HOW OUTPUT AFFECTS EXPLICIT AND IMPLICIT KNOWLEDGE OF SPANISH INDIRECT OBJECT PRONOUNS

A Dissertation
Submitted to
The Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the degree
DOCTOR OF PHILOSOPHY

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by
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January 2014

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ABSTRACT

Although many studies have suggested positive effects for speaking or output practice on L2 grammar development, the question of how speaking affects L2 grammar remains. This study specifically examines how output affects the explicit and implicit knowledge of Spanish indirect object pronouns (IOPs). It also investigates levels of L2 grammar development for participants with low, mid and high levels of background knowledge of Spanish subject-verb agreement. Eight participants were given explicit grammar instruction on the target structure followed by six paired output-focus activities. These included two information-gap tasks, a matching task, a partner interview, original sentence creation, and a dictogloss task. In each task participants were required to orally produce IOPs whether they were reading a prepared IOP or producing one originally based on a prompt. In order to capture qualitative data on the effectiveness of output, all paired interaction was transcribed and coded for language related episodes (LREs). In this study three types of LREs were identified: self-correction, other-correction and metatalk. Learners were also tested on IOPs immediately before instruction, immediately following and three weeks afterward. Quantitative data consisted of these results of pre, post, and delayed posttests, the number of IOPs produced during all instructional activities, and the percentage of correct IOPs produced compared to those omitted or produced incorrectly. Development of explicit knowledge was assessed by an untimed written picture description task, whereas implicit knowledge was assessed on the tests by a timed grammaticality judgment task. The results of the picture description task showed more consistent gains in development of explicit knowledge. The results of the grammaticality judgment task were more irregular and suggested less consistent gains in development of implicit knowledge. Together, quantitative and qualitative results suggest that explicit instruction followed by output practice was most effective for learners in this study with greater knowledge of subject-verb agreement. A comparison of qualitative results and test scores revealed that learners who showed more focus on the lexicon during instructional tasks and did not produce IOPs as often, and also had lower scores on both tests. Stronger learning outcomes were observed for learners who produced more IOPs, had a higher percentage of correct IOPs and were involved in LREs.

ACKNOWLEDGEMENT

I would like to thank my entire committee, Dr. Toth, Dr. Holmquist, Dr. Lorenzino, and Dr. Wagner, who all generously gave their time and expertise during this process. As my previous professors, Dr. Lorenzino and Dr. Holmquist have taught me to better understand and appreciate the field of linguistics. I am thankful for the knowledge and support they have given me during my time as a graduate student. I am particularly grateful for my advisor, Dr. Toth, who provided endless support and gave much of his time and effort in providing feedback during the entire process. I have learned and grown as a researcher under his guidance and appreciate all his feedback and encouragement.

The level of success I may attain does not stem from my own efforts, but comes from the constant strength I receive from God, my family, and friends. They were my source of motivation and reminded me that hard work pays off. I'm thankful for my parents, sisters, and husband who all gave me loving support to accomplish my goal.

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CHAPTER 1

LITERATURE REVIEW OF INDIRECT OBJECT PRONOUNS

The purpose of this study is to examine the role of speaking, or *output* practice, focused on indirect object pronouns (IOPs) on second language (L2) Spanish learners' implicit and explicit knowledge of these structures. The role and usefulness of output is of great concern to most foreign language teachers who often question how to balance lessons with input, explicit rules, and output practice, whether spoken or written. Most language teachers would argue that output practice is necessary, but the reason why may not be so clear. The question remains: does output play a direct role in obtaining explicit knowledge, implicit knowledge or both? Through quantitative and qualitative data my study explores the relationship between meaningful form-focused output practice and the development of explicit and implicit knowledge of Spanish IOPs.

This chapter begins with a brief introduction to the literature on L2 grammatical development with a focus on the need for instruction to aid learners in making, strengthening and accessing form-meaning connections. In addition, I review some reasons why it is often challenging for learners to establish and strengthen such connections particularly with complex grammatical structures such as IOPs. Since my study will report findings on the development of explicit and implicit knowledge of IOPs, I present key points on how the concepts of explicit and implicit knowledge originated and have evolved over time. Researchers have questioned the extent to which there is an interface between explicit and implicit knowledge. I will explore the weak interface position, which suggests that explicit knowledge can facilitate implicit knowledge through practice if learners are developmentally ready. Following an overview of the theoretical basis for the present study, I thoroughly describe IOPs and present some acquisitional challenges learners face regarding comprehension and production of IOPs. The last section on developmental readiness and proficiency levels is used as a basis of support for the weak interface position and its claim regarding development of L2 grammar.

Subsequent to the presentation of IOPs, in Chapter 2 we will focus on the independent variable, output, in order to explore the potential effects it has on L2 grammar development. We will review studies based on interactional research that have either focused on input practice alone or practice involving input and output. Several studies that will be summarized suggest a positive role for output on L2 grammar learning. Because research also supports the idea that not all partner work is interactive, I conclude Chapter 2 with research on the type of tasks used to elicit oral output.

Chapter 3 details the methods and procedures carried out to evaluate whether output facilitated development of IOPs for the 8 learners used in this study. Six paired activities were designed to aid learners through a series of controlled, semi-controlled and finally to open-ended activities. The goal of each activity was to allow for repeated opportunities to orally produce the target structure. All activities were transcribed and are the source of data for quantitative and qualitative analysis. A series of pre, post and delayed posttests were given to examine improvement on the target feature. All data is analyzed in light of test scores to propose how output effects development of IOPs.

In Chapter 4, the primary variables in this study (explicit and implicit knowledge of IOPs, and output) are presented and then compared to learners' test scores. Background knowledge of subject-verb agreement, referred to as proficiency, will be used to examine what level of improvement was evident at varying proficiency levels. As a general comparison, each participant's test scores are compared to his/her proficiency level to consider whether stronger learning outcomes occurred at higher proficiency levels. Since this study intends to show *how* output is a critical element of language learning, qualitative data allow for a closer evaluation through finer grained analysis. Language related episodes are identified and analyzed to suggest how they may contribute to L2 development of explicit and/or implicit knowledge of IOPs.

The results show that while some learners in this study improved on the assessments of explicit and implicit knowledge, some improved solely on the assessments of explicit knowledge or implicit knowledge, while still others did not improve on either test. An analysis of frequency of tokens of IOPs will reveal that greater production of IOPs most often coincided with stronger learning outcomes for learners in this study. Overall, higher proficiency levels, defined as a background knowledge of subject-verb agreement, appeared to correspond with improvement in test scores for explicit and implicit knowledge of IOPs for most learners. The results also show that high proficiency learners initiated and interacted in all LREs.

L2 Grammar Instruction

For decades, researchers in the field of second language acquisition (SLA) have been concerned with the acquisition of grammatical features in a second language. Over time, the research questions have evolved and expanded. The debate in regards to acquisition of grammar lies not only within various theoretical perspectives on SLA in relation to grammar teaching and learning, but also in the challenges to grammar acquisition as compared to the acquisition of lexical items. Grammar acquisition is of particular interest because it entails an extended process of development in which L2 learners seek to establish relationships between forms and meaning. Grammatical form-meaning connections are often difficult because they usually represent abstract meanings that must be applied systematically to the properties of lexical items. For example, IOPs systematically mark person, number, and case must be attached to lexical verbs to represent the arguments associated with the events. According to VanPatten (1996, 2000, 2004), the process of forming and strengthening form-meaning connections (FMCs) is acquired in several stages. First, learners must make the initial connection. Then they must process the connection. Lastly, they must access the connection for use. In reference to form, part of the complexity lies in that not all languages represent the same grammatical meaning with surface forms (i.e. verbal, nominal, and adjectival inflections etc.). In addition, research has attested that L2 learners in the early stages of acquisition commonly attend to meaning first and thus may be less likely process grammatical FMCs than lexical forms. “This often, though not always, means that lexical acquisition takes precedence over the acquisition of grammatical features” (VanPatten, 2004, p. 4). On the other hand, Gass (2004) and VanPatten (2004) suggest that more advanced learners are better able to make use of linguistic context to discover FMCs.

Although VanPatten (1996) claims that the FMC is strengthened each time the form is accessed for use, questions remain as to how this process occurs. Researchers have proposed that complex FMCs are more difficult to acquire. We will mention some of the factors that may make it more difficult for L2 learners to identify and process grammatical FMCs. First, the number of uses connected to each form may make establishing a connection more challenging compared to a one-to-one relationship (Toth, 2000). Second, the transparency or saliency of the feature may affect the learner's ability to notice the form to then make a connection (Dekeyser, 1995). The regularity, or the extent to which a form adheres to rules, can also affect its acquisition (Dekeyser, 1998). Finally, the degree to which it might be confused with other similar forms can make FMCs difficult to establish (Lauffer, 1991).

Explicit and Implicit Knowledge

Aside from multiple theories that seek to inform processes of grammar acquisition, it is important to consider the types of knowledge that one may have of L2 grammatical structures. Recent SLA researchers have come to a general consensus on a separation of grammatical knowledge into 2 systems: explicit and implicit (R. Ellis, 2005, 2008, 2009; N. Ellis, 1994, 2005). The distinction between explicit and implicit knowledge originated in the field of cognitive psychology (Reber, 1989). Cognitive psychologists distinguished implicit and explicit learning in two principal ways; the former is described as a subconscious process while the latter entails conscious awareness of rules. The controversy over the relationship between explicit and implicit knowledge persists in SLA (R. Ellis, 2008).

Early work in SLA concerning separate ways of gaining and storing knowledge dates back to Krashen's Monitor Theory (1981). In this theory Krashen distinguished between two independent systems for developing abilities in second languages: (1) an acquired system that results from subconscious language learning; and (2) a learned system that results in knowing about the language (p. 1-2). The fundamental claim of the Monitor Theory is that "conscious learning is available to the performer only as a *Monitor*. In general, utterances are initiated by the acquired system- our fluency in production is based on what we have ‘picked up’ through active communication” (1985, p. 2). Although Krashen’s claim that there are two ways of developing knowledge was very influential in its time, theorists questioned the validity of the definitions used to distinguish learning and acquisition and commented on the lack of empirical evidence to support such claims (McLaughlin 1978).

Schmidt’s work on the noticing hypothesis (1994, 2001) emphasized the value of consciousness in SLA, which helped provide a distinction between explicit and implicit learning. In an attempt to operationalize acquisition and learning, Schmidt suggested that consciousness is useful to differentiate these constructions in terms of: intentionality (incidental versus intentional learning), attention (attended versus unattended), awareness (implicit versus explicit) and control (automatic versus controlled processing). Specifically, Schmidt’s distinction between implicit and explicit learning was primarily based on the level of learner’s awareness. He claimed that learning requires awareness and associates a high level of awareness with explicit learning, whereas a lower level, or unconscious awareness, is used to describe implicit learning. He states:

> A low level of awareness, called here “noticing,” is nearly isomorphic with attention and seems to be associated with all learning. A higher level of awareness (“understanding”) is involved in contrasts between explicit learning (learning on the basis of conscious knowledge, insights, and hypotheses) and implicit learning (learning based on unconscious processes of generalization and abstraction (1995, p. 1).

Although there have been several definitions of explicit and implicit knowledge in SLA (Krashen, 1981, 1985; N. Ellis, 1994, 2005; Schmidt, 1995, 2001) I chose to employ Ellis’s 2008 definition of implicit and explicit knowledge, which has also been used as the basis of several empirical studies that we will review in upcoming sections. First, R. Ellis states that implicit knowledge is intuitive in awareness and procedural in type of knowledge. Furthermore, implicit knowledge promotes variable but systematic knowledge, allows access to knowledge by means of automatic processing, is non-verbalizeable in one's ability to self-report, and finally, he claims that learnability is characterized within the critical period. Meanwhile, explicit knowledge involves conscious awareness of linguistic forms, declarative knowledge of grammatical rules, often shows inconsistent knowledge, has access through controlled processing, assists in access to knowledge during planning, allows verbalization of self-report, and learnability can take place at any age (R. Ellis, 2008, p. 418).

While most researchers agree on the distinction between implicit and explicit learning, the question remains, is there a strict dichotomy between the two as Krashen set forth in the Monitor Hypothesis; or is there an interface between explicit and implicit knowledge? Unlike Krashen, who viewed learning and acquisition as two separate processes, R. Ellis and N. Ellis view explicit and implicit knowledge as two systems that interact with one another. N. Ellis (1994) presented several questions regarding the specific functions and relationship of implicit and explicit knowledge, such as: how necessary is explicit knowledge for the acquisition of an L2; and how best can instruction aid L2 acquisition? N. Ellis (2005) supported Krashen's claim that implicit and explicit knowledge are distinct, but also believed that explicit knowledge was able to promote implicit knowledge. In other words, he did not accept the notion that explicit knowledge can convert into implicit knowledge, but claimed that explicit knowledge can facilitate implicit knowledge.

The Interface Hypothesis

Varying views of the relationship between explicit and implicit knowledge primarily question the extent to which explicit knowledge influences implicit knowledge. To illustrate the possibilities, R. Ellis (2008) describes 3 categories of hypothesized interfaces between them: the non-interface position, the strong interface position, and the weak interface position. The non-interface position presents a strict dichotomy between the two types of knowledge, which claims that learned knowledge cannot be converted into acquired knowledge. Meanwhile, the strong interface position claims that not only can explicit knowledge be derived from implicit knowledge, but also that explicit knowledge can be converted into implicit knowledge through practice. This position was first formally advanced by Sharwood Smith (1981) and subsequently promoted by Dekeyser (1998). Finally, the weak interface position acknowledges the possibility of explicit knowledge facilitating the development of implicit knowledge, but posits some limitations on when or how this can take place. The limitations on the transfer of explicit to implicit knowledge come in 3 versions. The first version claims that explicit knowledge can be converted to implicit knowledge through practice, but only if the learner is developmentally ready to inquire the linguistic form (R. Ellis, 1993). The second version claims that explicit knowledge can contribute indirectly to the acquisition of implicit knowledge. In other words, explicit and implicit knowledge can work together. For example, an explicit rule can make some features salient, thus allowing learners to notice the gap between the input and their existing linguistic competence (R. Ellis, 2009). The last version posits that learners can use their explicit knowledge to produce output that then serves as self-generated, 'auto-input' to their implicit learning mechanisms (p. 144).

Several theorists have disagreed on the proposed interface between explicit and implicit knowledge. Paradis (2009) defines an interface as "the locus of interaction between two systems, the overlap where two systems affect each other. The term interface is also used to refer to a link that connects two systems and allows for communication of data between them" (p. 61). According to N. Ellis (2005), implicit acquisition occurs during fluent comprehension and production, whereas explicit learning occurs in conscious efforts to negotiate meaning and construct communication (p. 307). So then, N. Ellis describes the indirect influence as follows: "explicit language learning is the initial registration of pattern recognizers for constructions that are then tuned and integrated into the system by implicit learning during subsequent input processing" (p. 308). Paradis denies an interface between implicit and explicit knowledge and critiques N. Ellis's suggestion of an indirect influence as a type of interface. According to Paradis, there is no interaction or data exchange between explicit metalinguistic knowledge, which he calls learning; and implicit linguistic competence, which he calls acquisition. Nevertheless, Paradis does not deny the effectiveness of L2 instruction in the development of L2 (p. 76). Like N. Ellis, Dekeyser (2009) also suggests that the presence of one type of knowledge is conducive to, or plays a causal role in the development of the other. He claims that "while explicit learning certainly does not necessarily lead to eventual automatized, let alone implicit, knowledge, the likelihood of learners achieving a fairly high degree of automaticity in their use of a structure keeps evolving in parallel with their declarative knowledge" (p. 126).

The abovementioned theorists agree on the influence that explicit instruction and subsequent practice can have on the development of the L2 and in some cases on implicit learning. Paradis (2009) agrees with N. Ellis (2005) that a particular form will not be acquired unless it is used, and that the form is not used until it has been noticed. However, Paradis clarifies that it is not by noticing the form that it is acquired, but its frequent use in context that will eventually result in the acquisition of its underlying structure (p. 106). In a similar way, N. Ellis & Larsen-Freeman (2006) noted that interaction contributes to increasing metalinguistic knowledge through negotiation, which can serve as a model and a monitor, and thus provide opportunities for frequency of use that may lead to the acquisition of the underlying structures (p. 572).

Evidence for the Impact of Explicit Instruction on Implicit Knowledge

My study will adopt the weak interface position, that explicit knowledge can facilitate implicit knowledge if learners are developmentally ready to acquire such forms. We will review three recent studies that have demonstrated positive effects for explicit instruction on implicit knowledge. First, Akakura (2012) examined the effectiveness of explicit instruction on L2 learners' implicit and explicit knowledge of English. His study was completed with 94 ESL learners with the use of articles through computer assisted language learning (CALL) activities. The majority of the participants were upper intermediate to advanced learners with a minority at lower-intermediate proficiency levels. The experimental group was exposed to instruction through CALL[1] activities; while the control group did not receive instructional treatments. The instructional tasks included an explanation of form and function and concluded with 20 multiple choice questions focusing on form. Two tasks were given to assess implicit knowledge, an

[1] Computer-assisted language learning

elicited imitation and an oral production task, while 2 other tasks were given to assess explicit knowledge, an untimed grammaticality judgment and a metalinguistic knowledge task. Results revealed that the experimental group outperformed the control group on the elicited imitation task. The oral production task revealed higher accuracy on the posttests for the experimental group, but scores generally remained the same in the control group. Participants in both groups judged ungrammatical articles a little better than grammatical articles. The results on the metalinguistic task showed that the experimental group outperformed the control group overall on posttests. According to Akakura, on measures of implicit knowledge, significant effects for instruction were found for articles in the immediate posttest of the elicited imitation task, which was sustained by an additional increase on delayed posttests. Based on his findings, Akakura concludes that explicit instruction can benefit implicit L2 knowledge as well as explicit knowledge (p. 27).

The second study that we will consider is by Leung & Williams (2012), which included two experiments that were carried out using reaction time methodology to investigate implicit learning of grammatical form-meaning connections. In their experiments, participants learned 4 novel articles along with English nouns, but were not told about a semantic factor that shows agreement with the noun. In their first experiment, 33 native English speakers were given the following novel articles with the corresponding meanings: *gi* and *ul* for near objects, and *ro* and *ri* for far objects. They were not explicitly told that the first two of each pair, namely g*i* and *ro*, were used for animate objects, while *ul* and *ri* for inanimate objects. During training, participants were presented with two objects at a time on a computer, one appearing closer than the other. The task was to indicate as quickly as possible which combinations of articles could describe the two pictures. The measure of learning was whether response times would slow down when the agreement rule was violated. There were 272 slides in the training phase, followed by a set of 32 slides (used to assess reaction time) that were consistent with the animacy rule and 32 slides that violated the animacy rule (also used to assess reaction times). During the trial, participants were presented with a picture and had to determine as quickly as possible if the object was a living or non-living thing by clicking the mouse accordingly. In addition, participants were asked to orally repeat and translate the sentence after they performed the judgment task. During a post-experiment interview, participants were asked about the conditions of use for *gi* versus *ul*, and *ro* and *ne*. Participants were classified as "unaware" if they did not show any knowledge of the correlation between the use of determiners and animacy during a postexperiment interview. Results of their study showed that 20 of the 33 participants (61%) claimed not to have been aware of the relationship between articles and animacy during the experiment. Nonetheless, of the 20 "unaware" participants, 7 mentioned an animacy correlation, but could not say which articles corresponded to which animacy values. The remaining thirteen participants were able to report the correct mapping and were aware it had been violated towards the end of the experiment. In experiment 1, although participants reported no awareness of the correlation, they had slower decision times and made more errors when the mapping between articles and animacy was violated. Leung & Williams (2012) conclude that although awareness is necessary to encode memory, emergence of underlying generalizations can originate outside of awareness and can influence behavior implicitly (p. 658).

