTs in terms of the difficult rule throughout the experiment.

Figure 5 reveals three important elements to understand the results. First, Group 2, with the highest noticing level in FonFS, showed the biggest decrease in the timed and untimed GJTs on Day 2 when the participants had learned the easy rule. Group 3, with the combination of implicit and explicit FonF techniques, showed a slight increase in the timed and the untimed GJTs on Day 2. Group 1, with the lowest

level noticing in implicit FonF technique, showed a steady increase in the timed and the untimed GJTs on Days 2 and 3. These results may suggest that different noticing levels on one task influences the participants' learning patterns when they engage in another, extra task. Second, the gaps between the lowest and highest mean scores for every group show that the results in the untimed GJT went through more changes than the results in the timed GJT. Third, for both the timed and untimed GJTs, Group 3 (visual input enhancement + rule presentation) seems to combine the benefits of Groups 1 and 2. Group 1 (visual input enhancement) shows a stable increase on Days 2 and 3, whereas Group 2 (rule presentation) shows a drop on Day 2 and a sharp improvement on Day 3. Group 3 (visual input enhancement + rule presentation) shows a stable increase on Days 2 and 3, which reflects a considerable improvement in their performance.

In research question 3, concerning time pressure, the results indicated that there was also a significant difference between implicit and explicit grammar knowledge, as shown in Table 13.

Table 13

Repeated Measures ANOVA for Delayed GJTs (Easy Rule)

Variable	Df	F	P	Partial Eta Squared
Time	1	.729	.397	.013
Time pressure	1	83.12	.000	.593
Time * Time pressure	1	6.02	.017	.095
Time * Group	2	.026	.974	.001
Time pressure * Group	2	1.89	.161	.062

These results also show that there was a significant interaction between time and grammar, which means that the retention for implicit and explicit grammar knowledge was significantly different on Day 3, which was four days after the treatment administered on Day 2.

For ease of interpretation, this interaction is represented in Figure 6, which shows that there is a statistically significant difference in the retention of the easy rule in terms of two types of grammar knowledge. The gap between them decreases on Day 3.

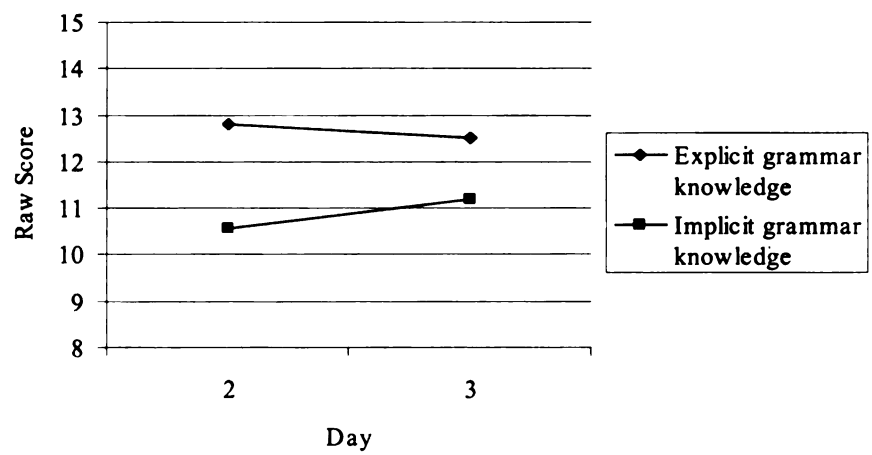

Figure 6. Repeated Measures ANOVA of delayed posttest for the easy rule: profile plots of untimed and timed GJTs between Days 2 and 3.

Thus, the answer to research question 3 is that time pressure influences the participants' grammar knowledge retention for the easy rule. Based on previous research (Ellis, 2005; Loewen, 2003), it can be assumed that the timed GJT measures

the participants' implicit grammar knowledge, whereas the untimed GJT measures their explicit grammar knowledge. Under this assumption, it can be proposed that explicit grammar knowledge is significantly different from implicit grammar knowledge in terms of retention for the easy rule. This is based on the results that indicate a steady increase in implicit grammar knowledge and decrease in explicit grammar knowledge in the posttest.

In terms of grammaticality of the items, another aspect of research question 3, the results in Table 14 indicate that there is also a significant difference between the participants' performance in the grammatical and ungrammatical GJT items before and after the treatment in terms of the easy rule.

Table 14

Repeated Measures ANOVA for Grammatical and Ungrammatical Items for Timed GJT (Easy rule)

Source	Df	F	Sig.	Partial Eta Squared
Grammaticality	1	39.284	.000	.408
Group	2	.304	.739	.011
Grammaticality * Group	2	1.838	.168	.061
Time	1	39.321	.000	.408
Time * Group	2	1.106	.338	.037
Grammaticality * Time	1	4.072	.048	.067

Table 14 shows that there was a significant interaction between grammaticality and time. This means that the improvement of participants'

performances for the grammatical and ungrammatical items is statistically different before and after treatment. Because the results do not show any interaction among groups, it can be concluded that learning conditions with different noticing levels do not influence the participants' performances concerning the grammaticality of items.

For ease of interpretation, this interaction is represented in Figure 7, which shows that there is a statistically significant difference in the GJT for the easy rule in terms of grammaticality of the test items. The participants showed a greater improvement in their performances on judging ungrammatical items than they did on grammatical items. The gap between the raw scores between the grammatical and ungrammatical items increased.

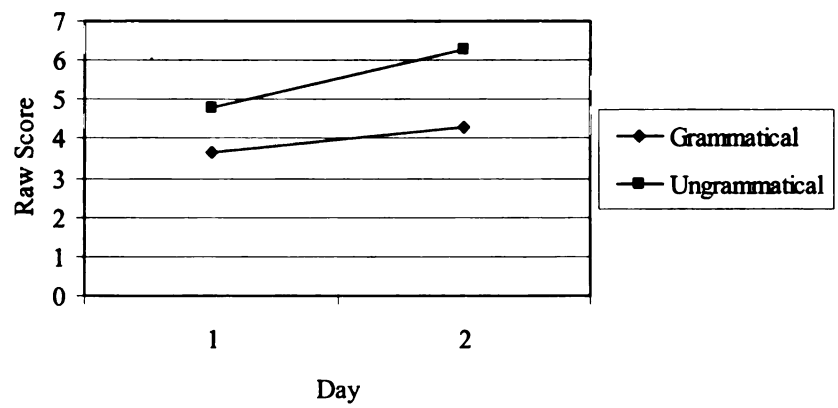

Figure 7. Profile plots of grammatical and ungrammatical items for the timed GJTs for the easy rule.

The results in Table 15 indicated that there was a nearly significant difference between the participants' performances in the grammatical and ungrammatical GJT

items before and after the treatment in terms of the difficult rule.

Table 15

Repeated Measures ANOVA for Grammatical and Ungrammatical Items for the Timed GJT (Difficult Rule)

Source	Df	F	Sig.	Partial Eta Squared
Grammaticality	1	35.315	.000	.383
Group	2	2.325	.107	.075
Grammaticality * Group	2	.000	1.000	.000
Time	1	3.681	.060	.061
Time * Group	2	.464	.631	.016
Grammaticality * Time	1	3.363	.072	.056

It also shows that the interaction between grammaticality and time approaches significance, which means that the improvement of participants' performances for the grammatical and ungrammatical items is nearly significant before and after the treatment. Because the results did not show any interaction with the group factor, it can be concluded that learning conditions with different noticing levels do not influence the participants' performances concerning the grammaticality of the items for the difficult rule.

Figure 8 illustrates that there is a considerable difference in the GJT for the difficult rule in terms of grammaticality of the test items. While ungrammatical items did not show any improvement, the grammatical ones improved greatly. The gap between the two types of grammar knowledge increases because of the improvement of the grammatical items.

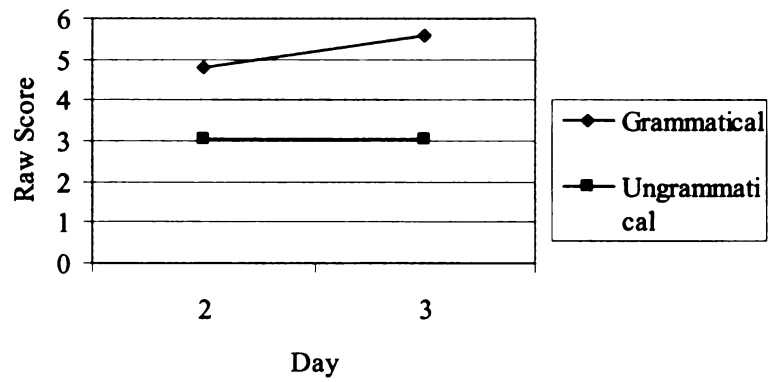

Figure 8. Profile plots of grammatical and ungrammatical items for the timed GJTs for the difficult rule.

Thus, the answer to research question 3 is that the grammaticality of the GJT items influences the participants' performance in the timed GJTs for the easy and difficult rules. Based on the previous research (Ellis, 2005; Loewen, 2003), it might be presumed that grammatical items measure the participants' implicit grammar knowledge, whereas ungrammatical items measure the participants' explicit grammar knowledge. Under this presumption, it might be proposed that grammatical and ungrammatical items on a timed GJT measure significantly different types of grammar knowledge for both easy and difficult rules. The only difference between them is that for the easy rule, the participants' performance for the ungrammatical items showed a significant improvement after explicit instruction with different noticing levels. However, for the difficult rule, the participants' performances for the ungrammatical items did not show any improvement, which is a contrast between the

two rules.

The analysis of research question 4 first used Pearson Correlations to investigate how the measurements are related in terms of time pressure and grammaticality throughout the experiment. The results, shown in Table 16, demonstrate the correlations between the pretests, posttests, and delayed posttests for the easy rule. The timed and untimed GJTs show high correlations with each other. For an easy rule, therefore, this may suggest that time pressure for the GJT does not play an important role in terms of measuring the two types of grammar knowledge. Grammatical and ungrammatical items in the timed and untimed GJTs, however, do not show any correlations either in pretests or posttest. Therefore, it can be said that grammaticality in test items is an important factor in measuring different grammar structures. The results for metalingusitc tests yield the high correlations with untimed ungrammatical items and with timed items throughout the experiment. Therefore, it is hard to say that a metalinguistic test is exclusively correlated to untimed items, which presumably measure explicit grammar knowledge of the easy rule. Overall, the number of cases for significant correlations increases throughout the experiment, even in the delayed posttests on Day 3.