In this same study, a second experiment was conducted with a different group of 26 native English speakers. The design was almost identical to experiment 1, except that participants were told that the articles corresponded to animacy, while the target for implicit learning was actually the association between articles and the relative size of the object referred to by the accompanying noun. *Gi* and *ro* were used for animate objects, and *ul* and *ne* for inanimate objects. They were not explicitly told that *gi* and *ul* also corresponded to relatively big objects, and *ro* and *ne* for relatively small objects. Results of experiment 2 revealed that 20 of the 26 participants claimed not to have been aware of the relationship between articles and relative size during the experiment. Of the 26 participants, 9 participants mentioned relative size correlation as one of their guesses, but only 2 of them could guess which articles corresponded to which size values. Therefore, only 6 were classified as "aware" participants. As in experiment 1, only participants who were able to correctly report the mappings without being prompted appeared to have used knowledge of relative size to complete the task during the set of slides used to assess reaction times. Thus, in both experiments, participants who were able to fully report the hidden mappings showed shorter reaction time effects that were not evident for "unaware" participants, which led them to conclude that grammatical form-meaning connections may be learned implicitly (p 657).

The final study we will consider investigated whether adults can acquire L2 syntax rules implicitly. Rebuschat & Williams's (2012) study used a semi artificial language consisting of German word-order rules with English words. In other words, the sentences followed English morphology with German syntax. Their study examined 4 types of sentences where the position of the verb phrase varied based on German word-order constraints. This study was comprised of 35 native speakers of English with no background in German divided into an experimental group (n=20) and a control group (n=15). The experimental group received the training set, which consisted of 128 sentences read out by a native English speaker, which provided 32 examples of each verb placement rule. The control group was not exposed to the artificial system. Prior to testing only the experimental group was told that the sentences they heard followed a "complex system". Both groups were then required to judge a set of 64 sentences that followed and violated German word-order rules as grammatical or ungrammatical, and to report on how confident they were as low or high confidence. The confidence rating was then used to assess conscious or unconscious status of participants' metaknowledge.

Their results did not show a significant difference between the experimental group's classifications of test items correctly (54.6%) with the control group (51.9%). Although the test results indicate that the training phase did not produce a learning effect on the experimental group, further analysis involving confidence ratings and awareness indicated a different trend. To explain, in the case of the confidence ratings, a positive rating was given to those participants who indicated more correct high-confidence decisions than incorrect; and a negative rating was assigned to participants who indicated more incorrect high-confidence decisions. The group with a positive rating was considered aware, whereas the group with the negative rating was considered unaware. The aware group endorsed 72% of grammatical sentences and 51.6% of ungrammatical sentences. The unaware group endorsed 70.9% of grammatical sentences and 73% of ungrammatical sentences. Thus, the greatest difference lies in the aware group's rejection of ungrammatical items. Based on these findings, Rebuschat & Williams conclude that adult learners are able to acquire L2 syntax under incidental learning conditions, while processing auditory sentences for meaning, without the benefit of corrective feedback and after a relatively brief period (p. 843). Findings also demonstrated that while learning in the experiment was incidental, subjects were conscious of having acquired knowledge.

Declarative and procedural knowledge

The distinction between declarative knowledge “to know that”, and proceduralized knowledge “to know how” (Gregg, 1989) is used to differentiate knowledge similarly as with implicit and explicit knowledge. The difference between the two systems, explicit/implicit compared to declarative/procedural is that the former is viewed more often as a strict dichotomy whereas the latter is viewed almost definitely as a continuum (R. Ellis, 2008, p. 427). It is important to recall that the weak interface position asserts explicit knowledge can facilitate implicit knowledge through practice; thus, in light of this view, both systems support a continuum instead of separate storage and use of knowledge. For that reason, procedural knowledge can be regarded as parallel to implicit knowledge in that both are considered what learners know intuitively. Correspondingly, declarative knowledge can be regarded as parallel to explicit knowledge as they are both regarded as conscious learning of rules.

Further support for the distinction between declarative and procedural knowledge as related to implicit and explicit knowledge is found in Dekeyser (1997, 2003), and Segalowitz (2000), who concur that implicit knowledge is often characterized as automatic, fast and accurate. DeKeyser (1997) has shown that learners of an artificial language improved mostly in the skill in which they were trained, in either comprehension or production; therefore, he suggests that procedural knowledge is skill-specific. Dekeyser's findings that a skill improves most in the type of task that has been practiced supported the notion that practice plays an essential role in the development of performance with interlanguage grammar (Muranoi, 2007). Although Dekeyser's study can be criticized as lacking applicability to classroom learning based on its laboratory context with an artificial language, he concludes that explicit rule learning during performance of the target skills, following a long period of repeated opportunities to use that knowledge, is likely to yield knowledge that is highly automatized. DeKeyser (2003) concluded that automatized explicit knowledge can be considered 'functionally equivalent' to implicit knowledge (p. 12).

Similar to the studies that showed support for explicit instruction's influence on implicit knowledge, the idea of automatizing explicitly learned L2 rules through production practice has been supported by several theorists and empirical studies. Johnson (1996) defined the skill of automatization as "the ability to get things right when no attention is available for getting them right" (p. 137). De bot (1996) supported output practice as a significant factor in the process of automatization, as he stated:

> Output as such does not play a role in the acquisition of completely new declarative knowledge, because learners can only acquire this type of knowledge by using external input. Thus, the locus of the effect of output must be in the transition of declarative to procedural knowledge (p. 549).

De Jong's (2005) study examined whether aural processing of input in a situation of implicit instruction can build a knowledge base that is available for both comprehension and production tasks. Her study was carried out with 55 Dutch students, who had no previous background with a romance language, learning noun-adjective gender agreement in Spanish. Participants were assigned to one of three groups each with a different training condition: (1) receptive training; (2) receptive plus productive training; and (3) a control group who only read an explanation of the target structure rule. All training and tests were presented orally and solely oral responses were required from the participants. Training lasted for two weeks in four 90-minute sessions. Receptive knowledge was assessed with a self-paced listening test, a matching test, and a grammaticality judgment task. Productive knowledge was tested with a picture description task. Additionally, a post-experimental questionnaire was also used to assess whether explicit knowledge had been induced.

Results of this study suggest that the receptive and the receptive plus productive training programs succeeded in building a knowledge base that was used in comprehension, but much less in production. The receptive condition processed sentences fastest, whereas those in the control group processed them slowest. Although the receptive group was the fastest, this group made a relatively large number of errors on the production task. Her results revealed that the receptive plus production group performed more accurately on the production test than the receptive group with respect to feminine forms; however, the control group was the most accurate in terms of feminine forms. De Jong gave a possible explanation for this finding stating that the attention of the control group was explicitly directed at gender agreement as they were the only group to read through an explanation of the rules. Nonetheless, a questionnaire revealed that nearly all participants had gained explicit knowledge of the target rule through either receptive and/or productive training. De Jong concluded that the two trained groups' explicit knowledge coexisting with their relatively fast processing in the comprehension tasks indicates that these groups either processed their explicit knowledge quickly or used implicit knowledge (p. 227). Irrespective of findings, De Jong does not make any final claims about the type of knowledge that was acquired. She concurs with Dekeyser (2003) that training studies of short duration are biased in favor of explicit learning. She noted that implicit learning is a long process, as it requires processing large numbers of instantiations, probably more than the few hundred in the learning conditions of the present study (p. 229).

In my study, I hypothesize that output practice can serve as a means for automatizing the target grammar structure, indirect object pronouns, through a series of instructional tasks used to facilitate transfer of explicit/declarative knowledge to implicit/procedural knowledge. In other words, through a considerable amount of output practice, learners could move from explicit knowledge about grammatical rules to implicit knowledge applying them to L2 communication. Furthermore, I propose that the learners who are not able to use the form in practice would ultimately not be able to produce it in posttests, thus suggesting that the practice of the form, and not only explicit instruction, was essential in its attainment.

Target L2 Structure: Indirect Object Pronouns (IOPs)

The following sections center on a comprehensive description of indirect object pronouns (IOPs) being that implicit and explicit knowledge of IOPs are the dependent variables in this study. IOPs were chosen as the target structure for this study to test the effects of output on learning because they are excellent examples of language that has a complex relationship between form and meaning that is difficult to acquire. Part of the difficulty concerning IOPs is that there is no one singular grammatical explanation for their use, nor is there one single English equivalent that learners can rely on. One common explanation for IOPs refers to the fact that a process is passed through a direct object before reaching the referent (Delbecque et al., 1992, p.113). According to Whitely (2002), the indirect object can also be identified as the recipient of the direct object (p. 141). Both explanations focus on the relationship between the indirect object and the direct object.

We begin with an in depth discussion of the notably complex system of Spanish indirect objects and IOPs while highlighting some similarities and differences in the use of English indirect objects. In general, English and Spanish indirect objects and their pronouns function quite differently in terms of syntax and morphology. To begin, in Spanish pronouns are categorized as strong or weak. Strong pronouns (*mí, ti, él/ella, nosotros* etc.) are like English pronouns (me, you, he/she, we etc.) in that both can be found in prepositional phrases. Unlike English, Spanish has weak pronouns otherwise termed clitics such as: *me, te, lo, la, le* etc. Clitics have several properties that set them apart from strong pronouns, but a main characteristic is that they must attach to a host, which in Spanish is the verb (Montrul, 2009). IOPs form part of the body of clitics[2] in the Spanish pronoun system. They bear a mix of grammatical information in that they are inflected for person, number and sometimes by case (Lee, 2003). They also vary in that their placement is restricted by the accompanying verb.

Morphology

Spanish pronominal clitics differ by grammatical case: direct objects as accusatives: *me, te, lo, la, nos, os, los, las*; and indirect objects as datives: *me, te, le, nos, os, les*. These object pronouns have rich morphology consistently marked for person (1st, 2nd and 3rd person) and number (singular or plural). Beyond person and number they

[2] A clitic is a morphological element with independent meaning that is bound to another independent morpheme and cannot be used without being attached in this way.

show variation on what they encode. Certain object pronouns mark gender, some mark case and some are homophonous with definite articles as well. The complete paradigm of objects pronouns is shown in Table 1.1:

Table 1.1: Object pronouns

	Singular		Plural	
Person	Direct	Indirect	Direct	Indirect
First	me	me	nos	nos
Second	te	te	os	os
Third	lo, la	le	los, las	les

As evidenced by Table 1.1, the first and second person forms of direct and indirect object pronouns are identical. The third person forms offer the most variability in that they are differentiated by case: indirect object pronouns (*le*, *les*) and direct object pronouns (*lo, la, los, las*). The direct object pronouns are furthermore divided by gender: masculine *lo* and *los* vs. feminine *la* and *las*. Lastly, third person direct object pronouns (*lo, la, los, las*) are homophonous: they can function as object pronouns, complementizers in relative pronouns and/or definite articles (Malovrh & Lee, 2010). The direct and indirect object pronouns are presented side by side in Table 1.1 mostly to contrast the third person forms because many learners confuse the use and form of IOPs with direct object pronouns (DOPs). Additionally, in many classrooms the presentation of IOPs follows instruction and practice with direct objects and their pronouns. I propose that metalinguistic knowledge of DOPs can serve as background knowledge to assist in development of explicit knowledge of IOPs. For this reason, the initial grammar instruction given to learners in this study included a review of direct objects and DOPs to build upon potential background knowledge learners may have.

Transitivity & Syntax of Object Pronouns

It is important to consider how transitivity affects the use of object pronouns given the fact that learners in the present study had to decide whether to include IOPs in uncontrolled activities and on the assessments throughout the treatment period. Uncontrolled activities required learners to include IOPs based on the context. This type of activity is contrasted with controlled activities in which learners were required to produce IOPs that were provided within the activity. IOPs are used jointly with ditransitive verbs, namely verbs that allow a subject and two objects. Thus, in order to include IOPs, it is necessary for a learner to recognize a verb as either (1) intransitive, if it does not permit a direct object; (2) transitive, if it may be used with a direct object; or (3) ditransitive, if it permits direct and indirect objects. Arús and Lavid (2001) state that transitivity occurs when the verb extends to another participant or not. For example, the dog chased the cat (transitive); and, the dog barked (intransitive). In English and Spanish, indirect objects are sensitive to transitivity in different ways (Company, 2001). To clarify, semantically related verbs in English and Spanish may mark transitivity differently. For example, the verbs "to sail" and "*navegar*" do not mark transitivity equally in each language: John sailed the boat (transitive) and *Juan navegó el barco (non-transitive) (Arús & Lavid, 2001, p. 76). While both verbs have the same meaning, the transitive use of the verb "*navegar*" is ungrammatical in Spanish. There are also cases where an indirect object is permitted in Spanish, but a similar construction is not used in English. For example, the following sentence, "*Ella le tiene miedo al perro"* (She to him/her/it has fear of the dog) would be stated in English as "She is afraid of the dog" with a prepositional phrase (of the dog) instead of an indirect object (*le*).

Spanish word order has more syntactic variability than English, which means sentence ordering can alternate as having a subject, indirect object pronoun and verb and direct object orientation (Example 1.1); direct object, indirect object, verb and subject orientation (Example 1.2) or also due to the null subject allowance in Spanish, a sentence may have an indirect object, verb and direct object orientation (Example 1.3) with no subject mentioned as in the following examples with the ditransitive verb "*dar*" (to give).

Example 1.1 *Juan le da amor.*

John to him/her gives love.

Example 1.2 *El amor le da Juan.*

Love to him/her gives John.

Example 1.3 *Le da amor.*

To him/her gives love.

English does allow some variation in expressing the indirect object, for example, "He gave me the book" and "He gave the book to me". Still, there is not a direct equivalent between the syntax of both languages in the placement of the indirect object and its pronoun. The flexibility to place subjects and object pronouns before or after the verb often causes errors of reception; specifically, learners often misinterpret the objects as subjects. This phenomenon, known as the first noun strategy (VanPatten, 1996, 2004), will be discussed in the upcoming section on acquisitional challenges. Syntactic variability is also particularly relevant in the ordering and interpretation of interrogatives in Spanish. The most commonly accepted placement of subjects is post verbal in interrogatives (Example 1.4), whereas subjects are mostly found preverbal in statements

(Example 1.5). Learners often interpret Example 1.4 as “Do you give gifts to your parents?” although it really asks, “Do your parents give you gifts?”

Example 1.4 *¿Te dan regalos tus padres?*

To you give gifts your parents.

Do your parents give you gifts?

Example 1.5 *Tus padres te dan regalos*.

Your parents to you give gifts.

Your parents give you gifts.

In Spanish, syntax stipulates placement of the IOP as preverbal or postverbal depending on whether the verb is finite or not. A finite verb, one conjugated for the subject, is contrasted with infinitive verbs such as “*escuchar*” (to listen). The clitic precedes finite verbs as in Example 1.6. Clitics attach to verbs in their infinitive (Example 1.7) and nonfinite form, such as a gerund (Example 1.8) or affirmative command (Example 1.9).

Example 1.6 ***La*** *escucha.*

3rd sing. fem. acc. 3rd sing. nom.

He/she listens to **her**.

Example 1.7 *Ella va a escuchar**la**.*

She is going to listen to **her**.

Example 1.8 *Está escuchándo**la**.*

He/she is listening to **her**.

Example 1.9 *Escúche**la**.*

Listen to **her**.

Clitic-doubling, that is to say the co-occurrence of the noun phrase (NP) to which it refers is optional, although much preferred in Spanish, with dative clitics and indirect objects as in Examples 1.10 and 1.11. A strong pronoun cannot be used without a clitic to represent the indirect object, but a full NP can (Montrul, 2009). Thus, Example 1.11 shows it is ungrammatical to omit the dative pronoun with the use of the strong pronoun "*ella*". On the other hand, in Example 1.10 the full NP that includes "Margarita" can replace the clitic making the "*le*" optional. Therefore, when the NP is specified, the IOP is considered optional, although preferred. What we see then is that learners may miss the opportunity for the use of the IOP or follow their English grammatical systems to include only the indirect object given that English never allows clitic-doubling.

Example 1.10 *(Le) di un regalo a Margarita*.

(To him/her) I gave a gift to Margarita.

Example 1.11 **Di un regalo a ella*.

I gave a gift to her.

There is a restriction on prepositional complements and the use of IOPs, specifically *para* and a noun phrase (NP) and *por* plus a NP are not proportional with the clitic pronoun. To explain, "*le*" in the following examples are ungrammatical: **Juan le compró un regalo para el niño*; and **Juan le lucha por la vida*. There is an additional limitation of object pronouns with the verb *hablar* followed by the preposition *con* and a NP (Delbecque, 1992). Example 1.12 and 1.13 are both grammatically correct in Spanish, whereas the sentence in Example 1.14 is ungrammatical. Example 1.13 shows how the use of "*le*" is acceptable as long as there is no prepositional accusative that follows. In short, the rule is that when you double the IOP clitic with a prepositional NP, the preposition has to be "*a*". When you use other prepositions like "*por*", "*para*" or "*con*" then you do not use the IOP clitic.

Example 1.12 *Hablé con él.*

I spoke with him.

Example 1.13 *Le hablé.*

To him/her I spoke.

Example 1.14 **Le hablé con él.*

*To him/her I spoke with him.

All indirect objects as well as all animate direct objects are signaled by "*a*". The "*a*" that precedes indirect objects have varying meanings of "to", "for" and "from" when translated to English. Because the "*a*" obligatorily preceded direct objects when they consist of an animate or individualized referent, animate objects may be misinterpreted as indirect objects and therefore may be assigned a dative instead of an accusative clitic. Example 1.15 shows how the "*a*" only distinguished "*la niña*" as an animate direct object.

Example 1.15 *Veo a la niña.*

I see the girl.

Acquisitional Challenges

Based on all the morphological and syntactic properties IOPs entail, errors often occur in L2 learners' use of IOPs. The proceeding sections of this chapter focus on the acquisitional challenges IOPs present in terms of reception, omission and production. Consideration of challenges learners generally face helped guide creation of the treatment activities in this study so that each activity would aid learners in moving from receptive to productive knowledge. Following the presentation of errors commonly found with L2 learners and IOPs, we will explore how developmental readiness and background knowledge of subject-verb agreement may influence L2 development of IOPs.

Reception Errors and the First Noun Strategy

Common developmental errors in misinterpretation of meaning, omission, and incorrect production of forms are evidence of the complex form-meaning relationships that IOPs represent. One of the main problems learners face is incorrect identification of grammatical categories, which often leads to a misinterpretation of the sentence. The factors in misinterpretation are often due to overreliance on subject pronouns; subject, verb, and object word order processing (SVO processing); and a delay in the acquisition of person-number verbal morphology (Lee, 2003, p. 99). Let us examine the following example as a model for possible misinterpretation:

Example 1.16	*¿Te*	*hace*	*muchas preguntas*	*el profesor?*
	To you	ask	a lot of questions	the professor?
	Does the professor ask you a lot of questions?			

In Example 1.16, the placement of "*te*" can be misinterpreted as the subject, and thus, suggest the question asks, "Do you ask the professor a lot of questions" when it actually asks, "Does the professor ask you a lot of questions?" This example represents how IOPs can be mistaken for subjects when they are placed first in the sentence, thus reflecting SVO processing. Although one may interpret the verb as "do you ask", the actual verb "*hace*" does not include the "*s*" to mark the second person form of the verb. This could suggest that for any given learner either the "*s*" may not be salient enough to allow for its proper interpretation or it could reflect a learner's under-developed verb morphology.

As we discussed in the section on the syntax of object pronouns, the inversion of subjects and objects, particularly in interrogatives, causes problems in comprehension. Empirical research on the acquisition of object pronouns and how learners process and produce language samples has lead to a phenomenon referred as the First Noun Strategy (FNS) also known as SVO processing (VanPatten, 2004). The FNS is most concerned with how learners decode meaning. As such it describes situations in which language learners tend to assign the grammatical role of subject to the first noun or pronoun in the utterance even if its grammatical role is that of an object (Malovrh & Lee, 2010, p.105). As Lee (2003) noted, mature speakers are more likely to make use of a variety of syntactic, morphological, semantic and pragmatic L2 features as resources when processing language samples. As he explains, cues in the L2 input are not as readily available for lower level learners, which could mean having fewer resources in processing the L2. One resource that is commonly used by lower level learners is that of word order (p. 99).

Studies on the FNS

Various studies of beginning L2 Spanish learners support how learners often misinterpret object pronouns, particularly in presuming direct object pronouns are subjects (VanPatten, 1984, 2004; Lee & Malvorh, 2009, 2010). Although more work has been focused on third person singular and plural accusative pronouns, important effects have been shown for datives as well. Before we explore how datives can be misinterpreted as subjects, we will examine a few key studies that have been at the forefront of the FNS. For example, learners from VanPatten's (1984) study interpreted OVS sentences as SVO between 35% and 70% of the time indicating a strong use of the FNS. He found that misinterpretation of objects occurred more often with accusative than datives and concluded that it was due to multiple functionality of *lo/la, los/las* as direct objects pronouns as well as definite articles. Following that study, Lee's (1987) study of 22 second-semester university students of Spanish focused on third person accusative case pronouns. Each learner was presented with a series of sentences, some containing direct object pronouns, and then had to indicate who or what *lo/la/los/las* referred to on a picture-matching task. Results of his study showed that direct objects were misinterpreted as subjects between 29% and 70% of the time. Further analysis of the results showed that plural direct objects were misinterpreted 66% of the time, whereas singular direct objects were misinterpreted at 38%. In a similar study, Lee (2000) examined the relationship between reading comprehension and input processing using direct object pronouns. In his study, 27 first-semester learners of Spanish were divided into 3 groups each with a different orientation to reading a passage containing 6 embedded object pronouns. The first group was told to try to figure out the meaning of "*lo*" and "*la*"; the second group was told to guess at answers to find meaning; and the final group was told to read the passage for comprehension. Lee assessed input processing by a sentence recognition task. Results revealed that target-like comprehension of "*lo*" was significantly higher than "*la*" (75% vs. 62% respectively). The first group that was told to figure out the meaning outperformed the others at 77%, whereas the lowest comprehension score was found with the third group, which was not instructed to infer meaning (p. 109).

The goal of Malovrh's (2006) study was to determine how number, gender, context location, and topic familiarity work together to influence the L2 learner's processing strategy in OVS constructions. He investigated which variables were helpful in correctly interpreting object pronouns in OVS constructions. His study of 58 participants was divided into 2 groups (A and B). Both groups received the same data elicitation techniques. The only difference among groups was that Group B received a pre-target contextual clue at the beginning of the sentence, as in "*A Bart lo critica Lisa*…", whereas Group A did not receive such contextual clues. Besides differentiating placement of contextual cues to test context location, Malovrh divided practice sets into sentences based on a familiar topic, the Simpsons (a popular American cartoon) with sentences containing names made up by the researcher. He also examined number by coding for singular and plural objects, as well as gender by coding objects as masculine or feminine. This study found that overall beginning learners misinterpreted objects as subjects between 37% and 53% of the time. The percentages of correct OVS interpretation showed no significant difference between gender and context familiarity. Only number and topic familiarity proved to have a significant attenuating effect on learners' use of the FNS. He concluded that L2 learners are more accurate in interpreting OVS sentences when the object pronoun is singular and the context is more familiar (p. 177).

The abovementioned studies offer much support for FNS in terms of misinterpretation of direct objects as subjects. More importantly, in several studies, researchers have tried to determine which linguistic variables offer the most effective cues to help learners overcome effects of the FNS. These studies have influenced the design of instructional tasks in my study as well as my testing instruments. The instructional tasks (see Chapter 3) begin by requiring students to match form and meaning, and end with more open-ended responses. The IOPs were presented mostly in singular form with most activities focusing on the 3rd person dative "*le(s)*". To reflect the practice of 3rd person dative forms, the production of IOPs in the written assessment was created to focus on the production of "*le*". Although the FNS has been documented less with dative than with accusative clitics, in the next section we will review studies that have been able to apply the same principle behind the misinterpretation of object pronouns with indirect object as well. The question then is to what extent are IOPs misinterpreted as subjects?

Relation of the FNS to IOPs

Two studies by Lee & Malovrh (2009, 2010) lead the current discussion on object pronouns, their interpretation, and the factors that affect processing. Their studies inquired how accurately learners at different proficiency levels interpret OVS constructions. Both studies placed participants into one of the following levels divided by proficiency: (1) the first group was enrolled in a third semester Spanish course; (2) the second group was enrolled in a fifth semester Spanish course; (3) the third group was enrolled in an upper division course (Introduction to Hispanic Linguistics); (4) the fourth group was enrolled in an upper division linguistics course (Introduction to Applied Linguistics) with a focus on Spanish. In their 2009 and 2010 studies, responses to a questionnaire indicated that most participants in group 3 and all participants in group 4 had had a study abroad experience.

Lee & Malovrh (2009) examined 1st, 2nd and 3rd person pronouns in dative and accusative cases. Additionally, they examined whether morphological inflections for case, person, number and gender contribute to accurately interpreting OVS strings. Percentages of OVS processing for the following variables: context, case, person, number, gender, and homophony were averaged to arrive at a percentage of frequency of OVS processing. The results of each group's overall frequency of OVS processing are as follows: level 1, 50.8%; level 2, 51.6%; level, 57.8%; and level 4, 83.5%. Overall, Levels 1 and 2 showed unstable OVS interpretation with frequency around 50%, whereas level 3 showed movement towards stabilization in OVS processing and only level 4 showed stabilization. Final conclusions of Lee & Malovrh (2009) reveal that all factors except number were significant in contributing to interpretation of OVS strings. Unlike the results of VanPatten (1984), which showed that learners used the FNS less often with datives than accusatives, Lee & Malovrh found that there was more variation in dative OVS processing than with accusative clitics as the levels increased, which led them to conclude that case was a significant factor in OVS processing. With regard to the other variables they examined, they claimed that person is a very strong indicator of performance as evidence suggested that first person emerges before second and third. With reference to gender, they claimed that feminine *la/las* may be more problematic due to the multiple functions the form carries since they are also found in the article system in Spanish. These findings led them to identify homophony as a significant factor affecting OVS processing. As they explained, L2 development is guided by a one-to-one principle for form-function mapping; learners first map one form to one function, before mapping multiple forms to multiple functions (p. 114). Given the results, Lee & Malovrh concluded that both direct and indirect object pronouns are a late-acquired feature for L2 acquisition of Spanish. Ultimately, they questioned what makes restructuring occur between levels 3 and 4.

In a subsequent study, Malovrh & Lee (2010) examined parallel developments in input processing and production of grammatical form among intermediate and advanced L2 learners with direct and indirect object pronouns. In this study, learners were divided into 4 groups of proficiency level like in their 2009 study: groups 1 and 2 were intermediate, and groups 3 and 4 were advanced. The treatment was divided into 2 parts, (1) processing and (2) production. For the processing component, participants were required to listen to a recording of 36 sentences in OVS strings and then they had to write who performed the action in each sentence. Assessment of processing OVS strings was coded as correct or incorrect. For the production component, participants were instructed to do an oral retelling of a silent film. Participants were not explicitly instructed to use object pronouns, but were told to describe the film with as much detail as possible. All transcriptions were analyzed for clitic use and non-use. Specifically, the data were analyzed for accurate production of form and accurate placement of pronouns in OV contexts.

Their results showed that processing, production and placement develop in parallel ways, not independently (p. 231). First, as the proficiency level of the participant increased, the number of clitics produced increased as well. Additionally, as the proficiency levels increased, so did accuracy and placement of object pronouns in OV contexts. They summarized 4 key events in the acquisition of object pronouns in Spanish. The first 2 events occurred at level 2, the higher intermediate level, while the last 2 events occurred at level 3, the lower advanced level. At level 2, there was an increase in clitics produced; and, production of third person decreased in accuracy. At level 3, OVS processing was more frequent (65%) than SVO processing (35%); and there was also 100% accuracy of placement. As in Lee & Malovrh 2009, their 2010 study showed a similar trend in favor of stabilization of OVS processing at levels 3 and 4. Based on their findings, they claimed that learners acquire syntax of object pronouns before morphology (p. 246). Furthermore, they proposed that accurate placement of object pronouns may be the trigger to developing accurate morphology of object pronouns since learners fully acquired OV placement while still showing morphological variability in production and processing (p. 231).

What makes these findings particularly important to my study is that the results showed even more variation in the interpretation of datives than accusatives, which suggests that SVO processing may affect datives as much, if not more than accusatives. Also, the fact that the groups that showed stabilization of accurate OVS processing had a study-abroad experience could suggest that more opportunities for output production leads to greater development. The fact that groups with the highest level of accuracy in Lee & Malovrh were also comprised of advanced learners may suggest proficiency level has a greater impact than output production. Unlike Lee & Malovrh, who used intermediate and advanced learners, my study inquires whether challenges of acquiring IOPs for *beginning* learners can be attenuated by output production through classroom activities. Based on the research presented regarding the FNS, hypothesized findings in my study will show a tendency for lower level learners to misinterpret IOPs as subjects more often than high level learners. Additionally, as Lee & Malovrh found, I expect that as proficiency level increases, so will use and accuracy of IOPs in my study. The goal of my study is to see how explicit instruction and interaction practice leads learners to develop explicit and implicit knowledge of IOPs over time.

Omission of IOPs

We have discussed how it is often difficult for L2 learners to make proper form-meaning connections, particularly with morphemes that code multiple functions. Now we will explore the observation that, in general, L2 learners produce fewer object pronouns in obligatory contexts than native speakers would (Andersen, 1984; Mortul, 2009). Lee & Malovrh (2009) assert that clitic pronouns are not as salient as other grammatical structures based on the fact that these pronouns lack phonological stress, have multiple functions and also have varying placement relative to the verb (p. 105). In his study of one beginning L2 Spanish learner, Andersen (1984) characterized the general lack of production and morphological marking as a result of his inability to (1) know which form to use; and (2) know where to place it (p. 86). Although in most cases the clitic pronoun is required with the option of being doubled by a full noun phrase (NP) elsewhere, L2 learners often omit the IOP and produce the entire NP due to this lack of salience. To illustrate, they may say, **Juan dice hola a él* instead of *Juan le dice hola (a él)*. The second sentence would be the target that learners should produce where "*a él*" is optionally used for contrast or emphasis.

Montrul's (2009) study of knowledge of clitic pronouns investigated the use of clitics in different syntactic constructions with 24 L2 learners and 24 Spanish heritage learners. She investigated whether heritage learners had more native like use of IOPs in terms of distribution and placement compared to L2 learners. She used three different tasks to test her hypothesis: (1) an oral production task; (2) an acceptability judgment task; and (3) a comprehension task. Results showed that, overall, heritage learners at the same proficiency level as L2 learners seem to possess more native-like knowledge of Spanish specifically concerning post verbal clitic placement. As she observed, word order seemed to be significantly more problematic for L2 learners than clitic placement, whether pre or post verbally (p. 175). More specifically, she found that statements that topicalized objects as subjects, known as clitic-left dislocations, were more problematic as in the following example, "*Las carpetas las tiene Juan en la oficina*" (p. 171). Results of the oral task revealed that L2 learners produced less clitics in general and less clitic doubling structures with dative clitics. She found that L2 learners and heritage speakers differ in use of clitics that are more frequent in spoken language and those that are optional such as clitic-doubling and clitic-left dislocations. As Montrul explained, clitic-left dislocations are not explicitly taught in language classrooms, which supports the idea that L2 learner's knowledge of clitics relies more on explicit knowledge. Montrul suggested that heritage learners lean more on implicit (intuitive) knowledge, whereas L2 learners seemed to make more use of explicit (metalinguistic) knowledge (p. 200). As she stated,

> Perhaps their L2 knowledge of clitics is primarily explicit and metalinguistic, especially for learners who are at low and intermediate levels of proficiency, whereas that of heritage learners is more intuitive and implicit because clitics were acquired in a naturalistic setting, with no instruction (p. 198).

Production Errors

The ability to know when and how to use an IOP depends on all the semantic, syntactic and morphological properties that we have detailed. The semantics of the event that the verb represents determines how many entities can be associated with it, and built into the syntactic structure of the sentence. With regards to syntax, in order to use IOPs correctly, L2 learners need to either consciously or intuitively differentiate between intransitive, transitive and ditransitive verbs; those that have no direct object (DO), those with optional direct objects and those that allow direct and indirect objects respectively. Additionally, once a learner recognizes the need for an IOP, he/she has to contend with proper placement and form-selection. The difficulty in marking the proper surface features lies in the morphology of IOPs: case, number, and person. Studies have revealed that morphology is typically the last aspect of correct use for L2 learners in terms of production. As Lee and Malovrh (2010) observed, placement seems to take place before proper morphological representation.

Developmental Readiness

We have explored the morpho-syntactic properties that IOPs carry along with a comparison of how indirect objects and IOPs are represented in Spanish and English, which often leads to challenges for L2 learners. Despite the fact that there are many factors for learners to consider when using IOPs (such as placement, case, number and person), Lee & Malovrh, (2009, 2010) suggested that the object pronoun system seems to stabilize beyond levels 1 and 2. My study adopts the standpoint of Lee & Malovrh (2009), which suggests that IOPs are a late-acquired feature for Spanish L2 learners (p. 115). With this in mind, it appears that there must be a certain threshold of background knowledge that learners must have prior to acquiring IOPs. This notion may be supported by the weak interface position, which claims that explicit knowledge can facilitate implicit knowledge through practice, but only if the learner is developmentally ready to acquire the linguistic form (R. Ellis, 2009). The concept of being developmentally ready leads us to a detailed discussion of Pienemann's work on the processability theory and developmental readiness.

Pienemann (1989, 2007) claims that there are varying developmental stages through which learners need to pass before they can continue to a more advanced structure. His work with language processing has made the concept of "developmental readiness" of considerable importance in proper interpretation and use of syntactically and morphologically complex forms. It is important to note that the processability theory focuses solely on stages in the development of procedural linguistic skills in the learner. It is not designed to contribute anything to the question of the innate origin of linguistic knowledge or the inferential processes by which linguistic input is converted into linguistic knowledge (1998, p. 5). As Pienemann states, although some structural options may be formally possible, the language learner will only produce them if the necessary processing procedures are available to carry out those computations within a given time frame (p. 1). In other words, based on the sequence of processing that develops in most learners, it is unlikely for learners to produce structures that are at higher points of development.

Processability theory is in actuality a theory of language production, but also sets forth claims for language acquisition in that it proposes that processing procedures are hierarchical (R. Ellis, 2008). Pienemann's (1998) hierarchy proposes stages of development that are mastered one at a time and in sequence. Each lower level is a prerequisite for the functioning of the next level so then the hierarchy will be cut off at the point of missing procedures. The hierarchy that underlies processability theory is as follows (p. 7):

1- lemma access: “words”
2- the category procedure: lexical morphemes (e.g. person, number etc.)
3- the phrasal procedure: phrasal information exchange (e.g. many dogs – both plural)
4- the S-procedure: inter-phrasal information exchange (e.g. subject-verb agreement)
5- the subordinate clause procedure: main and subordinate clause

Over the past 30 years much has been written about the processability theory. We will consider R. Ellis’s (2008) summary of each stage. The first stage refers to learner’s access to words, which are primarily used in single utterances. The second stage allows for lexical entries to mark number. Until the third stage, learners are unable to match features with other elements. The ability to handle features such as articles and number agreement begins at the third stage. For example, in Spanish, learners will be able to make “*el libro*” (the book) plural to become “*los libros*” (the books). The fourth stage allows for exchanges between structural phrases. At this stage, the subject-noun phrase may be deposited into the verb phrase, otherwise known as subject-verb agreement. For example, learners would be able to mark the –s morpheme for third person singular verbs in English. The final stage allows learners to process word order of subordinate structures such as stating, “He asked where I lived” (p. 462).

Although my study will not place IOPs on a specific stage of development, a comparison is made between IOPs and processing at level 4 following Pienemann’s hierarchy. Subject-verb conjugations require proper morphological selection to mark person and number so that the subject and verb agree. In a similar way, IOPs are also marked for person and number as well as case. Based on this comparison, my study assumes that learners who are not readily able to produce sentences with correct subject-verb agreement will most likely not be able to mark such morphology on IOPs. The difficulty of the “s-procedure”, which applies to both subject-verb agreement and IOP use, is sustaining a long-distance, inter-phrasal relationship between the features of the grammatical marker (i.e. the verb suffix or pronominal clitic that marks person, number etc.) and its actual referent, which is established elsewhere in the sentence or in preceding discourse. Furthermore, the inability to mark subject and verb agreement may lead to greater misinterpretations of indirect objects and subjects. In other words, a learner who appears to be processing at a lexical level may exhibit errors of reception with such sentences containing indirect objects and IOPs such as the following: "*¿A la profesora, le haces muchas preguntas?* (To the professor, to him/her do you ask a lot of questions?). Although the question offered grammatical features that assist in distinguishing the subject from the indirect object, as found in the final –s morpheme to signal the second person form of the verb "*haces*" and the "*a*" to signal the indirect object "*la profesora*", learners who look to lexical (i.e. vocabulary) rather than grammatical morphemes (i.e. suffixes and clicitcs) for meaning miss these clues.

In sum, developmental sequences could imply that producing IOPs may be challenging due to their morpho-syntactic complexity. More specifically, learners that are not at the necessary developmental level, those processing at a lower level (i.e. word-level) that have not moved to the sentence level, may not be able to produce IOPs in originally created sentences. Furthermore, I speculate a learner must have a certain threshold of subject-verb agreement in the L2 in order to demonstrate development of explicit and/or implicit knowledge of IOPs. As Pienemann (1998) states,

> Skipping stages in formal instruction would imply that there would be a gap in the processing procedures needed for the learner's language. Since all processing procedures underlying a structure are required for the processing of the structure, the learner would simply be unable to produce the structure (p. 13).

Background Knowledge of Subject-Verb Agreement

Given these insights from processability theory, I deemed it necessary to take background knowledge of subject-verb agreement, furthermore termed “proficiency” into consideration. Proficiency was factored in this study to account for the fact that learning is not homogenous across all learners at all levels. More specifically, this study intends to group learners in different levels of proficiency to determine what improvement occurred at each level. It is also important to consider individual learning variables such as proficiency because not all learning outcomes are directly related to one particular variable such as the use of output. With this is mind, I hypothesize that low and mid level proficiency learners will most likely demonstrate lower scores for development of explicit and implicit knowledge of IOPs on the final assessments.