Table 16

Correlations between GJTs for the Easy Rule

	Test	1	2	3	4	5	6	7
1. Timed Gr	Pre	-	-.165	.692**	.058	.320*	.224	.140
	Post	-	.074	.836**	.215	.609**	.562**	.376**
	Delayed	-	.242	.679**	.524**	.130	.363**	.369**
2. Timed Un Gr	Pre		-	.598**	.234	.027	.163	.198
	Post		-	.610**	.508**	-.006	.192	.002
	Delayed		-	.864**	.427**	.650**	.688**	.435**
3. Timed	Pre			-	.218	.280*	.301*	.259*
	Post			-	.451**	.481**	.553**	.300*
	Delayed			-	.587**	.548**	.697**	.513**
4. Untimed Gr	Pre				-	.110	.668**	.099
	Post				-	.246	.634**	.342**
	Delayed				-	.251	.739**	.420**
5.Untimed Un Gr	Pre					-	.753**	.483**
	Post					-	.623**	.363**
	Delayed					-	.831**	.560**
6.Untimed	Pre						-	.413**
	Post						-	.567**
	Delayed						-	.608**
7. Meta-linguistic	Pre							-
	Post							-
	Delayed							-

* Correlation is significant at the 0.05 level (2-tailed).

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

The results shown in Table 17 indicate the correlations between the pre 1 and 2 tests, and posttests for the difficult rule. In the pre 1 and 2 tests, time pressure did not correlate, whereas, in the posttest, time pressure showed positive correlations. Grammaticality for the timed test, finally, showed negative correlations throughout the experiment. Therefore, this suggests that time pressure and grammaticality of items for the difficult rule is a stable indicator that the tests measure different constructs. One noteworthy finding is that the correlations with timed ungrammatical

items with untimed grammatical and untimed ungrammatical items showed a drastic change from negatively significant correlation to positively significant correlation during the experiment. The results for metalingusitc tests did not show high correlations in the pretests except for timed grammatical items, but showed significant correlations in the posttests, except for timed grammatical items.

Table 17

Correlations between GJTs for the Difficult Rule

	Test	1	2	3	4	5	6	7
1. Timed Gr	Pre 1	-	-.159	.723**	-.075	.062	.012	.088
	Pre 2	-	-.345**	.628**	.423**	-.292*	.070	.327*
	Post	-	-.277*	.546**	-.146	.196	.072	.008
2. Timed Un Gr	Pre 1		-	.567**	.251	-.353**	-.085	-.081
	Pre 2		-	.514**	-.410**	.399**	.037	-.146
	Post		-	.654**	.376**	.227	.387**	.466**
3. Timed	Pre 1			-	.113	-.195	-.049	.017
	Pre 2			-	.046	.065	.094	.178
	Post			-.	.213	.352**	.394**	.412**
4.Untimed Gr	Pre 1				-	-.324*	.486**	-.134
	Pre 2				-	-.292*	.520**	.214
	Post				-	.097	.672**	.417**
5.Untimed Un Gr	Pre 1					-	.638**	.191
	Pre 2					-	.665**	.061
	Post					-	.799**	.401**
6.Untimed	Pre 1						-	.057
	Pre 2						-	.237
	Post						-	.555**
7. Meta-linguistic	Pre 1							-
	Pre 2							-
	Post							-

* Correlation is significant at the 0.05 level (2-tailed).

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

Overall, the number of cases for significant correlations increases between

the pretests and posttests, which is similar to the case for the easy rule. In particular, metalinguistic tests and the untimed GJT showed the increase of significantly correlated cases after the treatment on Day 3 was administered.

The results from the retrospective questionnaire also might provide some information related to research question 4. Table 18 shows the results of the retrospective questionnaire that asked about the source of the grammaticality judgment for the timed GJT between grammar-related "feel" or grammar "rule".

Table 18

Descriptive Statistics for the Source of Grammaticality Judgment for the Timed GJTs

	Feel Mean (%)	Rule Mean (%)	SD
Group 1 (N=20)	45.5	54.5	27.43
Group 2 (N=20)	51.5	48.5	24.93
Group 3 (N=20)	56.0	44.0	32.02
Total (N=60)	51	49	28.13

Out of the 60 participants, six answered they used 100% of grammar "feel", whereas another six answered they used 100% of grammar "rule". The remaining 48 participants answered they used both grammar "feel" and "rule". The SD shows a very large deviation among the participants. The results indicate that participants are very arbitrary in using grammar "feel" or "rule" even when they judge grammaticality in L2 under time pressure. The One-way ANOVA showed there was no statistical

difference between groups. This indicates that instruction types do not affect L2 learners' grammar sources for grammaticality judgment.

Thus, the answer to research question 4 is that there was no conclusive evidence which demonstrated that the timed and untimed GJTs keep measuring two distinctively different structures in terms of the easy rule. For the difficult rule, time pressure seems to play a significant role in measuring the two different structures. However, grammaticality of the items plays an important role in measuring two distinctive structures for both easy and difficult rules. In all, the measurements show progressively higher correlations each day for easy and difficult rules.

Discussion

Concerning the first research question, which asked about the effects of grammar instruction with three noticing levels on the easy rule, learning with noticing influenced the learning of the easy grammatical rule in terms of implicit and explicit grammar knowledge. This result is in line with the major claim that noticing enhances the effectiveness of grammar instruction for a simple, categorical rule (Alanen, 1995; DeKeyser, 1995; Doughty, 1991; Doughty & Williams, 1998; N. Ellis, 1993; Norris & Ortega, 2001; Robinson, 1996, 1995; Williams & Evans, 1998). The studies just referenced did not specify whether the measurements were

designed for implicit or explicit grammar knowledge. Based on the results of the present study, however, it can be assumed that noticing facilitated the acquisition of the easy rule for both types of grammar knowledge. In past studies on the effectiveness of instruction with different noticing levels, grammar knowledge was measured using oral or written production tests (Alanen, 1995; DeKeyser, 1993; Doughty, 1991; Williams & Evans, 1998). Since these types of tests encourage learners to produce language with relatively few constraints and with meaningful responses, it can be said that the measurements might have gauged implicit grammar knowledge appropriately. N. Ellis (1993) and Robinson (1996) used grammaticality judgment tests to measure learners' transfer of grammar knowledge to well-formed, new sentences. Since these tests measured learners' performances in a discrete and decontextualized fashion, the results might reflect the improvement of the learners' explicit grammar knowledge. Overall, the results of the present study support the notion that explicit FonF and FonFS (Norris & Ortega, 2001) facilitate the acquisition of simple and categorical rules for implicit and explicit grammar knowledge.

According to many studies (Alanen, 1995; DeKeyser, 1995; Robinson 1996, Williams & Evans, 1998; Norris & Ortega, 2001), learning becomes facilitated when the participants learn with a higher noticing level, especially when they learn

with FonF with high obstrusiveness, and when they learn through more elaborate types of input enhancement. The results of the present study are consistent with this view. Due to the higher noticing level, explicit FonF techniques such as rule presentation are more effective than less obtrusive FonF techniques such as input flood or visual input enhancement (Alanen, 1995; DeKeyser, 1995; Robinson 1996, Williams & Evans, 1998; Norris & Ortega, 2001).

The present study, however, did not yield the consistent results compared with the study of Doughty in 1991. Doughty used relativization in English as the target rule with three groups: a meaning-oriented group (MOG) with visual input enhancement, a rule-oriented group (ROG) with the rule presentation, and a control group. The measurements were written and oral production tests. The results demonstrated that both MOG and ROG showed significant improvement, whereas the results of the present study found that the rule presentation group showed significantly better improvement than the visual input enhancement group for the easy rule. This discrepancy can be explained in three ways. First, in Doughty's study, the MOG received the combined treatment of the two less obstrusive FonF techniques (highlighting and capitalization). In addition, they also received a lexical rephrasing of the rule via the dictionary assistance and a semantic rephrasing of the rule via the reformulations of the original sentences. In the present study, the

implicit FonF group did not receive any help concerning lexical or semantic repetition. Therefore, these additional assistances may explain the differences in the results between Doughty's research and the present study. Second, the relative clauses could have been regarded by the learners as a subjectively difficult rule even if classified as a relatively easy rule (Ellis, 2006). In Doughty's study (1991), the participants were intermediate level learners. In contrast to the case of an easy rule, for a difficult rule, it is hard to classify the greater effectiveness of rule presentation compared with the effectiveness of visual input enhancement. Third, the measurements in Doughty's study (written and oral tests) could have been biased for the comprehension and implicit grammar knowledge of the participants. Since the written test was conducted in the learners' L1, it is difficult to assume that writing in L1 measures the same construct as a GJT. Therefore, the measurements could have gauged learner comprehension of the reading material, not grammar knowledge. Concerning the oral test in Doughty's study, it might have measured the learners' implicit grammar knowledge rather than explicit grammar knowledge. In the context of the implicit grammar knowledge, the comparative effectiveness of rule presentation and visual input enhancement has not been proven clearly for both easy and difficult rules.

The second research question asked if grammar instruction with different

noticing levels influences L2 learners' grammar accuracy for difficult rules in terms of implicit and explicit grammar knowledge. In this study, learning *with* noticing influenced the acquisition of the difficult rule only and in terms of explicit, rather than implicit, grammar knowledge. This result is in line with two previous studies (N. Ellis, 1993; Robinson, 1996) that showed that the combination of rule presentation and examples is more effective for improved learner performances in two kinds of measurement for explicit grammar knowledge. One is the measurement of the explicit knowledge of the rules and well-formedness (N. Ellis, 1993) and the other is the transfer to grammaticality for new sentences (Robinson, 1996). Both measurements are similar to the metalinguistic test and the untimed GJT that were used in the present study. The results show the possibility that more noticing helps L2 learners successfully acquire more difficult grammar rules when instruction of the rules is explicit.

However, the results of the present study are not in line with DeKeyser (1995) and Williams and Evans (1998), which failed to show the benefits of more noticing when learning a difficult grammar rule. The disagreement may stem from differences in the ways explicit grammar knowledge was measured. In the present study, an untimed GJT was used to measure explicit grammar knowledge, whereas DeKeyser and Williams and Evans used a test that had the learners complete or

write sentences. Because the participants were not allowed time to revise their productions and primarily focused on meaning, the task may have measured the participants' implicit, more than their explicit, grammar knowledge. This assumption is consistent with the result of the present study showing that various noticing levels do not influence learners' acquisition of implicit grammar knowledge when they are more complex or difficult. Therefore, it can be said that, regarding more difficult rule acquisition through implicit grammar instruction, the amount of noticing required to make a difference in acquisition is still unknown. This result leads to three assumptions. First, the present study seems to point out that varying levels of noticing may not play a role in learners' acquisition of implicit grammar knowledge for difficult rules. Second, it also could be that the levels of noticing were not as disparate as needed for facilitated acquisition of implicit grammar knowledge for difficult rules. Lastly, it could be that the difficult language form was in fact just too difficult for the students involved in this study. Perhaps students at a higher level of proficiency could have provided information about the relationship between the acquisition of implicit grammar knowledge and appropriate noticing levels for the difficult rule.