Studies Incorporating Proficiency Levels

Several studies have integrated proficiency level with the topic of collaborative interaction. For instance, Watanabe & Swain (2007) incorporated both the effects of proficiency differences and patterns of partner interaction with collaborative dialogue in their study with 12 Japanese learners in an ESL program at a Canadian University. Based on prior testing, each learner was placed into either a low, intermediate or high proficiency group. The 4 intermediate learners were coded as the core group because they each interacted with one high and one low learner. The data analysis consisted of transcribed pair talk and interviews that were coded for language related episodes (LREs). From the transcriptions they calculated a ratio of turns and described pair talk for the following 4 traits: (1) pattern of contribution, (2) decision-making behavior, (3) nature of assistance, and (4) discourse and linguistic features. Their results revealed that core-high pairs produced more LREs than the core-low pairs. In a similar manner, more collaborative groups produced more LREs than those with a non-collaborative orientation. Posttest scores revealed that core participants received higher test scores when working with lower proficiency partners. Also, higher scores were achieved for partners with a collaborative pattern. Watanabe & Swain noted that it remains unknown as to whether higher scores and more language related episodes were due to proficiency or a pattern of interaction.

Contrary to what Watanabe & Swain (2007) found, Lesser's (2004) study on learner proficiency and focus of form during collaborative dialogue suggests that proficiency affects the amount of focus on form, the types of form the learners focused on, and how successful they were at solving language problems (p. 55). Lesser (2004) studied the effects of proficiency within a collaborative pair. This study, carried out with 42 participants (four sections) of a fourth semester, university-level, content-based Spanish American Geography course, examined the effects of proficiency within a collaborative pair using a dictogloss, otherwise referred to as a passage reconstruction task. Lesser determined proficiency by rating learners overall Spanish ability as either high or low in comparison with other learners in the same class. Learners were then divided into one of three dyads: high-high, high-low, or low-low. Recordings were transcribed and two raters independently identified language related episodes (LREs) and coded them as having a grammatical or lexical focus. Results showed that the total number of LREs decreased along with the overall proficiency in the dyads. The focus of higher proficiency dyads contained more grammatical than lexical LREs; conversely, most of the dyads with the low proficiency learners focused on lexical rather than grammatical items. The dyads of high proficiency learners solved more of their LREs correctly than the other dyad; for example, only 3 of 76 LREs were left unresolved by higher proficiency learners. Thus, Lesser suggested that higher proficiency learners benefited from being paired with each other in terms of opportunities to focus on form and how they were able to resolve the language problems that arose (p. 73). Lesser inquired as to whether lower proficiency learners may not be benefiting as much due to their inability to discuss certain linguistic problems. As he claimed, they may not be developmentally ready since they seemed to have difficulty internalizing al the information coming from the more proficient pair (p. 72). Results of Lesser's (2004) study agree with Williams (1999, 2001) who also found that learners in higher proficiency produced more LREs. Williams' (1999) study on 8 classroom learners at 4 different levels of proficiency centered upon learner-generated attention to form and questioned whether learners can help each other improve accuracy on form.

Lesser's (2004) findings support Yule and Macdonald (1990) who found that not all learners benefit from interaction equally. Yule and Macdonald examined different types of tasks and different participant arrangements during partner interaction among L2 learners. Their study placed 40 high-intermediate to advanced ESL learners in pairs, each with different L1s to complete a communicative information gap task. Ten pairs had the higher proficiency learner as the sender of the information and the lower proficiency learner as the receiver. The other 10 pairs had the lower proficiency learner as the sender and the higher as the receiver. Results of their study showed that when the higher proficiency learner was the sender, or had the more dominant role, he/she engaged in less interaction. Conversely, the higher proficiency leaner was engaged in substantial negotiations when he/she played the role of the sender. They conclude that the more proficient learner should be given the less dominant role to foster interactive negotiation (p. 553).

Summary of Research on IOPs

In this chapter we reviewed the target structure, indirect object pronouns (IOPs), primarily in terms of their morpho-syntactic properties and the challenges they pose for L2 learners as the dependent variable in this study. This chapter began with a discussion of theories regarding grammar acquisition and continued with a description of the types of knowledge a learner may have about L2 grammatical structures as explicit and/or knowledge. We concluded with a discussion of issues of developmental readiness and proficiency levels in order to establish a plausible association with L2 grammar development. As in previous studies (Akakura, 2012; Leung & Williams, 2012; Rebuschat & Williams, 2012), my study will assess development of implicit knowledge by learner's correct identification of IOPs in a series of timed grammaticality judgment tasks. Based on the challenges L2 learners face with regards to acquisition of IOPs, sentences in the grammaticality judgment tasks were created to reflect errors of omission and incorrect form. Development of explicit knowledge will be assessed through a series of untimed picture description tasks. After considerable output practice, it is expected that learners will recognize the need to use IOPs when describing pictures that allude to a subject, verb, direct object and indirect object. As research has suggested, learners may use the full noun phrase in place of the IOP. In Chapter 2 we will explore output as the means of developing implicit and explicit knowledge of IOPs. As in several previously mentioned studies, I will investigate the effect of LREs on L2 development of IOPs to examine whether lower proficiency learners initiate LREs, and if they seem to benefit from grammatical LREs initiated and solved by higher proficiency partners of the dyads.

CHAPTER 2

LITERATURE REVIEW

In the last chapter we explored Spanish indirect object pronouns (IOPs), and the challenges L2 learners face to acquire them. In this chapter, we present the rationale for output production as a treatment to facilitate acquisition of IOPs. In addition, we examine studies that support language related episodes (LREs) as a possible facilitator of learning via partner interaction. Next, we discuss research on teaching materials that guided creation of activities given during the treatment period. Finally, we conclude this chapter with final statements of summary of research.

Theoretical framework for Output: the Interaction Hypothesis

Considerable attention has been directed towards the role of interaction with respect to the conditions considered important for SLA. Such conditions include the learner's comprehension of input, access to feedback, and production of modified output (Gass & Mackey, 2006). In this section we address the claim that interaction can facilitate acquisition by assisting learner production and that the negotiation of meaning creates an opportunity for learners to develop their interlanguage (IL) systems. In early work on the interaction hypothesis (IH), Long (1983) posited that confirmation checks and clarification requests could facilitate L2 learning by making input more comprehensible. According to him, comprehensible input could serve as data for L2 language system. Revisions of the IH emphasized the importance of negative feedback and modified output to L2 learning (Long, 1996). Long defined negotiation of meaning as "denser than usual frequencies of semantically contingent speech of various kinds (i.e., utterances by a competent speaker, such as repetitions, extensions, reformulations, rephrasings, expansions, and recasts), which immediately follow learner utterances and maintain reference to their meaning" (p. 452). He explained that negotiation involves recycling related items while a problem is resolved, which may increase saliency and the likelihood of being noticed. Furthermore, he suggested that the role of negotiation for meaning facilitates acquisition because it connects input, internal learner capacities and output in productive ways. In addition to negative feedback, Long claimed that interactional modifications produce longer utterances or sentences with greater syntactic complexity (p. 421). Research guided by this theoretical perspective (Pica, 1991, 1994) has shown that small group work provides learners with opportunities to give and receive feedback. The basic tenet of the IH is that through interaction, learners have opportunities to notice gaps between their speech and target language structures by receiving corrective feedback. In other words, input and feedback are the source of their knowledge about what correct target structures are, which could push them to modify their output during conversations. Learners may then be pushed by the feedback to change the original form in order to create the proper form-meaning connection. Modified output has been argued to promote learning since it leads learners to reflect on their original language as they make the necessary adjustments (Gass & Mackey, 2006). Based on the idea that negotiation of meaning simultaneously cause learners to focus on L2 forms and communication (Doughty, 2001); instructors often believe that learner interaction is an essential ingredient for L2 development.

The following section highlights some of the key studies that have built upon the current understanding of the role of input and output within the context of interaction. Doughty & Pica's (1986) study investigated whether more modifications were made when interactional exchanges were optional or required across teacher-directed, small-group and dyad interactional patterns. Their findings suggest that a task that has a requirement for information exchange is essential in generating interactional modifications. Their results demonstrated that learner-learner discourse can be even more beneficial than teacher-fronted situations as there were more modifications in learner-led discourse (24%) than teacher-led discourse (15%). They concluded that effective group activities, where there is a two-way or multi-way exchange, proved to be helpful in describing an instructional context in which meaningful output can take place. In more recent studies, Pica (1994) suggested that modifications should be followed by individual measures of learning outcomes in order to verify that negotiations lead to morpho-syntactic development. Although Pica's work was very useful in dealing with the question of the function of output in learning, she demonstrated how L2 learners negotiate meaning with native speakers instead of learner-learner interactions. She advocated for further research that could provide evidence as to how negotiation can influence learning.

Partner Interaction

Although many researchers have agreed that interaction promotes L2 development, questions as to *how* it may promote L2 learning remain. A very influential study done by Kowal & Swain (1994) investigated a particular type of task called a dictogloss, which is a task that encourages learners to work together to co-construct a written text. They found that when learners worked collaboratively there were effective opportunities to notice gaps in their language, to draw attention to form and meaning, and to receive feedback from peers. Several studies have examined the type of interaction present in learner-learner interaction, as collaborative or non-collaborative, because as some researchers have noted, not all pairs/small groups behave in the same manner. Storch (2001) found that students working in pairs do not necessarily work in a collaborative manner, but when they do, a collaborative orientation may have a positive effect on task performance. Storch (2002) investigated what patterns of interaction could be found amongst 10 pairs of adult ESL learners through 3 different tasks (2 completed collaboratively and one completed individually). She then examined if differences in dyadic interactions resulted in different learning outcomes in L2 development. Data analysis consisted of two stages. In the first stage, pair talk was audiotaped and a random sample of transcripts was analyzed qualitatively. Storch noted how learners approached the task, the roles they assumed, the level of involvement, and each partner's contribution. Once she analyzed learners' performance, she applied the concepts of mutuality and equality to identify interactional patterns in each dyad: mutuality refers to the level of engagement with each other's contributions, while equality refers to the degree of control over the task (Damon & Phelps, 1989). Based on her analysis, Storch identified the following patterns from the data based on high or low levels of mutuality and equality: (1) a collaborative pattern, which consisted of high mutuality and high equality; (2) a dominant/dominant pattern, which consisted of low mutuality and high equality; (3) a dominant/passive pattern, which consisted of low mutuality and low equality; and (4) an expert/novice pattern, which consisted of high mutuality and low equality. In the second stage, pair talk data were analyzed together with the tasks learners completed individually to trace any effect from paired interaction. In each task she identified: (1) instances where a transfer was found from the pair work to subsequent individual performance (labeled as "instances suggesting a transfer of knowledge"); (2) instances where no transfer was evident (labeled as "instances showing no transfer of knowledge"); and (3) instances where learner made errors on individual task were traced to evidence of little deliberation in pair talk (labeled as "missed opportunities") (p. 137-38). Her study revealed that not all learners worked collaboratively when assigned to work on language tasks in pairs, but when they did, there were less missed opportunities and more evidence for transfer of knowledge. For instance, data showed most transfer of knowledge with the group that interacted collaboratively, whereas groups that interacted non-collaboratively (dominant/dominant and dominant/passive dyads) showed the least amount of transfer and missed opportunities. Storch concludes that the collaborative dyads may have been most effective in showing transfer of knowledge as these learners seemed positively disposed to group/pair work because there was no one fixed "expert" (p. 147).

This section will present leading studies in the topic of collaboration, which compare individual and pair work. Storch (2005) examined the nature of collaboration when learners work jointly to complete a writing task. Twenty-three university ESL learners were given a choice to write a text in pairs or individually; eighteen chose to work in pairs while five chose to work individually. The texts were analyzed quantitatively for fluency, accuracy and complexity as well as qualitatively for the content of the text, structure, and task fulfillment. Although Storch did not find any statistically significant quantitative results, she found that collaboration led to shorter, but more accurate written texts. Based on her findings, she concluded that collaborative writing afforded learners the opportunity to give and receive immediate feedback on language, which may explain why pairs tended to produce more grammatically correct texts.

In a subsequent study, Storch (2007) examined the efficacy of pair work by comparing pair and individual work on a grammar-focused text editing task. In her 2007 study she divided participants into one of four groups: Group A completed the task in pair, Group B individually, and Groups C and D were given the choice to work in pairs or individually. All pair talk was recorded, transcribed and then analyzed for any language related episodes (LREs) where learners talked about the language or made suggestions to amend the text. Storch then coded each LRE as interactive or non-interactive. The editing tasks that learners completed were analyzed for grammatical accuracy and lexical appropriacy. Storch found that when learners completed the task in pairs they were significantly engaged in interaction and reflection about language forms. Qualitative data of pair talk suggested that pair work afforded learners opportunities to pool their linguistic resources and co-construct knowledge about language as most LREs were solved interactively (p. 155). However, a quantitative comparison of accuracy of texts did not show any advantages for learners working in pairs as scores in accuracy showed only a modest difference of 68% for pairs and 62% for students working individually. Therefore, although no significant difference was found between the accuracy of tasks completed collaboratively versus individually, it was suggested that pair work provides learners with opportunities to use the L2 for a range of functions such as analyzing meaning of words, grammatical rules, and conventions of writing.

Similar to the studies done by Storch, Hossein and Tian (2010) examined and compared the effectiveness of collaborative output tasks for learning English phrasal verbs. They used reconstruction cloze tasks[3] and reconstruction editing tasks to examine whether performing the tasks collaboratively led to greater gains in vocabulary knowledge than doing the tasks individually. Additionally, they examined whether the type of task lead to greater differences in vocabulary knowledge. Effectiveness of tasks was determined by how learners completed the task and by tests administered on vocabulary before and after treatment. Unlike Storch (2007), results of Hossein & Tian (2010) showed that completing the tasks collaboratively (in pairs) led to more accurate task completion than performing the tasks individually. However, collaborative tasks did not lead to significantly greater gains of vocabulary knowledge than individual tasks on posttests. They explain that the lack of vocabulary improvement could have been due to the nature of interaction, which was limited, and may not have been rich enough to lead to internalization of knowledge possibly because learners had difficulty in scaffolding each other and providing peer assistance (p. 412). With regards to the type of task, learners were more successful in completing the cloze task than the editing task. In a qualitative analysis, they did find that pair talk in the editing task led to greater instances of metalinguistic and form-focused feedback about the target verbs than the cloze task. Based on this finding, they concluded that such negotiations in the editing task could have drawn learners' attention to phrasal verbs more effectively and hence resulted in deeper knowledge of the target items (p. 413).

One conclusion that may be drawn from the above studies is that collaborative pair work may facilitate learners' interaction and attention to the target forms, but it may not necessarily lead to superior learning in comparison to individual work (Hossein &

[3] A cloze task is an exercise consisting of a portion of text with certain words removed where the participant is asked to replace the missing words.

Tian, 2010, p. 400). Unlike Storch (2005, 2007) and Hossein and Tian (2010), my study will not compare collaborative work with individual task completion, but rather analyze whether interaction regarding the target structure seemed to lead to development of IOPs as assessed through testing. Similar to the abovementioned studies, I will analyze language related episodes to find if negotiation over the target structure led to greater instances of L2 development.

Language Related Episodes (LREs)

Many researchers have suggested links between interaction and learning outcomes by examining language related episodes (LREs) as evidence of negotiation of form and meaning. Swain (1998, p. 70) defined an LRE as “any part of a dialogue in which students talk about the language they are producing, question their own language use or other- or self- correct”. My study investigates whether LREs offer opportunities for the development of explicit and implicit knowledge of IOPs and its application to language use. Studies have shown that collaborative performance on tasks often lead to more LREs (Williams, 1999, 2001; Fortune, 2001). Also, within the topic of collaborative work and LREs, previous research has shown that the number of LREs rises with proficiency, perhaps yielding observable benefits from an increase in quantity. As Williams (1999) suggests, higher proficiency learners are more likely to process and profit from the information contained in LREs, which may be due to having greater background knowledge to which new information can be related (i.e., greater knowledge of the language to facilitate comprehension of vocabulary) and also greater metalinguistic knowledge (p. 330). The following section expands the debate over the influence that collaboration and proficiency may have in learning, specifically with regard to the amount and type of LRE, given that these issues are interconnected.

Studies on LREs

Williams (1999) defined LREs, almost identically to Swain (1998) as discourse in which learners talk or ask about language; question, implicitly or explicitly, their own language use or that of others. As Williams explains, a LRE may occur in reference to the meaning, spelling, and pronunciation of a word, the choice of a grammatical inflection, word order, or other aspects or language use (p. 4). In her study, she grouped a total of 8 participants by 4 proficiency levels based on a Secondary Level English Proficiency Test. Based on grouping, there were 2 participants in each level. Participants were then audiotaped during pair work on various activities with differing opportunities for focus on form. Williams identified and then classified types of LREs into the following 5 categories: learner request of teacher, learner request of learner, learner-learner negotiation, metatalk (when learners were engaged in talk about language) and other correction (when learners corrected one another). Although some may view metatalk as negotiation, Williams defined the latter as "one centered on the reestablishment of comprehension and communication following a breakdown" (p. 320), while metatalk focuses on the language, such as requests and assistance by learners. Her results showed that, overall, learners do initiate LREs, but not very often. In addition, the frequency and type of LRE varied with proficiency level. She also found that the most prevalent type of LRE was request of teacher, but that learners increasingly sought help from one another as proficiency rose. A limitation of this study is that Williams did not link LREs to learning outcomes as I intend to do in my study.

In a subsequent study, Williams's (2001) descriptive study explored classroom interaction between learners to document instances of unplanned attention to form. Unlike her 1999 study, in this study she linked attention to form to learning outcomes through periodic testing of those forms that emerged through LREs. As in her 1999 study, pairs (also grouped by proficiency) were audiotaped and LREs were identified. Once transcriptions were examined, tailor-made tests were created to see the effects of LREs on learning outcomes. She commented that although high test scores did not mean that the form had been acquired, if the learner were to get it wrong in the controlled context, one could conclude that the LRE had little effect (p. 335). Her study provides important evidence for the impact of LREs on learning outcomes as she found that learners almost always produced an accurate response on posttests when they figured out the answers for themselves. Percentages of successfully resolved LREs overall for each group were as follows: (1) level one, 45%; (2) level 2, 67%; (3) level 3, 78%; and (4) level 4, 94%. Thus, analysis of LREs indicated a strong effect for proficiency level, through a higher percentage of LREs solved correctly. She suggested that proficiency seems to provide increasing returns, "not only do the more advanced learners generate more LREs; they also use this information more effectively" (p. 336). As she explained, what occurred during LREs seemed likely to get transferred to long-term memory for more proficient learners. Meanwhile, the lower scores for low-proficiency learners suggested that they were less ready to integrate the new input generated during LREs.

Fortune & Thorp (2001) sought to refine the framework of LREs used by other researchers to analyze L2 output beyond type and quantity in order to reflect the value of such episodes. Their definitions of LREs differed slightly from Swain (1998), in which she defined them as “any part of a dialogue in which students talk about the language they are producing, question their own language use or other- or self- correct” (p. 70). Because Fortune & Thorp considered LREs as identifiable units of a *collaborative activity*, self-corrections were not included in his definition of LREs, although other-corrections remained. In this study, Fortune & Thorp examined the role of collaborative output in L2 development, particularly in the use of metalanguage. The study was completed with 2 university level ESL classes, who were all classified as intermediate proficiency learners based on a test given prior to the study. Participants were divided into 5 dyads with the purpose of reconstructing 4 dictogloss tasks that each contained examples of different selected grammar features. All partner interaction was recorded and transcribed. Their results showed that explicit discussion about language occurred in 27.8% of LREs. Data show evidence of how collective scaffolding can help resolve difficulties in encoding language items. According to this study, “the large amount of collaborative language-related decision-making provides evidence of the crucial roles both of output and of collaborative learning processes in second language development” (p. 158). They also added that in about a third of LREs, metatalk gave opportunities for noticing and hypothesis testing confirming claims of Swain’s (1998) output hypothesis. Fortune’s (2005) study further examined learners’ use of metalanguage in collaborative form-focused L2 output tasks and their frequency of occurrence. This study compared results of grammatical and lexical LREs containing metalanguage with advanced learners to Fortune & Thorp’s (2001) study, which used intermediate learners. Results revealed that advanced learners concentrated more on form and also employed much more metalanguage in doing so (p. 35). Findings suggest rather strong evidence that the interactions of the advanced learners involve much more concentrated focus on form than those of the intermediate learners, which corroborates with Williams (1999, 2001). In my study, an analysis of grammar oriented LREs will be used to determine whether LREs seem to facilitate development of IOPs.