The notion, *explicit focus on implicit tuning* (N. Ellis, 2005), can explain the improvement of Group 2's implicit grammar knowledge on the easy rule,

supporting the possibility of an interface between implicit and explicit grammar knowledge. Group 2, with FonFS, received only rule presentation. Therefore, the learning was an exclusively explicit process. However, the performance of Group 2, with FonFS, on the timed GJT showed a significant improvement. According to N. Ellis (2005), "declarative pedagogical grammar rules contribute to the conscious creation of utterances whose subsequent usage promotes implicit learning and proceduralization" (p. 305). In other words, explicit learning results in explicit grammar knowledge, which, in turn, results in implicit learning and the proceduralization of the declarative knowledge during the subsequent input processing.

The results of the GJT for the difficult rule showed that visual input enhancement, rule presentation, and the combination of both encourage L2 learners to use implicit and explicit grammar knowledge differently (Figure 5). After Day 1 (the pretest), Group 1, with visual input enhancement, showed a steady improvement in their performance, whereas Group 2, with rule presentation, showed a sharp drop on Day 2 (the easy rule learning) and a sharp increase on Day 3 (the difficult rule learning). The participants of the combination of the two techniques showed a slight increase on Day 2 and a moderate increase on Day 3. The results show that the type of instruction or learning changes the L2 learners' pattern of

grammar use. The lower the noticing level of the instruction, the more opportunities L2 learners have to use implicit knowledge. The higher the noticing level of the instruction, the more opportunities L2 learners have to use explicit knowledge. Therefore, it can be said that noticing levels influence L2 learners' learning modes and that less noticing encourages L2 learners to perform in a stable way for complex tasks.

Explicit FonF and FonFS were found equally effective in the comprehensive meta-analysis by Norris and Ortega (2001). Their analysis demonstrated that focused L2 instruction results in substantial target-oriented gains—that explicit types of instruction are more effective than implicit types. In the present study, explicit FonF and FonFS were equally effective for the easy rule. However, for the difficult rule, FonFS was less effective than both the explicit and implicit FonF in terms of mean scores and stability in the participants' performances. To account for the difference, two explanations are possible. First, the issue of rule difficulty was not considered carefully in Norris and Ortega (2001), whose main focus was L2 instruction types such as implicit/explicit instruction and FonF/FonFS/FonM. Rule complexity was regarded as one of the moderator variables such as learners' age, language aptitude, and L2 background. Therefore, this result could be biased for easy rules. Second, no difference was made in the measurements in terms of implicit and explicit grammar

knowledge in the study. Therefore, the meta-analysis might be biased for explicit grammar knowledge for easy rules, which may have exaggerated the effectiveness of FonFS.

The effectiveness of FonF over FonFS for the difficult rule in the present study is consistent with the claim of Doughty and Williams (1998) that "FonFS entails the well-known pitfall that too much attention to form results in deliberate rather than automatic language use" (p. 245). This means that raising the noticing level by providing rule presentation only without a proper subsequent meaning-oriented task does not result in optimum L2 acquisition. However, FonF attempts an integration of form into communication-oriented instruction (Long, 1991). The aim of FonF techniques is to engage L2 learners' attention to facilitate more effective noticing of these form-meaning relationships. In the present study, Group 2, which received the highest noticing by rule presentation with out-of-context examples (FonFS), showed the most unstable performances throughout the experiment, whereas Groups 3 and 1, which received FonF, showed consistent increases in performances. Therefore, the results suggest that for difficult rules, L2 learning is facilitated using FonF techniques by combining various noticing levels through rule presentation (i.e., high degree of noticing) and visual input enhancement (i.e., low degree of noticing).

One further noteworthy finding is that the present study supports the claims

about the distinctiveness of the two types of grammar knowledge in terms of their durability. The results of the delayed posttests for the easy rule (Table 13 & Figure 6) suggested that these GJTs measured two distinctive structures. Therefore, it is assumed that the two tests might have measured implicit and explicit grammar knowledge, respectively. The increase of the participants' performances on the timed GJT posttest suggested that the participants' implicit grammar knowledge remained stable, even though the time gap was only four days. However, the participants' explicit grammar knowledge decreased, which showed that explicit grammar knowledge is not stable under these conditions. This result is partially consistent with Norris and Ortega's study (2001), in which the durability of L2 instruction was affirmative, especially when treatments were long-term. Because separate measurements of implicit and explicit grammar knowledge were not considered in the studies reviewed in their meta-analysis, it is hard to tell if the durability is an aspect for both implicit and explicit grammar knowledge. Since the measurement of the two types of grammar knowledge has been investigated separately (Ellis, 2005; 2004; Erlam, 2006; Loewen, 2003), the results of the durability in Norris and Ortega (2001) should be revisited accordingly. Thus, more accurate explanation should be provided concerning the difference between the durability of implicit and explicit grammar knowledge.

Overall, it can be suggested that the explicit FonF is more effective than the implicit FonF or FonFS for both easy and difficult rules. The explicit FonF technique seems to encourage learners to combine the benefits of stability and durability in implicit learning with the accelerative effects of explicit learning. The combination of both may result in a more successful L2 acquisition.

The third research question considered the influence of time pressure or grammaticality on the results of the timed and untimed GJTs. Time pressure was an important factor in deciding which type of grammar knowledge L2 learners use (Ellis, 2005; Erlam, 2006; Loewen, 2003). In the present study, L2 learners performed significantly better on the untimed rather than the timed GJT, which is consistent with the previous studies. However, in terms of the performance on grammatical and ungrammatical items in the timed GJT, the present study showed only partially consistent results with previous studies according to the difficulty of the rules.

For the difficult rule, the participants did better on the grammatical than on the ungrammatical items. The results were consistent with Loewen (2003). Three potential factors can be identified. First, L2 learners might have gone through a three-step cognitive process in order to decide the grammaticality of items, which are semantic processing, noticing, and reflecting (Loewen, 2003). For ungrammatical items, learners might have been supposed to go through the whole process in order to

locate the ungrammatical parts in the GJT items. Due to the complexity of the rule, they might not have gone through the whole process. For grammatical items, however, they could have stopped the process at the second step to decide the grammaticality.

Second, in addition to the first factor, limited attentional capacities might have played a role. According to a single-resource, limited-capacity model of attention, attentional capacity is generally available and limited (Robinson, 2003). Increases in task complexity drain attentional resources, affecting the fluency, accuracy, and perception of input and intake. Various L2 tasks make differential demands on attention, which influences production, comprehension, and learning of L2 learners (Robinson, 2003). In the present study, judging ungrammatical items under time pressure may have imposed an extra cognitive load on the participants' performances, and it probably caused them to miss the final step, reflecting, leading them to incorrect grammatical judgment.

The third factor is that in terms of the types of grammar knowledge, judging ungrammatical items under time pressure is a complex task for L2 learners. The rationale is that judging ungrammatical items requires them to use explicit grammar knowledge, whereas time pressure forces them to rely upon implicit grammar knowledge (Ellis, 2005; Loewen, 2003). The learners may experience some conflicts in simultaneously using the two different types of grammar knowledge. In the case of

the difficult rule, the complexity of the task may impose an extra cognitive load on the limited attentional capacities of the learners. This could be why they performed poorly on the timed GJT for the ungrammatical items for the difficult rule.

By contrast, for the easy rule in the present study, the participants might have done better on the ungrammatical than the grammatical items, owing to two factors. First, even if the learners experience a conflict in using both types of grammar knowledge for judging ungrammatical items under time pressure, the ease of the task might have demanded less attentional capacity than the difficult rule. The participants might have had enough time and attentional resources left, used the resources, and gone through the three-step process for judging the ungrammatical items. The FonF and FonFS techniques might have also enhanced their performance on the ungrammatical items by raising their noticing levels and facilitating the second step, noticing.

Secondly, in addition to the proper allocation of the attentional capacity, it is also presumed that the participants' declarative knowledge became proceduralized on Day 3. In the process, their grammar knowledge could be optimally activated upon "reflecting" on ungrammatical items. Therefore, it can be presumed that less demanding tasks and treatments with noticing led the learners to use their attentional capacities to understand and decipher ungrammatical items based on easy rules.

The fourth research question is closely related to the third in that both concern the validity of the measurements and interference factors that may lower the validity of the tests. It is believed that implicit and explicit knowledge are two dissociable, separate constructs (N. Ellis, 2005). Therefore, the efforts to measure them separately may be reasonable. In the present study, the timed GJT was supposed to measure implicit grammar knowledge, whereas the untimed GJT and metalinguistic test were supposed to measure explicit grammar knowledge. The problem is that it is not certain that each of these grammar systems operates in isolation, even though a distinction has been made between implicit and explicit learning. Rather, for a grammar learning task, performance is likely to involve a subtle, cooperative combination of implicit and explicit learning processes.

The present study supports the claim that the knowledge gained as a result of interacting with a complex learning task is likely to involve both implicit and explicit aspects, rather than being solely one or the other (Berry & Broadbent, 1988). In line with the claim about the interaction, two results of the present study raise the possibility of an interface between the two types of grammar knowledge. First, the Pearson Correlations (Tables 16 & 17) show that on Day 1, the tests' constructs did not overlap; the measurements were less correlated with each other than Days 2 and 3 in terms of time pressure and grammaticality. However, as the experiment progressed,

the number of correlations among the assessment measures increased overall for both rules. In the case of the easy rule, more correlations resulted than the difficult rule. The increase in the significant correlations between the measures that are supposed to gauge the two distinctive types of knowledge raises the possibility that they interacted and interfaced increasingly throughout the experiment. Task familiarity, task ease, and facilitated attention allocation might have eased the interface. This claim is also supported by the results of Pearson Correlations for the difficult rule. The participants did not use the two types of grammar knowledge as freely as they had done for the easy rule. They seem to use exclusively either implicit or explicit grammar knowledge for the tests resulting in drastic changes from negatively significant correlations to positively significant throughout the experiment.

This is also true for the results of the metalinguistic tests. Even though metalinguistic tests are presumed to be a measurement for explicit grammar knowledge (Ellis, 2005), the present study shows that they are significantly correlated with other measurements except in the case of the timed GJT for grammatical items for the difficult rule. It is presumed that more studies are required to investigate what metalinguistic tests measure and how they are related in connection to the two grammar structures being measured.

Another supporting result, which claims the possibility of an interface

between the two distinctive types of grammar knowledge, comes from the results of retrospective questionnaires (Table 18). The majority of the participants answered that they had used both grammar "feel" and "rule" for the timed GJT. This means that even if they were under pressure, they did not use implicit grammar knowledge exclusively. Based on the results, it can be assumed that L2 learners increase using both types of grammar knowledge as they become more familiar with the test items and the target grammar rules.

The increase in the Pearson Correlations between the timed and untimed GJTs throughout the experiment may also be interpreted in terms of automaticity. In the present study, reading the same items for the timed and untimed GJTs four times during Days 1 and 2 might have provided the participants a repetition effect for practice and facilitated the automaticity of using the grammar knowledge by improving their performances on the GJT with fewer errors. In other words, the consistent repetition of the tests might have freed attentional resources and resulted in decreased error rates. It can also be suggested that the more automatic the learners' access to frequent grammar knowledge is, the more fluent the language use (Ellis, 1997). Therefore, it is hard to present a reasonable explanation about the increase of the Pearson Correlations. On the one hand, it can arise from the interface of explicit and implicit grammar knowledge. In this case, a significant reconstructuring from

explicit to implicit knowledge might have happened in the learning process. On the other hand, the increase can be from the practice effect and facilitated automaticity, which were caused by repetitive exposure to the same tests throughout the experiment. In this case, only a speeding-up process of explicit knowledge might have been involved in the learners' performances. Only if the relationships among implicit and explicit learning and knowledge, along with memory, become clear will the interface between implicit and explicit knowledge and the automaticity be addressable (N. Ellis, 1993).

Implicit knowledge is more stable and durable than explicit (Berry & Dienes, 1993). However, this does not mean implicit learning is the only way to improve implicit knowledge. Explicit FonF and FonFS techniques are effective for the learning of easy rules in terms of both implicit and explicit knowledge. FonF techniques are effective for both implicit and explicit knowledge for the learning of difficult rules. In addition, implicit FonF seems to encourage L2 learners to use more implicit modes than explicit FonF or FonFS, which results in a more stable improvement of knowledge. Finally, the interface between implicit and explicit knowledge may be possible through freed cognitive resources with the help of automatization. Therefore, instead of taking a side on either uninstructed or instructed learning, the dynamic possibilities might be suggested by accepting the view that knowledge can be gained

and represented either implicitly or explicitly (Doughty & Williams, 1998). In the process, explicit learning can facilitate the L2 acquisition process regardless of whether the learners are receiving implicit or explicit instruction from the teachers, resulting in an improvement of both implicit and explicit grammar knowledge together or separately (N. Ellis, 1994). Importantly, the process depends upon various conditions, such as rule complexity and task types.

Limitations and Pedagogical Implications

The results of this study should not be interpreted without some caution because of its limitations, four of which are described here. First, only three types of tests, timed and untimed GJTs and metalinguistic tests, were used for measuring implicit and explicit grammar knowledge. The three tests measure only receptive grammar knowledge, not productive. Because it is not clear whether comprehension and production draw on completely different sets of rules (DeKeyser, 1997), the results of the present study may elicit limited results in terms of measuring the two types of grammar knowledge. More production-oriented tests have been found to be valid measurements of the two constructs, such as an oral imitation test, an oral narration test (Ellis, 2005), and an elicited imitation test (Erlam, 2006). Therefore, more variable tests would have brought about more robust results concerning the measurement of the two types of

grammar knowledge.

Second, this study did not have a control group. Having a control group that did not receive any instruction with noticing might have provided a more concrete basis for comparison for determining the influence of instruction with various noticing levels on learning the two types of grammar knowledge. The control group might have presented clear information about learning with or without awareness. Therefore, the results might have been compared with the performances of learning with three noticing levels, operationalized by implicit FonF, FonFS, and explicit FonF.

Third, the short duration of the treatment might have prevented the participants from learning the grammar rules completely. They learned the two rules through reading for a total of forty minutes. It may not have been long enough to evaluate the effectiveness of the treatments. Similarly, the assessments given to measure acquisition and differences among the groups and types of grammar knowledge were not paced very far from the treatment sessions. Immediacy effects may have limited group differences in scoring. In future studies, more time should be spent learning the rules, and more time should be given before the learners are tested. In particular, delayed posttests, administered two weeks or one month after treatment, would clarify issues regarding long-term retention of learning as a result of treatment in the different conditions.

Finally, because some participants were already familiar with the two rules, it was hard to tease apart the effectiveness of the treatment from their prior knowledge. It is possible that once the participants recognized the rules through the three kinds of noticing levels, they could have used their prior knowledge and performed well on the two GJTs. If this factor had been controlled before the experiment, the results could have been more valid and reliable.

In spite of the limitations, the present study has two major pedagogical implications. First, this study demonstrates that there may be a different facilitative effect between explicit FonF and FonFS. After the study of Norris and Ortega (2001), explicit FonF and FonFS have been widely regarded as having almost the same effect in SLA. The present study raises a question about their assumption by providing evidence that for difficult rules, explicit FonF is more effective than FonFS in that the former combines the benefits of implicit and explicit grammar knowledge (i.e., stability/durability and accelerative effect). Therefore, in teaching/learning settings, it seems essential to couple rule presentation with meaningful context where learners can learn the target rules in both explicit and implicit learning mode.

Second, teachers' awareness of which grammar structures are facilitated by a task and measured by a test can help L2 learners access implicit and explicit knowledge at optimum levels. A learning task involves a cooperative combination of

implicit and explicit aspects (N. Ellis, 2005). If L2 learners are exposed to well-balanced tasks in terms of noticing levels, they will properly utilize two types of grammar knowledge in learning. In turn, the result of measurements after class in terms of time pressure and grammaticality can be beneficial feedback to evaluate the teaching/learning process regarding the optimum interaction of the two types of grammar knowledge. Thus, the integration of noticing levels in a task and measurements in a test is essential for a successful L2 classroom environment.

Appendix A

Bio-data Questionnaire

Research Code _____

1. Basic Questions
1-1. First name_____ Family name_____
1-2. Gender: M / F
1-3. Age: _____ 1-4. Race/ethnicity: _____
1-5. Email _____
1-6. The class (you are currently taking at LCC) _____
1-7. What is your primary language? If you have more than two, please specify.
_____
_

2. English Learning
2-1. How old were you when you started to learn English? ____ years old
2-2. How long have you studied English? __ months
2-3. Where did you first learn English?
2-4. How long have you studied in America? _____months (The Total)
2-5. How fluent do you feel you are in English? (Please check where applies)

Category	Very fluent	Fluent	Moderate	Less than moderate	Needs much improvement
Overall					
Listening					
Speaking					
Reading					
Writing					

2-6. Please circle *one* among the following that describes your level of English appropriately.
(1) Low-beginning (2) Mid-beginning (3) High-beginning
(4) Low-intermediate (5) Mid-intermediate (6) High-intermediate

2-7. If you have taken a standardized English test such as the TOEFL or the SPEAK test? If so, please answer the following:
Test (month/year): _____(___/___) Score: _____
Test (month/year): _____(___/___) Score: _____

2-8. List all of the English courses you have taken at MSU:

The courses you previously took	Courses you are currently taking	Remarks

2-9. Have you ever spent time in one of the English speaking countries?

Yes____ No ____

If the answer is Yes, please answer the following questions.

2-9-1. What was the purpose? Academic_____ Tourism_____ Other_____

2-9-2. How long have you spent in the country, total? ____ months _____ weeks

2-10. Have you taken English grammar courses from any institutions? Yes ___ No ___

If the answer is Yes, please answer the following questions.

2-10-1. Please specify the place. Country _____ Institution _____

2-10-2. How long (in total) have you taken the courses? ____ months _____ weeks

2-10-3. Do you think the courses were helpful in developing your English skills?

Yes___ No___

If Yes, please specify in what ways grammar courses are helpful.

_____

If No, please specify in what ways grammar courses would have been improved.

_____

All information will be confidential and used only for the purpose of this study.

Your help is very much appreciated.

Appendix B-1

A Learning Task for the Easy Rule (Group 1)

Reading 1-1. Sweepstakes or Scam (=an act to deceive others financially for unlawful benefits)?

You MAY get a letter every week with your name printed on it telling you that you have won a prize or a large amount of money. Many people in the U.S. WILL get these letters.

We often get mail from sweepstakes companies. A sweepstakes is like a lottery. To enter a sweepstakes, you usually HAVE TO mail a postcard. Even though the chances of winning are very small, many people enter because they think they have nothing to lose and WILL be able to win something.

CAN these offers of prizes be real? Some of them CAN be, but not all of them. Why WOULD someone give you a prize for doing nothing? A sweepstakes IS SUPPOSED TO be a chance for a company to promote its products, such as magazines. But some of the offers MIGHT be deceptive, and you MUST read the offer carefully. The government estimates that Americans MIGHT lose more than one billion dollars every year through "scams," or tricks to take your money. You'D BETTER NOT let them take your money. "ARE they ALLOWED TO do that in the U.S.?" you MIGHT ask. They SHOULDN'T be permitted to do that, but there is not a law that forbids them from sending mail.

You SHOULD be careful of letters, e- mails, and phone calls that tell you:

- You MUST NOT delay your chance: Act now or the offer WILL expire!

- You MAY already be a winner. To claim your gift, you only HAVE TO pay postage and handling. You DON'T HAVE TO pay for the wonderful prize.

You SHOULD NEVER give out your credit card number or Social Security number if you are not sure who is contacting you about the sweepstakes.

Senior citizens SHOULD be especially careful of scams. Eighty percent of the victims of scams are 65 or older. They often think that they HAVE GOT TO buy something in order to win a prize and often spend thousands of dollars on useless items. Or they think that their chances of winning MIGHT increase if they buy the company's product. But in a legitimate sweepstakes, you DON'T HAVE TO buy anything or send any money. The law states that "no purchase necessary" MUST appear in big letters. In addition, the company IS NOT SUPPOSED TO hide your chances of winning.

How CAN you avoid becoming the victim of a scam? If you receive a letter saying you are a guaranteed winner, you OUGHT TO read it carefully. You DON'T EVEN HAVE TO read it at all. Actually most people just throw this mail in the garbage.

**Fill in the blanks with the correct words based on your reading.

1. But some of the offers MIGHT (1)_____ deceptive, and you MUST (2)_____ the offer carefully. (Keys: be, read)

2. But in a legitimate sweepstakes, you DO(3)_____ HAVE (4)_____ buy anything or send any money. (Keys: n't, to)

3. In addition, the company IS NOT (5)_____ TO (6)_____ your chances of winning. (Keys: supposed, hide)

4. They often think that they (7)_____ (8)_____ (9)_____ buy

something in order to win a prize. (Keys: have got to)

5. (10)_____ they (11)_____ TO do that in the U. S.? (Keys: Are, allowed)

6. You SHOULD (12)_____ give out your credit card number or Social Security number. (Key: never)

7. You (13)_____ even (14)_____ to read it at all. (Keys: don't, have)

Reading 1-2. Telemarketing

Salespeople place about 100 million calls a year. They use an automatic dialer to call hundred of homes at the same time. Some of these calls MIGHT offer you a better long-distance telephone service or let you know about a special rate for cable or DSL service. But sometimes these calls CAN be very annoying. Now there is something you CAN do about it.