The Roles of Input and Output

Since interaction is believed to create the context in which learning can take place, the following sections provide a detailed description of studies that have investigated the relative roles of input and output in the language acquisition process. It has been shown without debate that input is a basic component, if not the most important element, in SLA. For example, researchers working within Chomsky's generative linguistic theory view input as the trigger that interacts with an innate system and or/native system to promote language learning (Gass & Mackey, 2006). Output, on the other hand, has a more debated role in L2 development. For instance, Krashen (1985) postulated that output is only a sign of language that has already taken place and that it does not serve any function in the language acquisition process. Similarly, VanPatten (1996, 2000) claimed output is a by-product of learning. While VanPatten does not deny the importance of interaction, he questions whether output is necessary in SLA. According to VanPatten (2004), output pushes learners to be better processers of input. In other words, pushed output's role may be to speed up acquisition in that it strengthens the learner's awareness of FMCs. However, he states the role of output in strengthening these connections is far from evident (p. 42). He concluded that, "we are unable to support any specific role for output in the creation of an underlying competence that contains form-meaning connections. At best, we can say that input is necessary for acquisition, but input + output may be better-- we just do not know under what circumstances" (p. 43).

Focus on Input in Learning

Although the focus of my study is the role of output on acquisition of IOPs, we will first review some key studies regarding the role of input since these remain relevant within the framework of interaction mostly because they have compared the effectiveness of input processing with output production. As we will see, several researchers have sought to suggest input alone is sufficient to drive L2 development. One of the most known and cited is VanPatten (1996, 2004), the main proponent of the teaching method Processing Instruction (PI), which is based on his research into L2 Input Processing (IP). Processing Instruction is a type of grammar instruction whose purpose is to influence the ways in which learners attend to input data. The principles set forth in this method are hypothesized to govern how learners process input by focusing learners' attention on target-form meaning connections through comprehension activities and feedback (Harrington, 2004). VanPatten's IP model seeks to provide a psycholinguistic explanation for the widely observed fact that early in development, L2 and L1 learners often encounter difficulty with comprehension and production of certain grammatical forms, particularly with bound morphemes. Furthermore, advocates of PI state this method of grammar instruction provides a way to offset processing capacity limitations by making form-meaning connections as salient as possible through a step-by-step process. To explain, real-time processing demands may force the learner to be more selective, resulting in a focus on referential meaning over more abstract constructions, such as bound morphemes (p. 82). Thus, PI provides a way to make large quantities of information comprehensible, for example, by presenting one form at a time.

Studies that Favor Input Processing

Through experimental studies conducted with university learners of Spanish, VanPatten and his colleagues (Cadierno, 1995; Collentine, 1998; Farley, 2001), were able to show persuasive evidence in favor of the effectiveness of Processing Instruction for learner improvement on comprehension and production tasks. They concluded that learners who were taught using PI (form-meaning connecting input) not only had better comprehension, but also better production than groups that were focused simply on producing output. Of the studies that favor input processing, it is essential to mention VanPatten & Cadierno (1993), which was the original ground-breaking study on PI. In their study, they compared instruction as the manipulation of output and instruction as focused input processing with direct object pronouns. Three second-year university level Spanish classes were divided into one of three treatment groups with the target structure: (1) the first group received traditional explicit instruction with oral practice; (2) the second received "processing" instruction; and (3) the third group did not receive any explicit instruction at all regarding the target structure. Improvement was assessed by an interpretation and a production task. Scores revealed that the group with processing instruction outperformed the traditional instruction group on the interpretation task. However, scores for the production task were roughly the same, with results of the second and third posttest being identical. Based on their findings, they conclude that "instruction is apparently more beneficial when it is directed towards how learners perceive and process input rather than when instruction is focused on having learners practice the language via output" (p. 54). Similarly, Cadierno (1995) compared PI with traditional output-based instruction with the Spanish past tense as the target structure. Results revealed significant gains in both comprehension and production for the PI group, while significant gains in the output-based group were only found in production.

VanPatten and his colleagues have noted that VanPatten's PI was most effective because of the form-meaning connection that was established with the target structures. However, VanPatten and Cadierno (1993) compared meaning based PI to a traditional approach, which included output as mechanical drills. As Toth (2006) commented, such a comparison could not indicate whether PI outperforms traditional instruction because it contained output or because the output was not meaningful. It was also noted that PI did not measure spontaneous oral production, only controlled and written production (Muranoi, 2007). Although VanPatten's studies were criticized as lacking in meaningful output, Farley (2001) compared PI with meaning-based output instruction. In his study 29 university learners were taught the Spanish subjunctive[4] in expressions of doubt with different instructional packets, each designed with one focus on teaching the target feature. The PI packet included 8 structured input activities with a handout of an explicit explanation of the subjunctive. The output-based packet included 8 structured output activities and the same handout as the other group. He found that both PI and meaning-based output resulted in some type of knowledge gain after treatment. Further analysis of the data showed that a PI group outperformed a meaning-based output group on interpretation and production tasks. He suggested that input is sufficient, and potentially more essential than output for comprehension as well as production. Although some of the abovementioned studies suggest greater learning outcomes for input processing than

[4] All subjects had no prior instruction on the use of the subjunctive in Spanish.

output practice, they have also been influential in establishing the importance of a focus on meaning in output.

Focus on Output in Learning

The claim that output is an effect of learning and not a cause has been questioned since the publication of Swain's (1985) Output Hypothesis. Many researchers who have worked with a focus on output have based their work on the Swain's Output Hypothesis, which currently specifies four functions of output (1995, 1998). Swain (1985) first suggested roles for output were independent of comprehensible input. She proposed that output provides the opportunity for meaningful use of one's linguistic resources. Additionally, she stated that learners need to be pushed towards the delivery of a message that is conveyed precisely; and that push for output is what she calls, the "comprehensible output" hypothesis. In her original hypothesis she proposed two additional functions of output: that output offers the opportunity to test hypotheses; and that using language may force the learners to move from semantic to syntactic processing (p. 249). In other words, producing the message may force learners to pay attention in order to express their intended message successfully. In a later publication Swain (1995, 1998) identified 3 potential roles of output in second language learning. Swain (1995) explained that the principle underlying the functions of output is that it may stimulate learners to move from semantic to syntactic processing; and thus, may have a significant role in the development of syntax and morphology (p. 128). She added that output provides opportunities for developing automaticity in language use, otherwise referred to as the fluency function. According to Swain, fluency and accuracy are not the same, so then she proposed three functions of output that she suggests leads to accuracy. The first proposed role of output was that learners may notice a form is different from their own interlanguage or learners can notice that they cannot say or write what they want. Consequently, producing the target language may prompt learners to consciously recognize their linguistic problems (1998, p. 67). Second, she proposed that output may serve as a means of hypothesis formulation and testing. As she explains, learners may use output as a way of testing new language forms and structures to meet communicative needs to see what works (p. 68). The third function, metalanguage, refers to the ability for learners' own language to indicate an awareness of something about their own, or their interlocutor's use of language. She emphasizes that it is not necessary for learners to use metalinguistic terminology in talking about language. It is important to note that Swain (1995) indicated that not all three functions operate whenever learners produce the target language and that further research was needed to determine under what conditions they do operate.

Since its debut in the late 1980's, various researchers have demonstrated that learners who engaged in language output made significant gains in language production tasks as compared to those who worked with language input only (Dekeyser & Solaski, 1996; Muranoi, 2007; Toth, 2006). The following studies have investigated roles for output in SLA: fluency function (Bygate, 2001; DeKeyser, 1997), hypothesis testing (Pica, 1994), metalinguistic function (Swain, 1998; Swain & Lapkin, 2001) and the noticing function (Izumi, 2002; Izumi and Bigelow, 2000). Muranoi (2007) reviewed various empirical studies on the effect of output practice. She claims that although the number of studies is rather limited, studies suggest that instructional treatments eliciting learner output promote major cognitive processes in SLA, including noticing, hypothesis formulation and testing, conscious reflection, and automatization (p. 59).

Studies on the Role of Output

The controversy over the function of output in L2 development continues to center on describing *how* it is crucial to L2 development. Over the past 10 years a number of studies have shown a positive effect on learning due to output (Muranoi, 2007; Izumi, 2000, 2002; Toth, 2006; De Jong, 2005, 2009). Each study builds upon an understanding of its usefulness, but more studies on various target forms, time allotted, and instructional approaches are needed to come to a consensus on the function of output. As we will see in upcoming studies, the importance of input has not diminished, but output has become a major component in the search for elements of language learning.

De Jong (2009) investigated whether rich and extended practice with listening or speaking facilitated acquisition of implicit knowledge of adjectives and agreement. Her study was conducted with 59 participants, who all had no prior knowledge of romance languages, learning adjective agreement in Spanish. Participants were assigned to one of three groups: (1) a comprehension group; (2) a comprehension and production group; and (3) a control group with explicit rules on gender agreement. Groups 1 and 2 were not explicitly informed of the rules; rather their training consisted of listening to or orally producing a large number of sentences that demonstrated adjective agreement. The control group did not receive these examples, but instead read a thorough explanation of the rules. In order to test accuracy and speed of the target structure, participants completed a comprehension test that required them to listen to sentences and indicate whether it matched the picture; and a production test required participants to orally describe various pictures, as they had completed in practice sessions, within 8 seconds. The results showed that the comprehension only group responded fastest in comprehension tests, and reached a modest accuracy in the production tasks, which showed they had acquired some knowledge. However, this group made more errors in the production tasks than the other two treatment groups, which may suggest that types of training that go beyond mere comprehension may lead to stronger learning outcomes. Furthermore, the differences between Group 1 and Group 2's performance suggested that comprehension skills did not generalize completely to production skills, but rather production practice improved production skills. Because these findings do not corroborate those of VanPatten and his colleagues (1993, 1995, 2001), De Jong argues that future research needs to investigate what the relation is between comprehension and production skills, and what types of training can improve these skills.

Erlam et al.'s (2009) study with ESL learners investigated the relative roles of input and output to address the question of whether there is a role for output in the acquisition of implicit and explicit knowledge. Their study divided 51 participants into one of the following groups: (1) an output instruction group (OI); (2) an input instruction group (InI); or (3) a control group with no instruction that took part in testing. Both the output and instruction group received the same explicit explanation, but two instructional packets were used for the treatment on the target structure, indefinite articles. Two separate assessments were used: an oral elicited imitation test to assess implicit knowledge, and an untimed grammaticality judgment task to assess explicit knowledge. Their results showed gains for the OI group on both oral elicited imitation and grammaticality judgments. The output instruction (OI) group also outperformed the control group and the input instruction (InI) group on the oral elicited imitation task suggesting output may impact the development of implicit knowledge (p. 260). On the other hand, there were gains for both groups on the untimed grammaticality judgment task. As Erlam acknowledged, one of the limitations of the study was that they were unable to specify what exactly accounted for the gains in learning that participants in the OI group made. Still, these results challenge those who claim that output plays only an accessory role in the language acquisition process, but rather suggest that output may impact on the development of explicit and implicit knowledge.

We will examine the following studies that present a strong argument for output in L2 grammar development: Toth (2006, 2008), Izumi & Bigelow (2000) and Izumi (2002). Toth (2006) examined the role of output in SLA by comparing communicative tasks (CO) and output-free processing instruction (PI) with the use of the grammatical feature *se*. This study included 80 English-speaking adult students of Spanish at the university level divided into 3 groups: (1) a processing instruction (PI) group, (2) a communicative tasks (CO) group; and (3) a control group. The design followed a pretest-posttest-delayed posttest design in which grammaticality judgment (GJ) tests and guided production tasks were used as means of testing. His results revealed that The CO group outperformed the PI group on GJ tests and also showed more frequent use of *se* in guided production. Furthermore, transcript evidence suggested that CO learners could have attended to L2 form-meaning as much if not more than PI learners. In a subsequent study Toth (2008) compared quantitative and qualitative results for task-based L2 grammar instruction on learner-learner (LLD) discourse vs. teacher-led (TLD) discourse and the use of *se*. His study was comprised of 78 L2 beginning Spanish learners divided into one of three groups: (1) a LLD group; (2) a TLD group; and (3) a control group. As in his 2006 study, grammaticality judgment tasks and guided production tasks were used to assess learning outcomes. Although his study showed better performance on post-tests for the TLD group, compared to the LLD group, qualitative data showed how learners negotiated form and in some cases consequently improved on immediate production. Transcript data revealed the LLD group had more negotiations on linguistic issues beyond the target structure, which in turn reflected in less focus on the target feature. On another hand, transcript data showed that LLD yielded facilitative L2 metatalk supporting Swain (1998, 2000), which suggest that collaboration among peers can yield linguistic outcomes that exceeded the limitations that any one of them might face alone. Thus, data suggest that although there are identifiable advantages to both classroom discourse formats, the teacher's contribution in TLD provided learners: focused elicitation, procedural assistance, and form-focused feedback, which all might have more greatly benefited whole-class learners' performance with the target structure (Toth, 2008, p. 274). Such findings demonstrate the need to use not only quantitative but also qualitative data to provide further insight into the interpretation of often rather surprising results.

More support for a positive relationship between output and learning is found in Izumi & Bigelow (2000) and Izumi (2002). To begin, Izumi and Bigelow's (2000) study on pushed output as an internal attention-drawing technique in SLA implemented a treatment that provided learners with opportunities to receive relevant input and engage in output with the past hypothetical conditional in English. In this study participants were divided into two groups: an experimental group (EG) that received input then practiced with output, and a control group (CG) that did not produce any output. The treatment consisted of 2 phases, each with a posttest immediately following it. In phase 1, EG participants were required to write an essay using the target structure, they were then given a text with input of the target structure and wrote another essay on the same topic. The CG only read the text as a reading comprehension exercise. In phase 2, the EG read and then reconstructed a written text, whereas the CG only read and answered true/false questions about the text as in Phase 1. Izumi & Bigelow hypothesized that the experimental group, which was required to produce output would show greater noticing of the target feature. The results of this study did not show any significant difference between the groups on the posttest. Although scores for the EG group did not show greater acquisition of the past hypothetical conditional, significant improvement was found in the second phase of the treatment for the EG when the task was repeated. Thus, they suggest extended opportunities of output to be advantageous for the EG in improving learners' accuracy of the targeted grammatical structure (p. 262). Izumi & Bigelow concluded that findings point to the importance of extended opportunities to produce output and receive appropriate input in improving the use of the L2 forms.

In a subsequent study of L2 output, Izumi (2002) investigated the potentially facilitative effects of output and visual input enhancement on L2 development. The goal of this study was to address whether producing output promotes noticing of formal elements in the target language as compared to visual input enhancement. Learners in the output group reconstructed a writing task, whereas the visual input group (furthermore termed input group) answered extension questions and multiple choice format questions with the same text without producing output. Izumi found the output groups outperformed those exposed to the same input with comprehension only on posttests. As a result, Izumi considered output as a means for drawing learner's attention to crucial form features. He suggested that the advantage of pushed output might lie in promoting three processes that are important to learning complex grammatical forms. First, he states pushed output may facilitate detection of formal elements in the input. Second, pushed output can push learners to serve as a stimulator of integrative processing (also referred to as syntactic priming) of the target structure, which is a speaker's tendency to produce a previously spoken or heard structure. Lastly, it can aid noticing mismatches between one's interlanguage forms and the target language model (p. 572).

In my study, I will investigate Izumi's claim that pushed output promotes not only detection of forms, but also integrative processing among detected elements. Based on Izumi's findings we can deduce that learners who engaged in output may be required to process form-meaning connections at a deeper level than those who worked with structured input only (Izumi, 2003; Toth, 2006). Or we can suggest, as Swain (1985) did, that the requirement that learners produce output necessitated the processing of language that may not have been necessary for comprehension and that there was a shift from purely meaning-oriented processing strategies towards more syntactically sensitive ones. Izumi advocated that future research should focus on long-term effects of the output-input treatment and consider the necessary cognitive processing that may be needed for the learner to acquire L2 forms. As we discussed in Chapter 1, the morpho-syntactic challenges to acquiring IOPs makes them a good candidate to continue Izumi's work on cognitively challenging L2 structures with novice learners.

Integrative Processing/Syntactic Priming

Izumi (2002) noted possible effects that output may have on syntactic processing, and therefore, on the interlanguage of L2 learners. Studies in support of integrative processing, or syntactic priming, have shown that speakers tend to repeat syntactic structures that they have recently either produced or comprehended. For example, speakers who have just heard a sentence like 'The mother read a story to her son', are more likely to describe a picture depicting 'The boy gave a book to the girl' than as 'The boy gave the girl a book' (Pickering et al, 2000). Syntactic priming, based on the research of Boch (1990, 1995) attempts to demonstrate that when speakers have a choice between alternative structures, they produce the one that was produced or heard. The goal of my study is to relate this phenomenon to the oral production of IOPs. I hypothesize that L2 learners' oral production of grammatical structures with a specific order, may facilitate their L2 syntactic development. For example, if in a given activity learners are required to ask and answer multiple questions ordered such as: *¿Qué le dices a tu amigo cuando entra a su casa*? (What do you say to your friend when you enter his house?) - *Le digo hola, ¿qué tal?* (I say hello, what's up to him.), they may be likely to incorporate the IOP preverbally, particularly with the verb *decir (to say/tell)*.

Very interesting outcomes have been found with McDonough's (2006) study on interaction and syntactic priming with dative constructions from advanced English L2 speakers. She explored whether syntactic priming has potential to play a role in L2 development through interaction. In order to investigate whether speakers coordinate syntactic structures during a conversation, she used a data elicitation technique termed confederate scripting, a technique in which a participant carries out a picture description and matching activity with an interlocutor, who is actually a confederate of the researcher (p. 185). During the treatment phase, fifty participants were exposed to 40 picture cards with prepositional (buy the book for you) and double object dative primes (buy you a book). After they finished the cards, each learner took turns describing 60 picture cards. Her results showed that syntactic priming only occurred with prepositional datives (buy the book for you) as learners were only incorporated these phrases into their production. McDonough stated that the reason why syntactic priming might not have taken effect with the double datives (buy you a book) is that these L2 English participants may not have acquired the complex semantic and morphological rules associated with the double-object dative. Specifically, the learners might not have reached the stage in which the production of double object datives is limited to specific lexical items. For example, in order to produce double datives, one needs to know that double-object datives do not occur with all verbs as in *take you a picture (double dative) vs. take a picture of you (prepositional dative). The results of this study motivate me to investigate if production of particular syntactic structures can serve as a positive contributor to L2 development.

Additional support for syntactic priming was found with McDonough & Mackey (2008) who examined whether syntactic priming is associated with ESL question formation. This study used 46 intermediate learners of English who completed communicative activities with a more advanced ESL interlocutor over a period of 7 weeks. Participants were divided into 4 groups, one which was a control group and only took part in testing. Treatment materials consisted of picture difference tasks, map tasks, and interviews. After completion of activities, participants' performance was analyzed to determine to what extent syntactic priming had occurred. Their results showed that even though participants produced more lower-level questions than advanced, participants produced more advanced questions following the scripted interlocutor's advanced questions. They concluded that participants who evidenced high levels of syntactic priming were likely to advance to a higher stage in the developmental sequence of ESL question formation.