In 2003, the U.S. government created a "Do-Not-Call" registry. You CAN register your phone number online or by phone. If you do so, most telemarketers ARE NOT PERMITTED TO call you for five years. However, some telemarketers CAN still call you: political organizations and charities. Also, companies with which you do business, such as your bank, MAY call you to offer you a new product or service. However, when they call, you CAN ask them not to call you again. If you make this request, they ARE NOT ALLOWED TO call you again.

You CAN register up to three numbers on the "Do-Not-Call" national registry, including your cell phone number. It MAY take three months before the "do-not-call" order goes into effect. In the meantime, here are some suggestions for dealing with telemarketers:

- You COULD get a Caller ID to see who is calling. (About 40% of households

have them.)

- You COULD ask your phone company if they have a "privacy manager," a service that screens unidentified phone calls. The phone WILL NOT even ring in your house unless the caller identifies himself.
- If you are not interested in the offer, you CAN try to end the phone call quickly. But you HAD BETTER NOT get angry at the caller. He or she is just trying to make a living.
- If you do decide to buy a product or service, remember, you MUST NOT give out your credit card number if you are not sure who the caller is.

**Fill in the blanks with the correct words based on your reading.

1. Some of these calls MIGHT (15)_____ you a better long-distance telephone service or (16)_____ you know about a special rate for cable or DSL service. (Keys: offer, let)

2. But you HAD (17)_____ (18)_____ get angry at the caller. He or she is just trying to make a living. (Keys: better, not)

3. The phone (19)_____ (20)_____ even ring in your house unless the caller identifies himself. (Keys: will, not)

4. If you do decide to busy a product or service, remember, you (21)_____ (22)_____ give out your credit card number. (Keys: must, not)

5. Companies with which you do business, such as your bank, (23)_____ call you to offer you a new product or service. (Key: may)

6. Most telemarketers ARE (24)_____ (25)_____ TO call you for five years. (Keys: not, permitted)

Appendix B-2

A Learning Task for the Difficult Rule (Group 1)

Reading 1. Life 100 Years Ago

Most of us are amazed by the rapid pace of technology at the beginning of the twenty-first century. We often wonder what life will be like 20 or 50 or 100 years from now. But do you ever wonder what your life WOULD HAVE BEEN like IF you HAD BEEN alive 100 years ago?

IF you HAD LIVED around 1900 in the U.S., you WOULD HAVE EARNED about $200-$400 a year. You probably WOUDN'T HAVE GRADUATED from high school. Only six percent of Americans had a high school diploma at that time. You might wish you HAD LIVED in the 1900s IF you do not like studying. IF you HAD BEEN a dentist or an accountant, you WOULD HAVE MADE $2,500 a year. Therefore, if you HAD BEEN ABLE TO become doctor 100 years ago, you WOULDN'T HAVE BEEN rich by today's standards. IF you'D BEEN a child living in a city, you MIGHT HAVE HAD to work in a factory for 12-16 hours day.

IF you HAD GONE to a doctor, it'D HAVE BEEN a male and he probably WOULDN'T HAVE HAD a college education. Only ten percent of doctors at that time had a college degree. And IF you'D GIVEN BIRTH to a baby at that time, it WOULD HAVE BEEN born at home. IF you HAD GOTTEN an infection at that time, you probably WOULD HAVE DIED because antibiotics HAD NOT BEEN discovered yet. The leading causes of death at that time were pneumonia, influenza, and tuberculosis.

What about your home? IF you'D LIVED 100 years ago, you probably WOULDN'T HAVE HAD a bathtub or a telephone. You WOULD HAVE WASHED your hair about once a month. IF you don't like bathing, you may wish you HAD LIVED 100 years ago. IF you don't like modern technology and its negative effects, you might WISH you'D LIVED around 1900.

Do you think you WOULD HAVE BEEN happy with life 100 years ago? Do you really WISH you HAD LIVED around 1900?

** Fill in the blanks with the correct words based on the reading.

1. Therefore, IF you (1)_____ BEEN ABLE TO become doctor 100 years ago, you (2)_____ HAVE BEEN rich by today's standards. (Keys: had, wouldn't)

2. IF you don't like bathing, you may WISH you (3)_____ (4)_____ 100 years ago. (Keys: had, lived)

3. But do you ever wonder what your life (5)_____ HAVE (6)_____ like (7)_____ you (8)_____ BEEN alive 100 years ago? (Keys: would, been, if, had)

4. IF you (9)_____ BEEN a child living in a city, you MIGHT (10)_____ (11)_____ to work in a factory for 12-16 hours day. (Keys: had, have, had)

5. And IF you'D (12)_____ BIRTH to a baby at that time, it (13)_____ HAVE (14)_____ born at home. (Keys: given, would, been)

6. IF you HAD LIVED 100 years ago, you probably (15)_____ HAVE HAD a bathtub or a telephone. (Key: wouldn't)

7. IF you (16)_____ GONE to a doctor, it (17)_____ HAVE BEEN a male and he probably WOULD (18)_____ HAVE HAD a college education. (Keys: had, would, not)

Reading 2. A Middle-aged Woman to Her Daughter

It's great that you're thinking about becoming a doctor or astronaut. When I was your age, I didn't have the opportunity you have today. You can be anything you want, but IF you HAD BEEN a woman growing up in the fifties, your opportunities WOULD HAVE BEEN limited. IF you'D GONE to college, you MIGHT HAVE MAJORED in nursing or education, or you COULD HAVE TAKEN a secretarial course.You probably WOULD HAVE GOTTEN married in your early twenties. IF you HAD GOTTEN pregnant, you MIGHT HAVE QUIT your job. You probably WOULD HAVE HAD two or more children. Your husband WOULD HAVE SUPPORTED you and your children. But today, you have the opportunity to continue working after you have children. Technology WOULD HAVE BEEN different, too. Your house COULD HAVE HAD one TV and one phone. Because families had only one TV, they spent more time together. You'D NOT HAVE HAD a computer or a cell phone. IF you'D GROWN up in the fifties, your life WOULD HAVE BEEN completely different.

** Fill in the blanks with the correct words based on the reading.

1. IF you HAD (19)_____ to college, you MIGHT (20)_____ MAJORED in nursing or education, or you COULD (21)_____ TAKEN a secretarial course. (Keys: gone, have, have)

2. (22)_____ you (23)_____ (24)_____ pregnant in your early twenties, you (25)_____ (26)_____ QUIT your job. (Keys: If, had, gotten, might, have)

3. IF you HAD (27)_____ to college, you (28)_____ (29)_____ MAJORED in nursing or education, or you COULD HAVE (30)_____ a secretarial course. (Keys: gone, might, have, taken)

Reading 3. A conversation between two people

A: What would you do differently if you were 20?

B: I would be going to parties on weekends. I wouldn't have so many responsibilities. I wouldn't have to take care of children. I started to have my children when I was in my early twenties. I WISH I'D WAITED until I was older.

A: My aunt is 55 and just got married for the first time a few years ago. She WISHES she'D GOTTEN married when she was young and she WISHES she'D HAD children. But now she's too old.

B: I'm not sure about that. I read an article about a 63-year-old woman who gave birth to a baby with the help of science.

A: That's amazing! What will science do for us next?

B: Scientists have started to clone animals.

A: I used to have a wonderful dog. I miss her. I WISH I'D HAVE CLONED her. She died 10 years ago.

B: Technology in the twenty-first century is moving so fast, isn't it?

** Fill in the blanks with the correct words based on the reading.

1. I (31)_____ I (32)_____ WAITED until I was older. (Keys: wish, had)

2. She WISHES she (33)_____ GOTTEN married when she was young and she (34)_____ she'D HAD children. (Keys: had, wishes)

3. I WISH (35)_____ HAVE CLONED my pet that died 10 years ago. (Keys: I had)

Appendix C-1

A Learning Task for the Easy Rule (Group 2)

Modals

CAN, COULD, SHALL, SHOULD, WILL, WOULD, MAY, MIGHT, OUGHT TO and MUST are examples of modals.

1. Modals add meaning to the verbs that follow them.

Examples

A. You ought to live honestly. (advice)

B. She must/ has to/ should leave. (necessity)

C. I've got to help my sister on Saturday. (necessity)

D. Students are supposed to do their homework. (obligation)

E. She might leave. (possibility)

F. This could be your lucky day! (possibility)

G. He may be a winner. (possibility)

2. The base form follows a modal.

Examples

A-1. He can helps(X) you. (ungrammatical)

A-2. He can help you. (grammatical)

B-1. They should eating(X) now. (ungrammatical)

B-2. They should eat now. (grammatical)

C-1. You must to(X) EAT. (ungrammatical)

C-2. You must EAT. (grammatical)

D-1. Should I to(X) read the letter carefully? (ungrammatical)

D-2. Should I read the letter carefully? (grammatical)

E-1. He must is(X) a writer. (ungrammatical)

E-2. He must be a writer. (grammatical)

F-1. Am I supposed to did(X) that yesterday? (ungrammatical)

F-2. Was I supposed to do(O) that yesterday? (grammatical)

G-1. He might having(X) lunch. (ungrammatical)

G-2. He might be having lunch. (grammatical) = Perhaps he is having lunch.

H-1. She might knew(X) about it. (ungrammatical)

H-2. She might know(O) about it. (grammatical) = Perhaps she knows about it.

H-3. She might have(O) known about it. (grammatical) = Perhaps she knew about it.

3. The regular modal is not tensed or does not agree with the third person singular subject.

Example

A-1. He cans(X) help you. (ungrammatical)

A-2. He caned(X) help you. (ungrammatical)

A-3. He can help you. (grammatical)

B-1. She shoulds(X) leave right now. (ungrammatical)

B-2. She shoulded (X) leave then. (ungrammatical)

B-3. She should leave right nor. (grammatical)

C-1. My grandfather did(X) can swim. (ungrammatical)

C-2. My grandfather could swim. (grammatical)

D-1. You oughted(X) to follow the rules. (ungrammatical)

D-2. You ought(O) to follow the rules. (grammatical)

4. The following verb phrases play the same role as modals in meaning: have to (must, should), have got to (must, should), be able to (can), be supposed to (should, must), be allowed to (can, may).

Examples

A. He must go to court. = He has to go to court. = He has got to go to court.

B. You must park your car there. = You are supposed to park your car there.

C. He can speak English well. = He is able to speak English well.

D. They may call you for five years after the registration. = They are permitted to call you for five years after the registration.