Research on Teaching Materials

My study makes use of quantitative as well as qualitative data in determining the effect of output on learning outcomes. As with Storch (2005, 2007), Hossein & Tian (2010), and Toth (2008), qualitative data give deeper insight to the interpretation of quantitative results. In view of the qualitative component of my study, it is necessary to consider research that has influenced how task design may impact data elicitation. As we recognized in a previous section on collaboration, not all pairs naturally follow a collaborative pattern of interaction. One way researchers have tried to enhance interaction in classrooms is through the use of communication tasks. In the assessment of various types of communication tasks, Pica, Kanagy & Falodun (1993) found interactional relationships in which each person holds a different portion of information, but must achieve the same goal have been effective for promoting comprehension of input, feedback on production, and interlanguage modification. Pica (2005) advocated for the use of information-gap tasks, which allow only one possible outcome and require a verbal exchange among task participants. As she explains, information-gap activities facilitate the necessary conditions for learners to produce the maximum amount of modifications and draw attention to meaning of the information and the form in which it is encoded.

Furthermore, she suggests that information-gap tasks can serve as instructional treatments to generate and then study L2 learning processes and outcomes (p. 342).

Along with information gap tasks, I will use a dictogloss activity (a collaborative task requiring composing and editing a written text in the L2) as they have been used to show that learners can indeed serve as effective assistants to peers in producing, analyzing and correcting L2 structures. Support in favor of such tasks can be found in Swain & Lapkin (1995) who worked with young adult French immersion students to explore whether noticing a problem can push learners into modifying their output. They employed a think-aloud writing task in hopes of gaining insight into the mental processes that lead to modified output. They suggested that the communicative need, engendered by the task, required learners to think about the form of their output (p. 386). Findings of the think-aloud protocols led researchers to suggest that young adult L2 learners do become aware of gaps in their linguistic knowledge as they produce the L2. It is also essential to acknowledge Swain and Lapkin's (2001) study, which suggested that the amount of LREs does not necessarily originate in task design. They compared the effectiveness of the following tasks by analyzing learners' production of LREs: a dictogloss activity, which is used to teach grammar by having learners summarize a target-language text in small groups; and a jigsaw task, which allows pairs to create a written story based on a series of pictures. Their results showed that both tasks generated a similar and substantial amount of LREs. Additionally, there was no significant difference between in the overall degree of the learners' attention to form as reflected in LREs suggesting that the two types of task (a dictogloss and a jigsaw) produced comparable degrees of language gains. Thus, in general, research suggests that communicative tasks appear to offer many opportunities for learners to negotiate and thus interact with target structures. Swain & Lapkin (2001) concluded that the value of the task depends on instructional goals.

In addition to the type of task one implements during output practice, research in SLA suggests that improved accuracy and fluency of target structures is best achieved by repeated creative use of language rules taught in a context of authentic communication (Dekeyser, 2003). The task design must anticipate specific communicative goals to ensure use of the target form. This is especially difficult given the foreign language context when most of the modifications tend to take place in learners' L1. In my study, additional activities created to promote production of the target structure and partner interaction include matching pictures with sentences, and a partner interview where some questions required IOPs while others did not. In sum, all of the activities were chosen due to the practical use they offer in requiring meaningful communication with focus in form.

Summary of Research

Within the theoretical framework of the Interaction Hypothesis, many researchers have faced the challenge of specifying the function of output on L2 grammar development. While some studies have compared input-based instruction to output (VanPatten, 1996, 2000; VanPatten & Caiderno, 1993; Cadeirno, 1995, Farley, 2001), others have aimed to show that output does impact acquisition, and is not just a result thereof (Izumi, 2002; Toth, 2006; Muranoi, 2007; De Jong, 2009; Erlam, 2009). These studies remain essential in suggesting that output does have a function aside from its counterpart, input. Suggestions for further research called for an in-depth qualitative analysis into the process and impact that output practice has on the L2 learners. Toth

(2008), Izumi (2002), and McDonough & Mackey (2008) suggested that further research was needed with more grammatical features and longer periods of time.

Many studies we have reviewed suggest that output facilitates L2 learning. Still, how and why output may facilitate L2 acquisition remains questionable. My study seeks to explore the impact of output and LREs on explicit and implicit knowledge of Spanish IOPs. Although comprehension focuses on perceiving the connection between form and meaning, production may aid interlanguage development by moving the learner from semantic to syntactic processing, ultimately allowing for production in posttests. Therefore, I hypothesize that through output practice, the target structure might be incorporated more readily into the learners' developing system. I expected to see some effects of integrative processing/syntactic priming due to repeated production of IOPs with certain syntactic structures. Based on claims of the interaction hypothesis, production of IOPs may make the forms more salient so that higher frequencies of IOP production could coincide with greater accuracy on activity completion and improvement on posttests. Finally, I hypothesize that negotiation of IOPs, through the analysis of LREs, may coincide with greater learning outcomes on posttests, particularly with learners demonstrating higher levels of subject-verb agreement.

CHAPTER 3

METHODS AND DATA COLLECTION

Previous research on the acquisitional challenges to learning IOPs along with the suggested effectiveness of output in learning were considered carefully when designing this study. The previous chapter commented on how early studies on the role of output have evaluated its effectiveness as compared to input alone. Following this trend, others have sought to examine specific functions of output as detailed in Swain's output hypothesis. The focus of this study is to examine the effect of output practice activities with the understanding that input is obviously involved. Based on the body of research presented in Chapters 1 and 2, this study investigates the assertion that output is an effective facilitator of learning. Therefore, the purpose is to determine how output practice affects development of explicit and implicit knowledge of indirect object pronouns (IOPs) after explicit language instruction.

There are several contributions that this study seeks to make to the current literature on IOPs and the role of output on acquisition. Part of the value of this study in the current debate of output's role in learning comes from the mixed method design. This study has a major qualitative focus, which allows insight into what quantitative data often do not capture. Researchers have called for further investigation on the role of output using a variety of grammatical features (Izumi, 2003; Toth, 2006; Erlam et al., 2009). In reference to IOPs, most studies have worked within the first noun strategy of Van Patten's (1996) processing theory. Even more, within this debate, most evidence supporting the first noun strategy processing is found with accusatives and not datives. There are very few studies that take place over long periods of time (Izumi, 2003;

McDonough, 2006). The longitudinal nature of my study adds to the current body of research in that it tracked progress throughout 10 weeks giving a considerable period of time from initial presentation of IOPs to the final posttest. Another potential contribution this study aims to make is in relating some of the theories of L2 grammar acquisition originally based in a second language-learning environment to foreign language learning. A considerable difference in the scope of this study is that it lies within the context of foreign language learning and not second language learning. Most researchers in the topic of partner work, including LREs, have worked with learners of English as a Second Language (ESL) (Pica, 1987; Storch, 2001; Fortune, 2005; Williams, 1999). One major difference commonly found in ESL learning contexts is learners often only share the L2, which would require all communication to be in the L2. Foreign language contexts require careful task selection in order to promote the use of the target language instead of reverting to their shared L1.

Research Questions

Keeping in mind that the main goal of this study is to investigate the relationship between output practice and explicit and implicit knowledge of indirect object pronouns (IOPs), the initial questions at hand are:

1. Does output practice of indirect object pronouns (IOPs) facilitate development of explicit knowledge of IOPs as assessed by an untimed written picture description task?
2. Does output practice of IOPs facilitate development of implicit knowledge of IOPs as assessed by a timed grammaticality judgment task?

3. To what extent does proficiency level (or accuracy with subject verb agreement) relate to improvement in the use of IOPs as assessed by the untimed written picture description task and the timed grammaticality judgment task?
4. Do language related episodes contribute to L2 development in development of explicit and implicit knowledge of IOPs?

Variables

My study has 2 dependent variables and one independent variable. The two dependent variables are: (1) development of explicit knowledge as operationalized by untimed written picture descriptions tasks and (2) development of implicit knowledge as operationalized by timed grammaticality judgment tasks. As mentioned in the literature review, researchers have not come to a consensus on how to operationalize the constructs explicit and implicit knowledge. Based on the work done by R. Ellis (2005) it was found that certain types of tasks may make use of one type of knowledge (explicit or implicit) more than the other. Therefore, the creation of the untimed picture description task and the timed grammaticality judgment task were primarily based on his criteria (see the section on testing materials for more details on the choice of testing measures).

The independent variable is output practice through the use of a variety of interactive activities. The goal of each activity is to promote oral production of IOPs. The frequency of production of IOPs will be compared to test scores to explore connections between output and development of explicit and implicit knowledge of IOPs. In addition, proficiency levels of each participant are taken into consideration when examining the influence of output on knowledge of the target structure. The proficiency of the participants refers to the background knowledge of present tense subject-verb agreement that participants demonstrate on the picture description task. The participants whose data was analyzed included 4 pairs incorporating different combinations of proficiency.

Methods

Participants

The study was conducted with one intact Elementary Spanish II class that was comprised of 24 native English speakers all who consented to have their results used in this study. Although the entire group of 24 learners were involved in the tasks and testing as part of the coursework, only 8 total participants (4 pairs) were ultimately selected to be involved in the final analysis of results based on the fact that each participant was present for the initial grammar presentation and that they completed all output activities and tests during the treatment period. The participants used the same partner for each activity in all treatment sessions and were required to audio record all their interactions. Each participant selected his or her partner prior to the beginning of this study.

The 8 participants (Table 3.1) were chosen for the final analysis because they met the following requirements: firstly, each participant was present every week since the beginning of the treatment including all testing and the initial presentation; secondly, each participant completed all partner activities; and lastly, no participant scored more than 50% in use of IOPs on the pretest. Each paired activity recording was transcribed and analyzed for each participant, which accounts for the majority of the quantitative and qualitative data. In addition to all activities recorded, each participant took all 6 tests administered to complete the quantitative data. Of the 8 participants ranging in age from 18 to 22, there were a total of 3 males (m) and 5 females (f). In regards to proficiency level (Table 3.2), there were 6 high level learners, 1 mid learner and 1 at low level proficiency (see section on testing measures for scoring procedures).

Table 3.1
Summary of participants

Group #	Participant	Proficiency Level
Group 1	Karen (f)	High
	Mary (f)	High
Group 2	Becky (f)	High
	Suzie (f)	High
Group 3	Ron (m)	Mid
	Sky (f)	High
Group 4	Fred (m)	High
	Doug (m)	Low

Table 3.2
Scores of proficiency test

Participant	Score	Proficiency level
Karen (f)	81.25%	High
Mary (f)	81.25%	High
Becky (f)	100%	High
Suzie (f)	87.5%	High
Ron (m)	62.5%	Mid
Sky (f)	81.25%	High
Fred (m)	87.5%	High
Doug (m)	43.75%	Low

Instructional Procedures

The study was done with one intact Elementary II Spanish class that is a general education class worth 4 credit hours at a large Northeastern public University. This Spanish class has one 50-minute laboratory session per week that accounts for 1 credit of the total 4. The weekly laboratory portion of the course was chosen as the class meeting for implementing the treatment due to opportunities for learners to participate in interactive paired activities that are commonly used during laboratory sessions. I carried out all instruction, including the treatment, and testing for this study as the official instructor for the laboratory portion of this course. The classroom component had a separate instructor with whom I worked to ensure that no work or testing on indirect objects and their pronouns would be included as part of the curriculum. In addition, being responsible for designing and implementing the treatment allowed me to reduce the impact of intervening variables. Lastly, as the researcher/instructor I was able to make qualitative observations that helped me to relate behavior to testing results. Observing activity completion and partner interaction helped me to properly interpret results based on the performances that I witnessed.

The following sections provide an overview of how the instruction was carried out, and what occurred in each session with participants. The entire study was completed in a total of 10 weeks over a span of two months. There were a total of 3 class meetings of audio-recorded output practice following the explicit explanation of the target structure: two 50-minute sessions and one 15-minute session. During the first week of the study consent forms were returned by the participants and the pretest was given. During Week 2 every learner participated in a recording of an information-gap activity, which focused on reflexive verbs. Although the recording of the activity from Week 2 was not used in the study, the purpose was threefold: (1) to allow participants to get acquainted with their partners, (2) to have a trial run with the recorders and (3) to familiarize participants, who had never participated in an information-gap activity, with this type of activity. Since a few of the interactive activities given throughout the treatment were information-gap activities, it was important that all participants be familiar with the procedures of such tasks in order to maximize the opportunity for output. In other words, a learner who may be unfamiliar with information-gap task procedures might not complete the task correctly and could potentially lose opportunities for output production and interaction.

During Week 3 the explicit grammar explanation of IOPs was given to the entire class via a PowerPoint presentation in 10 steps. The initial grammar lesson on the feature was presented with brief explanations and supporting examples that were designed to help the learners' reception and production of indirect object pronouns through a process of assistance with the professor. All steps were conducted with a teacher-led approach in which any learner could volunteer an oral response when the class was prompted; the learners otherwise only listened as I went through the explanation and examples. Appendix A presents the entire explicit explanation with all the examples used.

The explanation began with a review of direct objects and direct object pronouns during which students were given a brief description of direct objects, as recipients of the action of the verb, followed by a few examples. The class was then asked to orally identify direct objects in 5 sentences. Following the identification of direct objects, participants were presented with 2 sample sentences of how direct object pronouns (DOPs) replace the direct object. To complete the review of direct objects, learners were asked to orally replace direct objects with DOPs as a whole-class activity.

Following DOPs, indirect objects were introduced as the recipient of the direct object with verbs of communication and the transfer of goods with the following example: *Le voy a comprar una camisa a mi hermana* (I'm going to buy a shirt for my sister). Learners were presented with 5 sample sentences in which they were asked to orally identify the subject, verb, direct object, indirect object and IOP. The first 2 sentences were color coded to assist learners in identification of different parts of speech as in the following example: *Los señores Rodríguez les dan muchos dulces a los niños el día de la brujas* (Mr. and Mrs. Rodriguez give a lot of candy to children on Halloween). In this step no translations were given; only identification of grammatical units was encouraged. With regard to the examples learners received containing IOPs, learners were presented sentences with verbs of communication (Example 3.1) separately from verbs of transfer (Example 3.2):

Example 3.1 *Los estudiantes le hacen muchas preguntas a la profesora*.
Students ask the questions to the professor.

Example 3.2 Yo *les doy muchos regalos a mis amigos el día de Navidad*.
I give a lot of gifts to my friends for Christmas.

A comparison of IOPs and direct object pronouns was then presented with an explanation of optional vs. obligatory use. It was explained that the IOP must be present whereas the indirect object noun phrase was optional, but highly recommended for ambiguous IOPs such as the third-person pronouns *le* and *les*. During the last steps in the series on IOPs, all the indirect object pronouns were shown organized by person and number. The IOP '*os*' (corresponding with the indirect object *vosotros*) was excluded, as it is regionally specific to Spain and the alternative use of '*les*' for *ustedes* spans all of Latin America. The final step included 3 questions including IOPs and matching responses as in Example 3.3. Immediately following the explicit explanation leading to the use of IOPs, the first audio-recorded paired activity was given as a comprehension-based activity in which learners matched sentences containing IOPs with the correct picture.

Example 3.3 *¿Te hace muchas preguntas la profesora (a ti)?*

Does the professor ask you a lot of questions?

Sí, la profesora me hace (a mí) muchas preguntas.

Yes, the professor asks me a lot of questions.

The remaining paired output practice activities that offered multiple opportunities to produce IOPs were completed during Weeks 4 and 5. During these weeks learners were required to complete a total of 5 activities divided into 2 sessions of 50 minutes each. In Week 6, the posttest was administered to all participants. No work was completed with IOPs during weeks 7, 8 and 9 to allow for an extended period of time prior to the delayed posttest. Finally, the delayed posttest was administered during Week 10. Table 3.3 summarizes the goal of each laboratory session and the type of testing and/or activities performed by week.

Table 3.3
Summary of testing and treatment by weeks

Week	Goal	Type of test and/or activity
Week 1	Pretest administered	Pre-testing
Week 2	Trial recording of reflexive pronouns	Trial Info gap activity
Week 3	Explicit explanation of IOPs Audio recording of paired interaction	Teacher-led (TL) discussion with whole class practice 1a- Matching game
Week 4	Audio recording of paired interaction	2a- Interview 2b- Info gap: *¿Qué haces?*
Week 5	Audio recording of paired interaction	3a- Info gap: *¿Qué le va a comprar?* 3b- Original sentences 3c- Story reconstruction
Week 6	Immediate posttest	Posttest
Weeks 7-9	Activities on vocabulary and other grammar topics	N/A
Week 10	Delayed posttest	Delayed posttest

Materials

Table 3.4
Sequence of activities

Day of treatment	Activity	Spoken	Spoken & Written	Prepared IOP	Prepared & free IOP	Free IOP
1	1a Matching	X		X		
2	2a *¿Qué haces?*		X	X		
	2b Interview	X			X	
3	3a *¿Qué le va a comprar?*	X				X
	3b Individual Sentences	X				X
	3c Story Reconstuction		X			X
Totals	6	4	2	2	1	3

There were a total of 6 output practice activities spread out over three class meetings that constituted the instructional treatment. Table 3.4 summarizes all the tasks participants completed prior to taking the post and delayed posttests. The principal factor taken into consideration in the creation of each activity was preparing the learner to go from more receptive to more productive knowledge. In other words, the activities varied in the amount of control the participant exercised over production ranging from controlled to semi-controlled and then to open-ended responses. There were 2 controlled activities, 1a and 2a (Table 3.4), which required participants to read a sentence with a prepared IOP, meaning all IOPs were provided in the activity. There was one semi-controlled activity, 2b (the interview), which contained prepared use and free use of IOPs. The interviewer's responses containing IOPs were prepared since he/she only read sentences containing IOPs. On the other hand, the interviewee's responses were termed free use of IOPs because each interviewee had to create the entire sentence, which included the correct form of the IOP that pertained to the question he/she was asked. Lastly, there were three open-ended activities: 3a, 3b and 3c. The open-ended activities required students to produce an IOP freely based on context, meaning that IOPs were not provided (e.g. original sentence creations).

All activities were ordered in such a way to lead the participants' use of IOPs from more controlled to more open-ended contexts. The more controlled activities focused on comprehension, while the open-ended activities allowed participants to practice oral and written production of IOPs. Compared to the controlled activities, the open-ended activities were more syntactically challenging because in the context they were given, participants were required to have proper placement and form of the IOP along with the correct verb form. Therefore, these sentences carried a heavy cognitive load for the learner. The design of each activity in its sequence was hypothesized to guide participants from receptive knowledge to productive knowledge of IOPs. In addition to oral production, some activities involved writing to provide accountability for completion.

The first activity (1a) was presented during the first class meeting of treatment immediately after the explicit explanation of IOPs was given. This task, referred to as a matching game (see Appendix B), included 16 cards: 8 cards with one sentence each including an IOP and 8 cards with one picture depicting a scene that matched one of the sentence cards. Each pair began with the cards face down and collaboratively selected two cards at a time until a match was found. Once a match was found, they removed the cards from the pile. They repeated the steps until all 8 matches were complete. The rationale behind the repetition of the cards was to have the students either orally or mentally repeat the sentences with IOPs to make and strengthen form-meaning connections. The objective was to assist in the proper interpretation of IOPs to offset typical learning errors when acquiring IOPs. This task was untimed; all participants completed the task in less than 10 minutes. All the sentences were designed in the same order of: IOP, verb, direct object and the indirect object. Figure 3.1 presents a sample match of cards with one corresponding sentence and picture. The following figure shows the inclusion of the indirect object was important in contrasting sentences such as, "*Le da un regalo a su hija"* (She gives a gift to her daughter) with "*Le da un regalo a su hijo*" (He gives a gift to his son), so that learners could have examples showing that *le* did not vary with masculine of feminine indirect object phrases.