5. In order to negate the sentence (=form the negative sentence), put negative adverbs such as "not" or "never" AFTER the modal or the first word of the modal-like expressions.

Examples

A. You should not leave now.

B. He cannot speak English well. ("cannot" is written as one word) = He is not able to speak English well.

C. She can't be a native speaker. ("can't" is the contraction of "can" and "not")

D. You must not write your composition with a pen. = You are not supposed to write your composition with a pencil.

E. They must not call you for five years. = They are not permitted to call you for five years.

F. You must not do that. = You are not allowed to do that.

G. He must not be hungry. = I am sure he is not hungry - otherwise he would eat something.

H. I haven't been able to sleep recently.

I. Tom might not be able to come tomorrow.

J. We were not able to persuade him.

K. They haven't lived here very long. they must not know many people.

L. You had better not give your credit card number to strange callers.

M. You had (You'd) better not cry like that.

N. She had (She'd) better not act like a child.

(This is an EXCEPTION: "had better" is ONE modal)

6. A modal can be used in passive voice: Modal + Be + Past Participle

Examples

A. The movie can be seen next week.

B. Something has to be done quickly.

7-1. When you make a Wh- question with an interrogative pronoun (such as what, who, and why) and a modal, the Wh- word comes first and the modal follows.

Examples

A. Why can't he speak French?

B. How will he be able to do that in the future?

C. How can I deal with telemarketing calls?

D. Where can I sit?

E. When can I visit you?

F. Why shouldn't we park here?

G. Who could she be?

7-2. When a modal phrase is used, the copula in the modal phrase comes after the interrogative pronoun.

H. When are you supposed to meet her?

I. How were they allowed to enter the building?

J. What do I have to do this time?

** Fill in the blanks with the correct words based on the reading.

1. You must not do that. = You (1)_____ (2)_____ (3)_____ (4)_____ do that. (Keys: are, not, allowed, to)

2. What should I do this time. = What DO I (5)_____ (6)_____ do this time? (Keys: have, to)

3. He (7)_____ be a winner. (possibility) (Key: may)

4. She had better (8)_____ act like a child. (Key: not)

5. You ought (9)_____ live honestly. (advice) (Key: to)

6. Students are (10)_____ to (11)_____ their homework. (obligation) (Keys: supposed, do)

7. How (12)_____ I deal with telemarketing calls? (Key: can)

8. How were they (13)_____ (14)_____ enter the building? (Keys: allowed, to)

9. You had (15)_____ (16)_____ give your credit card number to strange callers. (Keys: better, not)

10. You (17)_____ (18)_____ follow the rules. (=should) (Keys: ought, to)

11. I've (19)_____ (20)_____ help my sister on Saturday. (necessity = should, must) (Keys: got, to)

12. How will he (21)_____ (22)_____ (23)_____ do that in the future? (Keys: be, able, to)

13. You are (24)_____ supposed (25)_____ write your composition with a pencil. (Keys: not, to)

Appendix C-2

A Learning Task for the Difficult Rule (Group 2)

The Past Unreal Condition

** If I had been stronger (If Subordinate Clause), I would have become an athlete (Main Clause).

If + subject + HAD + Past Participle, subject + WOULD HAVE + Past Participle

Past Participle: taken, gotten, gone, eaten...

1. The unreal condition in the PAST can describe a situation that is NOT REAL. Use the Past Perfect (had + PP) in the IF clause and WOULD HAVE + Past Participle in the main clause.

Examples

- If you had been alive 100 years ago, you would have made about $200 a year. (You were not alive 100 years ago)
- If you had lived 100 years ago, you probably wouldn't have graduated from high school. (You did not live 100 years ago)
- If I had known you were in the hospital, I would have gone to see you. (I did not know that)
- If I'd seen you on the street, I would have said hello. (I did not see you)
- I would have gone out if I hadn't been so tired. (I was tired)
- I would have met lots of people if I'd gone to the party. (I didn't go to the party)
- I would have eaten something if I had been hungry. (I didn't eat anything)
- Jane would have missed her interview if she had missed the train. (She didn't

miss the train)

- I'd have sent you a postcard if I had had the address book when I was on vacation. (I didn't have the address book)
- If I hadn't met her 10 years ago, my college life would have been less exciting and less stressful. (I met her 10 years ago)

2. COULD or MIGHT can be used in the main clause instead of WOULD.

Examples

- If you had gotten an infection, you could have died. (You didn't get an infection)
- If you'd given birth to a baby, it might have died young. (You didn't have a baby)
- If John hadn't lent me the money, I couldn't have bought the car. (John lent me the money)
- I might have gone out if the weather hadn't been so cold. (The weather was cold)
- I'd have gone out if the weather hadn't been so cold. (The weather was cold)
- If John had been nice to my friends, I'd (=I could) have lent him 50 dollars he needed. (Because John was not nice to my friends, I didn't lend him money)

3. If POSSIBILITY should be used in the IF clause, use HAD BEEN ABLE TO for the Past Perfect of COULD

Examples

- If my great-grandparents had been able to come to the U.S. 100 years ago, our lives would have been easier. (My great-grandparents could not come to the U.S.)
- If you'd been able to become a doctor 100 years ago, you wouldn't have been

rich. (You could not become a doctor 100 years ago)

4. We often wish for things that were not real or true. Use a Past Perfect tense verb (had + past participle) to wish for something in the PAST.

Example 1

- Reality: I didn't know my grandfathers when I was young.
- Wish: I wish I had known them when I was young.

Example 2

- Reality: My aunt didn't have kids when she was young.
- Wish: She wishes she'd had kids when she was young.

Example 3

- Reality: I did not know that Brian was sick.
- Wish: I wish I'd known that Brian was sick.

Example 4

- Reality: You ate a lot of cake.
- Wish: Now you wish you hadn't eaten so much cake.

Example 5

- Reality: He did not study science. He studied languages at high school.
- Wish: He wishes he had studied science at high school instead of languages.

Example 6

- Reality: I didn't go to the party. Therefore, I didn't meet lots of people.

- Wish: I wish I'd gone to the party and had met lots of people.

If the real situation uses COULD, use COULD HAVE + Past Participle after WISH.

Example 7

- Reality: My favorite dog died years ago. I couldn't clone my dog.
- Wish: I wish I could have cloned her.

** Fill in the blanks with the correct words based on the reading.

1. If you (1)_____ been alive 100 years ago, you (2)_____ (3)_____ made about $200 a year. (You were not alive 100 years ago) (Keys: had, would, have)

2. If my great-grandparents had (4)_____ able to come to the U.S. 100 years ago, our lives would (5)_____ (6)_____ easier. (My great-grandparents could not come to the U.S.) (Keys: been, have, been)

3. I could have (7)_____ out (8)_____ the weather (9)_____ been so cold. (The weather was cold) (Keys: gone, if, hadn't)

4. I wish I (10)_____ gone to the party and (11)_____ met lots of people. (I didn't go the party) (Keys: had, had)

5. I (12)_____ I (13)_____ (14)_____ cloned her. (I couldn't clone my dog) (Keys: wish, could, have)

6. (15)_____ have gone out (16)_____ the weather (17)_____ been so cold. (The weather was cold, so I didn't go out) (Keys: I'd, if, hadn't)

7. He did not study science. He studied languages at high school. He (18)_____ he (19)_____ studied science at high school instead of languages. (Keys: wishes, had)

8. If John had (20)_____ nice to my friends, I could (21)_____ (22)_____ him 50 dollars he needed. (Keys: been, have, lent)

9. I (23)_____ have gone out if I (24)_____ been so tired. (I was tired) (Keys:

would, hadn't)

10. If I'd seen you on the street, I (25)_____ (26)_____ (27)_____ hello. (Keys: would, have, said)

11. Now you (28)_____ you hadn't (29)_____ so much cake. (Keys: wish, eaten)

12. If I (30)_____ known you were in the hospital, I would (31)_____ (32)_____ to see you. (Keys: had, have, gone)

13. (33)_____ you (34)_____ gotten an infection, you could have (35)_____. (You didn't die) (Keys: If, had, died)

Appendix D-1

A Learning Task for the Easy Rule (Group 3)

Grammar: Modals

CAN, COULD, SHALL, SHOULD, WILL, WOULD, MAY, MIGHT, OUGHT TO and MUST are modals.

1. Modals add meaning to the verbs that follow them.

- You ought to live honestly. (advice)
- She must leave. (necessity)
- She might leave. (possibility)

2. The base form follows a modal.

- He can helps(X) you. (ungrammatical)
- He can help you. (grammatical)

- They should eating(X) now. (ungrammatical)
- They should eat now. (grammatical)

- You must to(X) eat. (ungrammatical)
- You must eat. (grammatical)

3. The modal is never tensed or does not agree with the third person singular subject.

- He cans(X) help you. (ungrammatical)
- He caned(X) help you. (ungrammatical)
- He can help you. (grammatical)

4. The following verb phrases play the same role as modals in meaning: have to (must, should), have got to (must, should), be able to (can), be supposed to (should, must), be allowed to (can, may).

- He must (=has to, =has got to, =is supposed to) go to court.
- He can (=is able to) speak English well.

5. In order to negate a sentence (=To form a negative sentence), put the negative adverbs such as "not" and "never" AFTER the modal or the first word of the modal-like expressions.

- He cannot speak English. (CANNOT is written as one word) = He can't speak English ("can't" is the contraction of "can" and "not")
- You are not supposed to write your composition with a pencil.
- You had (= You'd) better not give your credit card number to strange callers. (This is an exception: "HAD BETTER" is ONE modal)

6. A modal can be used in passive voice: Modal + Be + Past Participle

- A pen should be used for the test.

7-1. When you make a Wh- question with a modal, the Wh- word comes first and the modal follows.

- When can I visit you?
- How will he be able to do that in the future?

7-2. When a modal phrase is used, the copula comes after the interrogative pronoun.

- When are you supposed to meet her?

- How were they allowed to enter the building?

** Fill in the blanks with the correct words based on the reading.

1. You ought (1)_____ live honestly. (advice) (Key: to)

2. You had (2)_____ (3)_____ give your credit card number to strange callers. (Keys: better, not)

3. You must (4)_____ your car there. = You (5)_____ (6)_____ (7)_____ park your car there. (Keys: not, are, not, supposed, to)

4. How (8)_____ he (9)_____ able (10)_____ do that in the future? (Keys: will, be, to)

5. He (11)_____ (12)_____ (13)_____ (=must, =is supposed to, =should) go to court. (Keys: has, got, to)

6. They didn't have the key. How were they (14)_____ to enter the building? (Key: allowed)

7. It's very important. She (15)_____ to do it. (=should) (Key: has)

Reading: Sweepstakes or Scam?

You MAY get a letter with your name printed on it telling you that you have just won a prize. Many people in the U.S. WILL get these letters.

We often get mail from sweepstakes companies. A sweepstakes is like a lottery. To enter a sweepstakes, you usually HAVE TO mail a postcard. Even though the chances of winning are very small, many people enter because they think they have nothing to lose and they WILL be able to win something.

CAN these offers of prizes be real? Some of them CAN be, but not all of them. Why WOULD someone give you a prize for doing nothing? A sweepstakes IS SUPPOSED TO be a chance for a company to promote its products. But some of the offers MIGHT be deceptive, and you MUST read the offer carefully. The government estimates that Americans MIGHT lose more than one billion dollars every year through "scams," or tricks to take your money. You'D BETTER NOT let them take your money. "ARE they ALLOWED TO do that in the U.S.?" you MIGHT ask. They SHOULDN'T be permitted to do that, but there is not a law that forbids them from sending mail.

You SHOULD be careful of letters, e- mails, and phone calls that tell you:

- You MUST NOT delay your chance: Act now or the offer WILL expire!
- You MAY be a winner already. To claim your gift, you only HAVE TO pay postage and handling. You DON'T HAVE TO pay for the wonderful prize.

You SHOULD NEVER give out your credit card number if you are not sure who is contacting you about the sweepstakes.

Senior citizens SHOULD be especially careful of scams. Eighty percent of the victims of scams are over 65. They often think that they HAVE GOT TO buy something in order to win a prize. Or they think that their chances of winning MIGHT increase if they buy the company's product. But in a legitimate sweepstakes, you DON'T HAVE TO buy anything or send any money. The law states that "no purchase necessary" MUST appear in big letters. In addition, the company IS NOT SUPPOSED TO hide your chances of winning.

How CAN you avoid becoming the victim of a scam? If you receive a letter saying you are a guaranteed winner, you OUGHT TO read it carefully. You DON'T EVEN HAVE TO read it at all. Actually most people just throw this mail in the garbage.

** Fill in the blanks with the correct words based on the reading.

1. But some of the offers MIGHT (16)_____ deceptive, and you MUST (17)_____ the offer carefully. (Keys: be, read)

2. But in a legitimate sweepstakes, you DO(18)_____ HAVE TO buy anything or send any money. (Key: n't or not)

3. "ARE they (19)_____ TO do that in the U.S.?" you MIGHT ask. (Key: allowed)

4. You SHOULD (20)_____ give out your credit card number if you are not sure who is contacting you about the sweepstakes. (Key: never or not)

5. In addition, the company IS (21)_____ SUPPOSED (22)_____ (23)_____ your chances of winning. (Keys: not, to, hide)

6. If you receive a letter saying you are a guaranteed winner, you (24)_____ (25)_____ read it carefully. (Keys: ought, to)

Appendix D-2

A Learning Task for the Difficult Rule (Group 3)

Grammar: The Past Unreal Conditional

**If I had been stronger (If Subordinate Clause), I would have become an athlete (Main Clause).

If + subject + HAD + Past Participle, subject + WOULD HAVE + Past Participle

Past Participle: taken, gotten, gone, eaten...

1. The unreal condition in the PAST can describe a situation that is NOT REAL. Use the Past Perfect (had + PP) in the IF clause and WOULD HAVE + Past Participle in the main clause.

Examples

- If you had been alive 100 years ago, you would have made about $200 a year. (You were not alive 100 years ago)
- If you'd lived 100 years ago, you probably wouldn't have graduated from high school. (You did not live 100 years ago)

2. COULD or MIGHT can be used in the main clause instead of WOULD.

Examples

- If you had gotten an infection, you'd (=could) have died. (You didn't get an infection)
- If you'd given birth to a baby, it might have died young. (You didn't have a baby)

3. If POSSIBILITY should be used in the IF clause, use HAD BEEN ABLE TO for the Past Perfect of COULD

Examples

- If my great-grandparents had been able to come to the U.S. 100 years ago, our lives would have been easier. (My great-grandparents could not come to the U.S.)
- If you had been able to become a doctor 100 years ago, you wouldn't have been rich. (You could not become a doctor 100 years ago)

4. We often wish for things that were not real. Use a Past Perfect tense verb (had + pp) to wish for something in the PAST.

Example 1

- Reality: I didn't know my grandfathers when I was young.
- Wish: I wish I had known them.

Example 2

- Reality: My aunt didn't have kids when she was young.
- Wish: She wishes she'd had kids when she was young.

If the real situation uses COULD, use COULD HAVE + Past Participle after WISH.

Example 3

- Reality: My favorite dog died years ago. I couldn't clone my dog.
- Wish: I wish I'd have cloned her.

** Fill in the blanks with the correct words based on the reading.

1. If my great-grandparents (1)_____ (2)_____ able to come to the U.S. 100 years ago, our lives (3)_____ (4)_____ been easier. (My great-grandparents

could not come to the U.S.) (Keys: had, been, would, have)

2. If you (5)_____ (6)_____ birth to a baby, it (7)_____ (8)_____ died young. (You didn't have a baby) (Keys: had, given, might, have)

3. I (9)_____ I (10)_____ (11)_____ cloned my dog. (I couldn't clone my dog) (Keys: wish, could, have)

4. She (12)_____ she (13)_____ had kids when she was young. (Keys: wishes, had)

5. If you had lived 100 years ago, you probably (14)_____ (15)_____ graduated from high school. (You did not live 100 years ago) (Keys: wouldn't, have)

6. I didn't know my grandfathers when I was young. I wish I (16)_____ (17)_____ them. (Keys: had, known)

Reading 1: Life 100 Years Ago

We often wonder what life will be like 20 or 50 or 100 years from now. Do you ever wonder what your life WOULD HAVE BEEN like IF you HAD BEEN alive 100 years ago?

IF you'D LIVED around 1900 in the U.S., you WOULD HAVE EARNED about $200-$400 a year. You probably WOUDN'T HAVE GRADUATED from high school. You might wish you HAD LIVED in the 1900s if you do not like studying. IF you HAD BEEN a dentist or an accountant, you WOULD HAVE MADE $2,500 a year. Therefore, IF you'D BEEN ABLE TO become doctor 100 years ago, you WOULDN'T HAVE BEEN rich by today's standards. IF you'D a child living in a city, you MIGHT HAVE HAD to work in a factory for 12-16 hours day.

IF you HAD GONE to a doctor, it'D HAVE BEEN a male and he probably WOULD NOT HAVE HAD a college education. IF you HAD GIVEN BIRTH to a baby at that time, it'D HAVE BEEN born at home. IF you HAD GOTTEN an infection at that time, you probably WOULD HAVE DIED because antibiotics HAD NOT BEEN discovered yet.

What about your home? IF you'D LIVED 100 years ago, you probably WOULDN'T HAVE HAD a bathtub or a telephone. You'D HAVE WASHED your hair about once a month. IF you don't like bathing, you may wish you HAD LIVED 100 years ago. IF you don't like modern technology and its negative effects, you might wish you HAD LIVED around 1900.

Do you think you WOULD HAVE BEEN happy with life 100 years ago? Do you really wish you HAD LIVED around 1900?

Reading 2: A Short Conversation

A: My aunt is 55 and got married last year. She WISHES she HAD GOTTEN married earlier and HAD HAD children. She is too old.
B: Science can make an old woman give birth to a baby and life cloned.
B: Right. I WISH I'D HAVE CLONED my pet. She died 10 years ago.

** Fill in the blanks with the correct words based on the reading.

1. Therefore, IF you (18)_____ BEEN ABLE TO become doctor 100 years ago, you (19)_____ HAVE BEEN rich by today's standards. (Keys: had, wouldn't)
2. IF you don't like bathing, you may WISH you (20)_____ (21)_____ 100

years ago. (Keys: had, lived)

3. But do you ever wonder what your life (22)_____ HAVE (23)_____ like (24)_____ you (25)_____ BEEN alive 100 years ago? (Keys: would, been, if, had)

4. IF (26)_____ BEEN a child living in a city, you MIGHT (27)_____ (28)_____ to work in a factory for 12-16 hours day. (Keys: you'd, have, gone)

5. And IF you'D (29)_____ BIRTH to a baby at that time, it (30)_____ HAVE (31)_____ born at home. (Keys: given, would, been)

6. IF you HAD LIVED 100 years ago, you probably (32)_____ HAVE HAD a bathtub or a telephone. (Key: wouldn't)

7. IF you (33)_____ GONE to a doctor, it (34)_____ HAVE BEEN a male and he probably WOULD (35)_____ HAVE HAD a college education. (Keys: had, would, not)

Appendix E-1

Grammaticality Judgment Test (Easy Rule)

1. You may be right about that. He might be a winner in life.

2. *People shouldn't expect to get rich from gambling. They ought work hard and save money.

3. *If you need help with that, ask Mary if she can helps you.

4. Taxi drivers say to passengers: "You're supposed to wear your seatbelt."

5. *The advertisement tells us that the movie cans be seen next week.

6. Who would do such a silly thing at midnight in front of his house?

7. You had better not open the door if you don't know who it is.

8. *For a better society, people must to obey the law and follow regulations.

9. Why can't he speak French as well as his friends in his class do?

10. Should I read the offer carefully to see what the conditions are?

11. *She cannot wait any longer. She have got to act now!

12. *You'd better not give your credit card number to strange callers, or they might using it to make purchases in your name.

13. I'm supposed to wash the dishes in my house, but I often leave them in the sink for the next day.

14. I'm expecting an important phone call. I'd better leave my cell phone on so I won't miss it.

15. *Do I have to do homework before I took a shower last night?

16. *Please tell me. Will I can see clearly after this operation?

Appendix E-2

Grammaticality Judgment Test (Difficult Rule)

1. *You'd have travel by train for sure if you'd needed to travel to another city 100 years ago.

2. Tom Smith was poor and weak in college. He wishes he'd been richer and stronger.

3. *A doctor could practice medicine without even a college degree if he's lived in New York in 1700.

4. *I know your phone number now; I'd called you if I knew it yesterday.

5. My parents didn't let me go to the party last week. I really wish they'd have let me.

6. If your husband hadn't been so busy, he'd have called you. I am sorry he didn't.

7. *The teacher was fast! If she'd have had more time, she'd explained the grammar more slowly.

8. *I wish I had came here when I first met my wife. She'd have loved it!

9. If he had been more careful, the accident wouldn't have happened; he was careless.

10. They left early yesterday; if they'd stayed any longer, they'd have been late for work.

11. *Anna wishes she'd went to the movie with you last weekend, but she made other plans.

12. English is tough; I'd have studied harder before graduation if I'd known how difficult it is to learn English.

13. Jerry had an car accident last week; he might not have had such a serious injury if he'd been wearing his seatbelt.

14. *If Danny'd taken an important exam right after eating, he'd failed it because of sleepiness.