Le da un regalo a su hija.	

Figure 3.1 Matching game card

In the second week of treatment, the groups completed two activities: one information gap activity matching questions with logical answers and an interview, both containing multiple sentences with IOPs. The first activity of Week 2 (2a), referred to as "*¿Qué haces...?*" (see Appendix C), required participants to ask each other predetermined hypothetical questions about what his/her partner would do given a specific situation. Each participant was given 2 handouts that were different from his/her partner's: one handout contained 7 hypothetical questions as in Example 3.4 and the other included 7 responses matching his/her partner's questions as in Example 3.5:

Example 3.4 *¿Qué le dices al mesero si encuentras a una mosca en tu sopa?*

What do you say to the waiter if you find a fly in your soup?

Example 3.5 *Le digo que no puedo comerla y que necesito otra.*

I tell the waiter I cannot eat it and need another one.

Partner A started by asking his/her partner one of the 7 questions while partner B selected a possible answer from his/her own sheet. When partner B found the matching response, he/she read the response to partner A. Partner A was required to write down the response on his/her own sheet. For example, if partner A asked "*¿Qué le dices a tu amigo si no te visita por un año?*"(What do you say to your friend if he/she does not visit you for a year?); partner B searched his/her list, which had 7 responses provided (one for each question) to find "*Le pregunto por qué no me visita*" (I ask his/her why he/she does not visit me). Once partner B read this statement to partner A, partner A wrote down the response under the original question. Each partner was instructed to ask and answer 7 different questions. This activity incorporated the prepared use of IOPs when a participant read a question and when they responded orally.

Immediately following Activity 2a, "*¿Qué haces...?",* each group participated in a partner interview, Activity 2b, (see Appendix D) that was based on the topic "actions in the classroom" from Chapter 5 in the students' textbook Dos Mundos, where the topic of IOPs is presented. The interview contained 13 questions, 5 of which contained IOPs with verbs of communication or transfer. A sample sentence from the interview activity that included an IOP is as follows: *¿A quién le haces preguntas cuando no comprendes la gramática*? (Who do you ask when you do not understand the grammar?) Learners were instructed to answer in complete sentences so that they would include the IOP in their responses. This semi-controlled activity, which included prepared use and free use of IOPs, provided opportunities for meaningful repetition. Participants were instructed to perform the interview twice so that each learner would play the role of interviewer and interviewee. The interview activity was selected from learners' textbook for 2 main reasons: (1) so that participants would view participation in the study as part of their Spanish course; (2) to assist focus on the target structure instead of a lexical focus since the vocabulary had been presented in previous textbook chapters.

In Week 3 of the treatment, participants completed a total of 3 activities. The first activity (3a), *¿Qué le va a comprar?* (see Appendix E), was an information gap activity used to elicit free IOPs in oral production. Each pair had to communicate with one another to find out what certain people were going to buy for others on different occasions. To complete this activity each partner was given a different chart with 4 categories corresponding to (1) the person who was going to purchase (this information was given to both participants); (2) the item to be purchased; (3) for whom; and (4) the event in which the exchange would occur. The activity required partners to communicate with each other by formulating and answering questions to complete all the missing information in each of their charts. As Figure 3.2 shows, of the 4 categories of information that each participant was given, a possibility of one answer from each category was missing. Each learner's chart had a different category of information missing. If partner A was missing a category of information, he/she would ask partner B who had that entire line of information in his/her chart. In all, there were 7 questions to be formulated and answered.

Persona que va a comprar	A quién	Qué	Cuándo
Carmen		una bicicleta	para su cumpleaños
Roberto	a Carmen	un vestido	para la navidad
Mayin y Pedro	a Luis	un televisor	

Figure 3.2 Sample chart from Activity 3a*: ¿Qué le va a comprar?*

To find out to whom the gift is for (*a quién*) ask:	*¿A quién le va a comprar...?*
To find out what the person is going to buy (*qué*) ask:	*¿Qué le va a comprar...?*

Figure 3.3 Model questions from *¿Qué le va a comprar?*

In order to assist each participant in requesting the missing information, they were provided with the following models from Figure 3.3. To complete the activity, partner A would start by asking partner B one question based on what he/she was missing and partner B would look for that information on the chart and repeat the answer with a complete sentence. The activity required each participant to ask at least 4 questions until they obtained all the information needed. Participants were all given the following sentences as a model of how to complete the activities:

Estudiante 1- ¿**A quién** le va a comprar Carmen una bicicleta para su cumpleaños?

Estudiante 2- Carmen le va a comprar una bicicleta **a Ernestito** para su cumpleaños.

The second activity during Week 3, original sentence creations, Activity 3b (see Appendix F), was designed as part II of the *¿Qué le va a comparar?* activity. The goal of this activity was for participants to create sentences similar to the ones from the information gap tasks by choosing a phrase from categories provided containing (1) an indirect object that indicated for whom the item will be purchased; (2) a direct object that indicated what will be purchased; and (3) a prepositional phrase that indicated for what special occasion the item will be purchased. Participants were instructed to create 6 sentences and only tell their partner what they planned to buy and for whom based on the following model that was provided for each participant: <u>A mi amiga</u> le voy a comprar **un suéter** *para la navidad*[5] (I'm going to buy a sweater for Christmas for my friend). The model sentence included phrases with different visual emphasis (underline, bold and italic) to correspond with each category of choices. The goal was to have learners produce at least 6 sentences with the phrase "… *le(s) voy a comprar*…" (I'm going to buy him/her/them…) with varying objects and indirect objects. Besides the phrase they were given, each participant was instructed to select one phrase from each of the following 3 categories as shown in Figure 3.4. Although the categories remained the same for both partners, each partner was given different vocabulary in each category.

[5] The emphasis is from the original activity.

They also had the option to form a sentence following the model by using original vocabulary in their final sentence.

A quién	Qué	Cuándo
A mi amigo/a	Unos calcetines	Para su aniversario
A mis profesor/a favorito/a	Un suéter	Para su cumpleaños

Figure 3.4 Categories from original sentences activity

The last activity of Week 3, 3c, (see Appendix G) was a dictogloss activity[6] with 2 brief narrations. Each narration contained 5 sentences and a total of 4 IOPs. Since each narration contained 4 IOPS, the goal was to find out if learners were able to recall the IOPs. The collaborative design was made to encourage interaction, which could potentially produce language related episodes as learners negotiated the proper use of IOPs. In this activity, participants had 5 minutes to read each narration together with their partner. After pairs read over one narration for the allotted time, each pair was given a blank sheet of paper and was instructed to write the narration as close to the original as possible. The writing portion was not timed. Once each pair completed the first narration, they repeated the same steps with the second narration.

The first narration was about what María planned to buy members of her family for Christmas. The IOPs in the first narration were all used with the phrase "*va a comprar*" either placed pre or post verbal. In the first narration the following direct objects were tangible items: *muchas cosas* (many things), *unas blusas* (some shirts), *una camisa* (a shirt), and *un suéter* (a sweater). The second narration was about typical communication patterns between Maribel and Juan. The IOPs in the second narration

[6] A collaborative reconstruction of a target-language text.

were all placed before the inflected verb with the following verbs of communication: *le hace praguntas* (ask him/her questions), *le responde* (respond to him/her), *le manda* (send him/her) and *le contesta* (answer him/her). This division of use with IOPs presented in this narration coincides with the explicit explanation given to learners prior to any activity completion. This distinction was made to assist learners in identifying IOPs with an intangible and therefore often less salient direct object.

Data Gathering

Tests

Testing was administered in three phases in which pre, post and delayed posttests were given to all participants (see Table 3.3 for a summary of testing by weeks). The testing was used to determine learning outcomes for the development of explicit and implicit knowledge. The pretest (given prior to the lesson) also served to eliminate participants whose results exceeded the expected level of prior knowledge for the study. The elimination score was determined to be above 50% for use of IOPs that included: correct placement, person, case and number.

During each phase of testing there were 2 types of tests administered: an untimed picture-description task used primarily to test development of explicit knowledge and a timed grammaticality judgment task used primarily to test develpment of implicit knowledge (see Appendices H-N). Each type of test was administered during each testing session, which occurred at 3 different times during treatment (pre, post and delayed posttest). This meant that each participant took a total of 6 tests. In order to prevent test learning affects, each set of tests had 3 versions: A, B and C. The 3 versions were randomly distributed for the pretest, and then rotated for each posttest, so that each learner took every version: either as a pretest, posttest or delayed posttest.

The tests were chosen as assessments of implicit and explicit knowledge based on R. Ellis's (2005) study on measuring implicit and explicit knowledge. Ellis hypothesized explicit testing measures as encouraging the use of a rule, whereas implicit would favor an overall feel. Two key characteristics of testing measures based on R. Ellis's hypothesis is that implicit tests would elicit more systematic learner responses, and that responses would be more limited to indicating choices such as grammatical or ungrammatical. Time pressure tests would potentially require learners to rely on their implicit knowledge, whereas tests without time constraints could permit learners to draw on their explicit as well as implicit knowledge. It is recognized that there are difficulties in using such measures to form generalizations about implicit and explicit knowledge due to the fact that there is no guarantee that a learner will solely rely on one type of knowledge over the other. Still, based on the model set forth by Ellis (2005), the untimed written picture description task and the timed grammaticality judgment task are suggested to assess different skills. Therefore, through a factor of analysis, the untimed written picture description task draws more on explicit knowledge while the timed grammaticality judgment task draws more on implicit knowledge.

Due to its detailed focus on a small number of learners, the scope of this study does not allow for generalizations to be made to a larger population. Rather, having elements of a case study, testing results will be considered a window into the topic of output and what it suggests about the learning that may be achieved. R. Ellis (1990) suggests that formal instruction mainly works by developing explicit knowledge of grammatical features, which then helps learners to acquire implicit knowledge. Accordingly, I hypothesized that the explicit explanations given at the beginning of the treatment would be a potential starting point for the developement of explicit knowledge, which would increase with output practice. Although I plan to investigate whether output activities can help develop learner knowledge of IOPs, Fotos and Ellis (1991) stated, "there is no clear evidence that suggests the production of sentences that model the target structure results in acquisition as implicit knowledge" (p. 607). They continue to claim that little evidence of spontaneous use has been found following formal instruction regarding developmental grammatical structures. In this context, "developmental structures" refers to those that are acquired in stages and involve the learner passing through transitional phases before mastering the structure (p. 607). As we discussed in Chapter 1, object pronouns are syntactically deep structures that have much variability in the features they mark such as case, person, gender and number. Therefore, in consideration of the complex nature of IOPs and claims set forth by Fotos and Ellis (1991), anticipated results for the development of implicit knowledge may be lower than the development of explicit knowledge since the former may require extensive opportunities of output often beyond the boundaries of formal instruction followed by output practice in a classroom experiment. If instruction more readily results in explicit knowledge, then scores should be higher on the picture description task. In order to show an impact for output based instruction on both implicit and explicit knowledge, there must be at least modest gains shown on the scores of both tasks after instruction and practice.

Untimed written picture description task (PDT)

The untimed picture description task used to evaluate explicit knowledge in pre, post and delayed posttests consisted of 16 pictures: 8 distracter items along with 8 sentences that could elicit an IOP. Each picture included the infinitive form of the verb to be used by the participant plus a direct object or a prepositional phrase needed to complete the sentence. The pictures that could elicit an IOP, were selected to parallel the explicit explanation during initial instruction, where the indirect object was presented as the recipient of a direct object. All the verb conjugations that participants had to complete were originally presented in the previous semester's course (Elementary I) or from the previous chapter studied in this Elementary Spanish II course. Directions stated that each participant had an unlimited amount of time to write a complete sentence using the vocabulary provided along with any other parts needed to complete the sentence. Figure 3.5 demonstrates a picture and a prompt designed to elicit an IOP. The targeted response would resemble the following sentence with optional elements in parenthesis. *(Él) le da flores (a ella)* (He gives her flowers).

Dar / flores

Figure 3.5 Picture and prompt from untimed written picture description task

Timed grammaticality judgment task (GJT)

In this test, participants were given 30 sentences in which they had 5 seconds to determine whether a sentence was: correct (C), incorrect (I), or not sure (N) by marking these abbreviations on a sheet with 30 numbered blanks. Each test came in the form of a PowerPoint presentation with 30 slides containing one sentence each: 9 sentences with a correctly used IOPs, 9 sentences with an error found in the use of an IOP and 12 distracter items (6 grammatically correct and 6 incorrect). The errors present in the grammatically incorrect sentences centered upon 2 types of errors: omission of the IOP or incorrect person or number agreement for the IOP (see Figure 3.6).

Correct sentence:	*La profesora nos da mucha tarea a nosotros.*
	The professor gives us (to us) a lot of homework.
Omitted IOP:	E*l chico pregunta a Ud. si quiere salir a comer.*
	The boy asks you if you want to go to eat.
Incorrect agreement in number:	*Los estudiantes les dicen, "no sé" a la profesora.*
	Students say to them, "I don't know" to the

Figure 3.6 Sample sentences from the timed grammaticality judgment task

The 5-seconds time allotted for the participant to read each sentence and determine if the sentence was grammatical was chosen based on a pilot test where a group of 24 students in the same level of Spanish at the same university were asked to mark the level of difficulty at differing time intervals (5, 6, 7, 8, 9 and 10 seconds). Students were asked to rate the time on a scale of (1) overwhelming, (2) difficult, (3) doable, (4) fairly easy, and (5) easy. The 5-seconds interval was chosen as appropriate for the task as it was rated most consistently as difficult, but not overwhelming.

Scoring of Tests

Untimed written picture description task (PDT)

The untimed picture description task was used for two purposes: as the pre, post and delayed posttest for assessing explicit knowledge of IOPs and as the proficiency test to determine learners' background knowledge of subject-verb agreement as a related issue. All 16 pictures were used to operationalize the proficiency variable based on each learner's ability to correctly conjugate each verb. As pre, post and delayed posttests, scoring procedures for the untimed picture description task were based solely on a participant's use of IOPs in 8 out of 16 pictures that were intended to elicit IOPs. If a participant properly incorporated the IOP, there was a possibility of earning up to 4 points determined as follows: (1) correct placement, (2) person, (3) number and (4) case. Therefore, the pretest and both posttests allowed a maximum of 32 points (4 points for each picture multiplied by 8 pictures that were designed to elicit an IOP). Each participant's score was added and divided by 32.

The criteria for evaluating background grammatical knowledge on subject-verb agreement were based on the fact that both IOPs and agreement affixes require representation of person and number that are attached to the verb. Therefore, it follows that if a participant can manage attaching person-number features to the verb for subject-verb agreement, he or she may also be more prepared to do something similar with IOP clitics than someone who is still struggling with subject-verb agreement. This study seeks to make claims for levels of development with IOPs at differing proficiency levels in order to suggest whether representing person and number accurately for subjects could be a prerequisite for representing it with datives.

Scoring for background knowledge of subject-verb agreement was based on all 16 pictures. The proficiency test was given in order to place a participant in one of the following proficiency categories: high, mid or low. Each participant was judged on a 1-point scale per picture: one point was given for correct verb conjugation for a maximum of 16 points. Each individual score was added up, divided by 16 and then rounded to the nearest tenth. Based on the percentage, each participant was placed in one of the following categories: high (100%-80%), mid (79%-60%) and low (59 % or lower). Each category was set at 20% intervals with the lowest ranging from 59% to 0%. Figure 3.7 represents a prompt and picture from the proficiency test. The targeted response would resemble the following sentence with the optional subject pronoun in parenthesis: *(Ellas) bailan en la discoteca* (They dance in the discotheque).

Ellas / bailar en la discoteca

Figure 3.7 Prompt from untimed picture description task

Timed grammaticality judgment task (GJT)

Scoring for grammaticality judgment tasks was based solely on the 18 sentences relating to the use of IOPs, which participants were required to identify as correct, incorrect or not sure. One point was given for the identification of a grammatically correct sentence as correct and one point was given for identifying an ungrammatical sentence as incorrect. No point was given for the response “not sure”. More specifically, the number of sentences for which a student selected “not sure” was subtracted from the total number of 18. In the end, each score was based on the number of points a participant received divided by the number of times each participant indicated a response correct or incorrect. Inferential statistics were not used because group results will not be used to draw generalizations of the population. In sum, for each participant (N=8) the data collected comprised of: 3 sets of 2 tests (timed grammaticality judgment tasks and untimed picture descriptions tasks).

Classroom Recordings

Due to the mixed-method approach of this study, quantitative and qualitative data were gathered for analysis of individual and group performance and its connection to learning outcomes; all data collected in the practice sessions were used as a window into understanding the effects of output on learning the target feature. Besides the series of testing, all 6 paired output activities were used as the basis of data collection in this study. Once all of the recordings of classroom activities were transcribed, the data was analyzed qualitatively and quantitatively as described in the sections below.

Quantitative Data

The quantitative data is comprised of tables that detail each participant’s percentage of correct use of IOPs within each activity. Each table details correct production or non-production of a correct form to find each participant’s percentage for the number of IOPs used correctly by the total number of opportunities. The average of each participant’s percentage of correct use per activity is presented in Table 4.12, which will be used as part of the final analysis in Chapter 5 to suggest whether correct oral production of IOPs impacts explicit and/or implicit knowledge of IOPs. Research suggests that oral production may move learners from receptive to productive knowledge (Izumi, 2003). In addition, proficiency levels may suggest a threshold of background grammar knowledge in order for learners to move from receptive to productive levels of learning. As Pienemann's (1998) processability theory states, although some syntactically deep structural options may be possible, the language learner will only produce them if the necessary processing procedures are available that are needed to carry out proper use of the structure. Therefore, in order to determine if output affects learning of IOPs, non-production of a correct form includes IOPs produced incorrectly in form and IOPs omitted with a verb of transfer or communication (see data coding of quantitative data for more details).

Secondly, quantitative data is represented by a table of frequency of tokens of IOPs produced per participant, whether correct or incorrect, in all recordings. The purpose for determining frequency of IOPs per participant during all activities was to test whether greater instances of IOP production lead to stronger learning outcomes of IOPs. A token was coded as any production of an IOP whether it was by reading an IOP, responding with an IOP, questioning the use of an IOP or commenting on the grammaticality of an IOP. Overall, IOP tokens varied greatly with each participant due to some groups interacting in extended dialogue pertaining to the use or form of an IOP. Following the table representing frequency of IOP tokens, a second table containing frequency of IOPs ordered from highest to lowest was created to classify each participant as having either high or low levels of frequency. In response to Research Questions 1 and

2, hypothesized results for quantitative data should show a positive relationship between higher frequencies of IOPs and higher test scores for explicit knowledge in particular.

Qualitative Data

In order to gain a deeper insight into what makes output an effective tool for learning IOPs, qualitative data were used to support findings as to *how* output may lead to greater learning for IOPs. The qualitative data, which originates from the transcripts of recorded pair work, consists of a detailed analysis of all LREs pertaining to form and/or use of an IOP for each group. Since the effects of output on explicit and implicit learning would primarily be assessed through the learner's production of IOP tokens, it was imperative to classify each group of learners' interactions over IOPs in order to provide possible explanations as to whether LREs can promote learning of IOPs. As noted in Chapter 2, LREs were defined as 'any part of a dialogue in which students talk about the language they are producing, question their own language use, or other- or self- correct' Swain (1998, p. 70). Thus, all LREs regarding IOPs were identified as any instance in which a learner corrected his/her own production of an IOP, corrected his/her partner's use or omission of an IOP and questioned or commented on the correctness of the use or form of an IOP.