15. I failed the test! I really wish somebody'd told me about the test this morning.

16. *You look tired. I'd have helped you if only you've told me about your move last Sunday.

Appendix F-1

Metalinguistic Test (Easy Rule)

1. She cannot finds a job.

a) 'Cannot' is the wrong form of the 'modal + negative adverb'.

b) After 'can', the use of the base form of the verb is essential.

c) 'Can' should be 'cans' because the subject is the third person singular form.

d) I am not sure.

2. She have to leave the building immediately.

a) To express obligation, change 'have to' to 'should to'.

b) The subject and the verb should agree in number.

c) Change 'have to' to 'will have to' to express immediate future.

d) I am not sure.

3. He got to buy a new car = He has to buy a new car.

a) Change 'got to' to 'has got to' to express obligation.

b) 'Must to' is the correct modal form of 'got to'.

c) Because the subject is third person singular, 'got' should be 'gets'.

d) I am not sure.

4. When your brother is supposed to arrive?

a) 'Supposed to' is the wrong form of the modal.

b) Move the copula 'is' between the interrogative pronoun and the subject.

c) To express future, place 'will' between the interrogative pronoun and the subject.

d) I am not sure.

5. They are allowed not to park in the parking lot.

a) A set of modal verbs should not be separated with any word like 'not'.

b) For negation of the infinitive, place the negative adverb after the infinitive 'to'.

c) Move the negative adverb after the copula 'are' for negation.

d) I am not sure.

6. You'd not better take an umbrella today.

a) The modal verb should not be contracted with the subject.

b) Move the negative adverb after the whole modal verb.

c) It is ungrammatical to negate the modal verb.

d) I am not sure.

Appendix F-2

Metalinguistic Test (Difficult Rule)

1. I'm sorry to hear Ann failed the exam. She would not have failed the test if she has studied harder.

a) Change the present perfect tense to the past perfect tense in order to express the unreal conditional situation.

b) The modal 'would' should never be followed by the present perfect tense. The base form of the verb 'failed' should come.

c) Place the unreal conditional if-clause in front of the main clause in the second sentence.

d) I am not sure.

2. I really missed you! I wish you would call me more often last year.

a) To express something hypothetical/imaginary in the past, the modal should be "could."

b) To express something imaginary in the past, a present perfect tense should be used after the modal.

c) Change the modal into 'used to' to express something imaginary and regular in the past.

d) I am not sure.

3. Thank goodness! If you hadn't repaired the brakes on her car, she'd have an accident yesterday.

a) Change the contraction form of the copula + negative adverb, 'hadn't' to 'haven't' to express something in the past.

b) To express an unreal condition in the past, the main clause in the second sentence should have the present perfect tense.

c) For a more unreal and highly hypothetical situation, the modal 'should' is more proper in the second sentence.

d) I am not sure.

4. I don't understand why I was addicted to music in those days. I wish I didn't spend so much time on music during my high school days.

a) The past negative form should be in the past perfect tense with the negative adverb for an unreal situation in the past.

b) Change the past negative form into a modal with the negative adverb 'wouldn't' in order to express an unreal conditional situation.

c) Change the verb 'spend' into the present perfect tense 'have spent' for an unreal conditional situation.

d) I am not sure.

5. I wish Mr. Park were still alive. He might have lived much longer if he took better care of himself.

a) The modal in the second sentence should be 'would' in order to express the highly unreal conditional situation.

b) Change the past tense verb 'took' to the proper past perfect verb phrase form for the unreal conditional situation.

c) Change the past tense 'took' to the proper present perfect tense verb phrase for the unreal conditional form .

d) I am not sure.

6. If Kelly'd known that she needed basic computer skills in the U.S., she'd studied computers in her native country before she came to America.

a) Change the past perfect tense verb phrase in the subordinate clause into the simple past tense form 'knew' for the unreal conditional form.

b) Change the past perfect tense verb phrase in the subordinate clause into the present perfect tense, 'has known' for the unreal conditional.

c) The main clause should be modified by dropping the past perfect verb phrase and adding a modal and the present perfect verb phrase.

d) I am not sure.

Appendix G-1

Retrospective Questionnaire for Group 1

Research Code : _____

Name: _____

Email Address: _____

You have participated in a study of the modals and the past unreal conditional in English. More specifically, examples of the forms are as follows:

1. Modal: I *can/may/should/might not* do it.
2. Past unreal conditional: If I *had known* it, I *would have let* you know about it.

Before the Study

1. Did you know the rules before participating in this study?

Yes ____ No ____

Yes

1-1. If Yes, please circle the grammar form(s) that you already knew.

Modals ( )

Past unreal conditional ( )

1-2. If Yes, please answer the following question.

Where did you learn the form(s)?

From one of my instructors in America _____

From one of my instructors in my country _____

I learned this by myself. _____

Others (Please specify) _____

1-3. If the answer is Yes, please explain how you learned the grammar form(s). For example, how and with what tools the instructor or the teacher taught the grammar form(s). Any specific and detailed explanation would be very helpful.

No

1-1. If the answer is No, please answer the following question.

Did you try to figure out the grammar rules outside of this study?

Yes _____ No _____

During the Study

1. Were you aware that you were learning specific grammar rules?

1-1. Day 2 Yes _____ No _____

1-2. Day 3 Yes _____ No _____

How much were you aware that you were learning specific grammar rules? Please estimate your level of awareness by circling the appropriate percentage.

Day 2

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Day 3

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

2. While you were reading the materials, were you trying to figure out the grammar rules?

2-1. Day 2 Yes _____ No _____

If Yes, did you succeed in finding the grammar rules?

Yes _____ No ____

2-2. Day 3 Yes _____ No _____

If Yes, did you succeed in finding the grammar rules?

Yes ____ No ____

3. Capitalized grammar rules

3-1. Were the capitalized grammar rules helpful to understanding the reading material?

Yes ____ No ____ I don't know ____

3-2. Were the capitalized grammar rules helpful to finding the grammar rules?

Yes ____ No ____ I don't know ____

3-3. Were the capitalized grammar rules helpful to taking the timed GJT?

Yes ____ No ____ I don't know ____

3-4. Were the capitalized grammar rules helpful to taking the untimed GJT?

Yes ____ No ____ I don't know ____

3-5. Were the capitalized grammar rules helpful to taking the metalinguistic test?

Yes ____ No ____ I don't know ____

Your participation is highly appreciated.

Thank you and good luck with academic career in America.

Appendix G-2

Retrospective Questionnaire for Group 2

Research Code : _____
Name: _____
Email Address: _____

You have participated in a study of the modals and the past unreal conditional in English. More specifically, examples of the forms are as follows:
1. Modal: I *can/may/should/might not* do it.
2. Past unreal conditional: If I *had known* it, I *would have let* you know about it.

During the Study

1. Did you understand the target grammar rules?
 1-1.Day 2 Yes _____ No _____
 1-2.Day 3 Yes _____ No _____

How much did you understand the target grammar rules? Please estimate your level of understanding by circling the appropriate percentage.

Day 2

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Day 3

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

1-3. If you did not understand the grammar rules fully, please explain the reason(s).

_____
_____
_____

2. Grammar rule presentation

3-1. Were the grammar rule presentations helpful to taking the timed GJT?
Yes ____ No ____ I don't know ____

3-2. Were the grammar rule presentations helpful to taking the untimed GJT?
Yes ____ No ____ I don't know ____

3-3. Were the grammar rule presentations helpful to taking the metalinguistic test?

Yes ____ No ____ I don't know ____

Before the Study

1. Did you know the grammar forms before participating in this study?

Yes ____ No ____

If Yes

1-1. Please circle the grammar form(s) that you already knew.

Modals ( )

Past unreal conditional ( )

1-2. Did the rule presentations in this study help you understand the grammar rules more than before? Please indicate.

Was it helpful for modals ? Yes _____ No _____

Was it helpful for past unreal conditional? Yes _____ No _____

1-3. Where did you learn the form(s)?

From one of my instructors in America _____

From one of my instructors in my country _____

I learned this by myself. _____

Other (Please specify) _____

1-4. Please explain how you learned the grammar form(s). For example, how and with what tools the instructor or the teacher taught the grammar form(s). Any specific and detailed explanation would be very helpful.

If No

1-1. If the answer is No, please answer the following question.

Did you try to figure out the grammar rules outside of this study?

Yes _____ No _____

Your participation is highly appreciated.

Thank you and good luck with academic career in America.

Appendix G-3

Retrospective Questionnaire for Group 3

Research Code : _____

Name: _____

Email Address: _____

You have participated in a study of the modals and the past unreal conditional in English. More specifically, examples of the forms are as follows:

1. Modal: I *can/may/should/might not* do it.
2. Past unreal conditional: If I *had known* it, I *would have let* you know about it.

Before the Study

1. Did you know the grammar forms before participating in this study?

Yes ____ No ____

If Yes

1-1. Please circle the grammar form(s) that you already knew.

Modals ( )

Past unreal conditional ( )

1-2. Did the rule presentation in this study help you understand the grammar rules more than before?

Was it helpful for modals? Yes _____ No _____

Was it helpful for past unreal conditional? Yes _____ No _____

1-3. Where did you learn the form(s)?

From one of my instructors in America _____

From one of my instructors in my country _____

I learned this by myself. _____

Other (Please specify) _____

1-4. Please explain how you learned the grammar form(s). For example, how and with what tools the instructor or the teacher taught the grammar form(s). Any specific and detailed explanation would be very helpful.

If No Did you try to figure out the grammar rules outside of this study?

Yes _____ No _____

During the Study

1. Did you understand the target grammar rules?

1-1.Day 2 Yes _____ No _____

1-2.Day 3 Yes _____ No _____

How much did you understand the target grammar rules? Please indicate your understanding by circling your level of understanding.

Day 2

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Day 3

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

1-3. If you did not understand the grammar rules fully, please explain the reason(s).

_____

_____

2. While you were reading the materials, were you trying to review the grammar rules to understand the reading materials better?

2-1. Day 2 Yes _____ No _____

If Yes, did you comprehend the reading materials with the help of the grammar instruction? Yes _____ No ____

2-2. Day 3 Yes _____ No _____

If Yes, did you comprehend the reading materials with the help of the grammar instruction? Yes _____ No ____

3. Capitalized grammar rules

3-1. Were the capitalized grammar rules helpful to understanding the reading material?

Yes ____ No ____

3-2. Were the capitalized grammar rules helpful to taking the timed GJT?

Yes ____ No ____

3-3. Were the capitalized grammar rules helpful to taking the untimed GJT?

Yes ____ No ____

3-4. Were the capitalized grammar rules helpful to taking the metalinguistic test?

Yes ____ No ____

Your participation is highly appreciated.

Thank you and good luck with academic career in America.

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