Research Question 4 inquired whether language related episodes (LREs) contribute to development of explicit and implicit knowledge of IOPs. In order to address this question, LREs will be analyzed to consider the following in the discussion chapter: (1) Does a greater number of LREs lead to stronger learning outcomes? (2) Does interaction with a LRE lead to stronger learning outcomes? In order to determine if greater numbers of interactive LREs would correspond with higher scores on the IOP assessments, a comparison of LREs referencing the target structure with immediate posttest scores was included to consider the relationship between the two. Posttests results were included to make a general comparison of test scores in relation to LREs. These results will be used in the discussion chapter to further analyze if the response to the as interactive or non-interactive corresponds to higher test scores. I hoped to find a connection between interactions with LREs and higher test scores, especially with the development of explicit knowledge.

Data Coding

Coding of Quantitative Data

The tables that present quantitative data detail several factors in the use of IOPs. All of the IOPs pertaining to each production activity were counted and coded as correct, incorrect or omitted based on the context. IOPs produced incorrectly and those omitted were joined together to form the category "non-production of a correct form". The distinction between correct or non-production of correct forms of IOPs was chosen to determine if learning of IOPs is influenced by accuracy, or if frequency of use seems to lead to stronger learning outcomes regardless of errors in production or omission. An incorrect IOP was most often in the agreement of number (Example 3.6). Instead of "*le*" the participant should have produced "*les*" to agree with the indirect object "*a Mayin y a Pedro*".

Example 3.6 *¿Cuándo le va a comprar Luis a Mayin y a Pedro entradas a un drama?

When is Luis going to buy tickets to a play for Mayin and Pedro?

In a few instances IOPs were identified as incorrect in case as in Example 3.7. This participant should have produced "*le*" instead of "*la*". It is important to note that the correct case of IOPs in this study is based on the Latin-American case-based system described in the textbook, rather than *leismo* or *laismo* in Spain and some parts of the Americas.

Example 3.7 *¿*La muestra su pasaporte?*

*He/she shows it her passport.

Each activity was designed to have a certain number of opportunities for learners to produce IOPs. Although this meant an expected minimum of IOPs that learners would produce, there could have been more productions of IOPs if learners repeated answers or questioned the use or form of an IOP during any given activity. The term "open-ended" for several activities did not refer to activities whose design allowed for an unlimited amount of opportunities to use IOPs, but rather to the fact that there were no verbal prompts provided. In other words, task instructions made it necessary for learners to produce the entire sentence during open-ended activities. The rationale for using tightly controlled activities was to promote focus and production of the target structure. Studies show that learners often focus on lexical aspects or other grammatical aspects of the target language when working on student centered tasks (Toth, 2008). In order to test whether higher frequency of IOPs leads to greater learning outcomes, each activity was designed to elicit as many opportunities as possible to produce the target structure.

Omission of an IOP was defined as the absence of an IOP where the context of the activity allowed for its use because it contained the verb phrase. Because IOPs, defined as clitics, coexist with a verb of transfer or communication, omission of an IOP was recorded only when the learner omitted an IOP with a verb of communication or transfer. In other words, it would not be accurate to state the participant omitted an IOP where the learner also did not include the verb. Example 3.8 presents an excerpt in which a participant omitted an IOP with the verb of communication "*digo*" (I say/tell). This example comes from Activity 2b "*¿Qué haces?*" where learners read prepared answers that matched the question their partners asked. This was considered an omitted IOP because this learner was instructed to respond with "*Le digo que no puedo comerla*" (I say that I cannot eat it to him/her), but only stated, "*Digo que no puedo comerla*" (I say that I cannot eat it).

Example 3.8 B: *¿Qué le dices a tu pareja...*

What do you say to your partner…

S: *Digo que no puedo comerla...*

I say that I cannot eat it.

Example 3.9 presents an excerpt in which an IOP was omitted without a verb of transfer where it could have been used. Many participants did not include complete sentences in varying activities although directions required their use. Although the learner in Example 3.8 did not use an IOP in her response, this example represents a case where the omission of the IOP did not count against the learner as non-production of a correct IOP because no verb was included.

Example 3.9 K: *¿Te hace muchas preguntas la profesora?*

Does the professor ask you a lot of questions?

M: *Sí.*

Yes.

To finalize the percentage of IOPs used correctly, first, the number of IOPs used correctly was added to the column corresponding to non-production of a correct form to create a third column, total opportunities to use IOPs. Second, the number of IOPs used correctly was divided by the total number of opportunities to use of IOPs to equal the percentage of correct use. For example, if a participant produced 4 IOPs, but missed 1 IOP with a sentence included, this participant would have 4/5=80% in total use of IOPs.

Apart from the tables representing correct use of IOPs per activity, each participant received a frequency count of tokens of oral production of IOPs, termed frequency. This frequency of tokens was based on the number of times an IOP was produced orally throughout all recordings. Once each participant received a raw frequency count, they were grouped as having high or low frequency. The range of the set of frequencies for all participants was used as a mid point to differentiate high vs. low frequency. The classifications of high or low frequency were compared to test scores to determine if more tokens of IOPs lead to stronger learning outcomes.

Test results were included in a bar graph to show each participant's performance on pre, post and delayed posttest. Once the tests were presented, the scores were analyzed to determine if there was improvement or no improvement. Improvement on the picture description task (PDT) was based on any increase from pretest to any posttest. No improvement on the picture description task meant immediate and delayed posttest scores of 0%. In the same way, improvement on the grammaticality judgment task (GJT) was determined by any increase from pretest to immediate or delayed posttest. Since results of the grammaticality judgment task were much more varied, in a few cases the scores for many participants were described as showing modest gains.

Coding of Qualitative Data

The qualitative analysis centered on language related episodes (LREs) regarding the target structure that arose during pair interaction. All LREs were identified and categorized to analyze how they contributed to L2 development of IOPs. Once all LREs were identified, each LRE was coded for: (1) who initiated the LRE; and (2) the type of LRE produced; and (3) the kind of response the partner gave, as will be described below. Types of LREs were not predetermined; however, only 3 types emerged throughout all interaction. Firstly, LREs of self-correction were identified given any instance in which a learner corrected his/her own production of an IOP. Example 3.10 presents an example of self-correction in which Karen rephrased her sentence to include the IOP.

Example 3.10 M: *¿Qué le va a comprar Roberto para su cumpleaños?*

What is Robert going to buy him/her for his/her birthday?

K: *Roberto comprar un vestido….no le comprar un vestido a Carmen para la navidad.*

Robert is going to buy a dress…no to buy her a dress for Carmen for Christmas.

Secondly, LREs of other-correction were identified as an episode when a learner corrected his/her partner on the use or form of an IOP. Example 3.11 presents an example of an other-correction. During the story reconstruction, Sky corrected Ron (Line 5) to note that he omitted the IOP "*le*".

Example 3.11

1- Sk: *Pero por la navidad ela*... was it...

But for [incorrect preposition] Christmas she [incorrect pronunciation]…

2- R: *voy a...*

I'm going to…

3- Sk: *voy a la...*

I'm going to the…

4- R: *va a*

She is going to

5- Sk: *No...le va a...le va a comprar muchos cosas*

No…for him/her she ig going to….for him/her she is going to buy many things.

6- R: *para* her...how do you say her?

Lastly, LREs of metatalk occurred where the use or form of the target structure was questioned and/or discussed. Example 3.12 presents an example of metatalk, in which Becky produced different forms of the IOP in Lines 1, 5 and 7, to recall a particular sentence from the narration referencing what María plans to buy her family for Christmas. Becky finally concluded "*les*" was needed to agree with the phrase "for them" (Line 11).

Example 3.12

1- B: Yeah. *A su familia…le va*

for her family…is going to

2- S: *a comprar*

to buy

3- B: *una blusa para...a...para su madre* um

a blouse for…to….for…her mother

4- S: *las camisas para las hermanas*... wait *va a comprar*...

the shirts for the sisters… going to buy…

5- B: *Les va no no*... it was just *unas camisas*

buy for them no no… some shirts

6- S: but isn't *hermanas*?

sisters?

7- B: *unas camisas...les*...How was the sentence?

Some shirts…for them…

8- S: I think it repeated it.

9- B: *Las camisas para...*

the shirts for…

10- S: *le va a comprar...*

she is going to buy him/her…

11- B: *les va*...for them

for them is going…

12- S: *Camisas para las hermanas*

Each LRE was categorized as either interactive or non-interactive. LREs were regarded as interactive where a learner discussed the use or form of the IOP; also, episodes where a learner repeated and/or incorporated a correction made by his/her partner were interactive. Example 3.13 shows an interactive response from Suzie in which she was able to incorporate her partner's correction (Line 2) into her production (Line 5). In this excerpt Suzie asked for clarification (Line 3) of her partner's correction.

Example 3.13

1- S: *¿Qué la persona que va....hold on so*

What the person is going to…

2- B: *¿Qué le va a comprar...*?

What is he/she going to buy him/her…?

3- S: *¿Qué*?

What?

4- B: *¿Qué le va a comprar...*?

What is he/she going to buy him/her…?

5- S: Ok. So *¿Qué le va a comprar Roberto*?

What is Roberto going to buy him/her?

A non-interactive response was where the partner, who did not initiate the LRE, did not comment in reference to a correction or question about the use or form of an IOP (Storch, 2001). Example 3.14 is an excerpt from Activity 3a "*¿Qué le va a comprar?*" where each participant had to create a sentence to state what he or she plans to purchase for a friend. This was the final statement made in the activity. It is an example of a non-interactive LRE since there was no interaction from Karen's partner, Mary, even though Karen seemed to question the form of the IOP as either "*le*" or "*te*" and incorrectly finished her statement with "*te*".

Example 3.14 K: *A mi amiga yo le va a…te va a mi amiga una bicicleta para su cumpleaños.*

For my friend I'm going to buy her a…I'm going to buy you a bicycle for your birthday.

Summary of Statement of Purpose

The primary goal of this study is to understand how output facilitates learning outcomes of the target structure. All six paired activities were designed to assist learners in moving from a receptive to productive knowledge of IOPs. The series of activities moved from controlled, semi-controlled and finally to open-ended activities. The goal of each activity was to have participants produce the target structure in an interactive classroom setting to allow for repeated opportunities to produce the target structure and allow possible negotiation of the target structure. All activities were transcribed and became the source of data for quantitative and qualitative analysis. All data will be analyzed in light of test scores to propose how output effects development of IOPs.

In Chapter 4, we will see how the primary variables of focus in this study will be presented and then compared to test scores to suggest contributors in development of explicit and implicit knowledge. First, quantitative data including frequency of IOPs tokens and correct use of IOPs will be compared to test scores in response to Research Questions 1 and 2, which inquires whether output is a facilitator of explicit and/or implicit knowledge.

The second variable, background knowledge of subject-verb agreement, referred to as proficiency, will be used to answer Research Question 3 regarding what level of improvement was evident at varying proficiency levels. As a general comparison, each participant's test scores were compared to his/her proficiency level to consider whether stronger learning outcomes occurred at higher proficiency levels. Research Question 3 explores the possibility that a certain threshold of background grammar information may be required in order to improve in development of explicit and/or implicit knowledge of IOPs.

Since this study intends to show *how* output is a critical element of language learning, qualitative data allow for a closer evaluation through finer grained analysis. The third central variable, used to answer Research Question 4, is the analysis of LREs and how they seem to contribute to L2 development of explicit and/or implicit knowledge of IOPs. So then in Chapter 4, the number and response of LREs produced in interactions will be compared to test scores to assess if LREs contribute to greater learning outcomes.

CHAPTER 4

RESULTS

The results are divided into two main sections, quantitative and qualitative data, in order to examine both individual and group-related factors in output's effect on knowledge of IOPs. In response to Research Question 1 and 2, quantitative results are used primarily to determine the effectiveness of output on explicit and implicit knowledge. The quantitative analysis is represented in tables detailing the percentage of correct use of IOPs per participant in each activity, tables detailing the frequency of IOP tokens in activities, and test results. Based on test results each participant was categorized as showing improvement or no improvement for development of implicit knowledge and/or explicit knowledge. Test results were then compared to IOP frequencies to determine if overall quantitative results show support for output in facilitating development of explicit and implicit knowledge.

The quantitative data is also the main source to respond to Research Question 3, concerning whether proficiency level is an indicator of improvement as assessed by the untimed written picture description task (PDT) and the timed grammaticality judgment task (GJT). Proficiency levels were compared to tokens of use of IOPs, percentage of use per activity, test scores and amount and type of LREs. The tables showing individual performance for each activity (Tables 4.2-4.9) display the percentage of use of IOPs per learner with his/her corresponding proficiency level.

The second main section presents the qualitative data to answer Research Question 4 regarding whether LREs contribute to L2 development of explicit and implicit knowledge of IOPs. Qualitative data consists of a detailed description of each grammar oriented LRE referencing use or form of an IOP per group. Each LRE is described in terms of its type and the response it evoked. The final analysis presents each participant's proficiency level, and the number of LREs in which he/she interacted compared to test scores. Qualitative results suggest LREs can contribute to L2 development and may increase knowledge of IOPs.

Quantitative Data Summary

Results of Paired Activities

As mentioned in Chapter 3, there were a maximum of six (6) activities completed by each group. All 6 activities were the focus of the quantitative and qualitative data. The data will offer insights into the particular complexities of each pair in terms of the processes associated with output and learning IOPs. The number and accuracy of learner's use of IOPs across the 6 activities will be analyzed in Tables 4.2-4.9. Each table accounts for the amount of IOPs used correctly and the number of IOPs that were either produced incorrectly or omitted with a verb or transfer or communication. Table 4.1 is a duplication of the chart from Chapter 3 that summarizes the type of work that was completed in each activity with varying control of use of IOPs.

Table 4.1
Type of activities completed

Day	Activity	Spoken	Spoken & Written	Prepared IOP	Prepared & free IOP	Free IOP
1	1a Matching	X		X		
2	2a *¿Qué haces*?		X	X		
	2b Interview	X			X	
3	3a *¿Qué le va a comprar*?	X				X
	3b Original Sentences	X				X
	3c Narrations		X			X
Totals	6	4	2	2	1	3

Table 4.2
Activity 1a Matching game

Group # Participant and Proficiency	IOPs used correctly	Non-production of a correct form[7]	Total opportunities	% of IOPs used correctly / total opportunities
Group 1 Karen (High)	4	0	4	4/4= 100%
Group 1 Mary (High)	4	0	4	4/4= 100%
Group 2 Becky (High)	7	1	8	7/8= 88%
Group 2 Suzie (High)	6	2	8	6/8= 75%
Group 3 Ron (Mid)	3	1	4	3/4= 75%
Group 3 Sky (High)	4	7	11	4/11= 36%
Group 4 Fred (High)	4	2	6	4/6= 67%
Group 4 Doug (Low)	1	0	1	1/1= 100%

Table 4.2 details results from the first activity in the treatment. "Matching" (1a) was intended to have learners make form-meaning connections by matching sentences containing one IOP each with corresponding pictures. In this activity, groups were expected to produce at least 8 IOPs total given that any learner would read at least one IOP per card. The number of opportunities for each learner to produce IOPs varied due to the fact that the activity encouraged repetition of sentences until each match was found. Results of the matching activity showed that Groups 1 and 2 had a fairly equal percentage of IOPs used correctly. Groups 3 and 4 showed a larger difference in the percentage of IOPs used correctly. For instance, Ron and Sky had a large difference with 75% and 36%

[7] As was described in Chapter 3, non-production of a correct form refers to the incorrect production of an IOP and also the omission of an IOP with a verb or transfer or communication.

respectively. Although Sky had 11 tokens of use for IOPs, she incorrectly produced 7/11 IOPs. An example of her incorrect use of an IOP was the substitution of "*la*" for "*le*". Doug and Fred's results were of notable importance in that Doug only produced 1 IOP during the entire activity; whereas his partner produced 6, thus showing an unbalanced amount of production compared to his partner. Results from this first activity showed that the two lower level proficiency learners (Ron and Doug) used less IOPs than their higher proficiency partners (Sky and Fred).

Table 4.3
Activity 2a "¿Qué haces?"

Group # Participant and Proficiency	IOPs used correctly	Non-production of a correct form	Total opportunities	% of IOPs used correctly / total opportunities
Group 1 Karen (High)	16	0	16	16/16= 100%
Group 1 Mary (High)	18	0	18	18/18= 100%
Group 2 Becky (High)	20	1	21	20/21= 95%
Group 2 Suzie (High)	10	3	13	10/13= 77%
Group 3 Ron (Mid)	7	0	7	7/7= 100%
Group 3 Sky (High)	5	1	6	5/6= 83%
Group 4 Fred (High)	14	0	14	14/14= 100%
Group 4 Doug (Low)	8	0	8	8/8= 100%

Table 4.3 presents results of the Activity 2a "¿*Qué haces*?" that required participants to match 7 hypothetical questions with one of 7 prepared responses so that each partner had at least 7 opportunities to match and repeat sentences with prepared IOPs. Results showed that all participants, except Suzie, used the IOPs as listed in the

prepared responses without omitting any IOPs. The first group, Karen and Mary, was very consistent in use of IOPs with an almost even number of IOPs, 16 and 18 respectively. In Group 2 (Becky and Suzie), Becky's production of IOPs, 21, is almost double that of Suzie's, 13. Transcripts show that Suzie omitted a total of 4 IOPs in her responses: 2 responses were given without an IOP and began with the verb; the other 2 excluded the IOP and the verb. For example, the entire prepared response was listed as "*le digo no entiendo*" and Suzie only produced the second half of the response, "*no entiendo*". As was mentioned in Chapter 3, IOPs that were omitted without a verb of transfer or communication were not calculated as part of "non-production of a correct form" (Column 3) since IOPs are not required without a verb. Upcoming qualitative data show that some of Becky's tokens of IOPs were due to correcting Suzie's omission of an IOP. Meanwhile, Group 3, Ron and Sky, did not complete the activity per directions as only Sky asked Ron all the questions, which is why their production is about half, 6 and 7 respectively, of what was anticipated (at least 14 per participant). Ron had a low use of IOPs, but a high percentage of correct use, which also characterizes Ron's performance in upcoming activities. This detail is useful when considering whether greater accuracy or more use impacts development of IOPs. Finally, results from Group 4 showed Doug's production of IOPs, 8, lags significantly behind that of his partner Fred, 14, adding to the uneven production of IOPs found in the first activity this group completed.

Table 4.4
Activity 2b Interview

Group # Participant and Proficiency	IOPs used correctly	Non-production of a correct form	Total opportunities	% of IOPs used correctly / total opportunities
Group 1 Karen (High)	6	3	9	6/9= 67%
Group 1 Mary (High)	7	0	7	7/7= 100%
Group 2 Becky (High)	5	0	5	5/5=100%
Group 2 Suzie (High)	1	2	3	1/3= 33%
Group 3 Ron (Mid)	5	0	5	5/5=100%
Group 3 Sky (High)	0	2	2	0/2= 0%
Group 4 Fred (High)	3	1	4	3/4= 75%
Group 4 Doug (Low)	0	2	0	0/2= 0%

The interview activity (2b) from Table 4.4 created several opportunities to produce IOPs through prepared and free use given that the majority of the questions included IOPs that should have been used in learners' responses as well. Per instructions, the interview was to be completed twice with each partner asking and answering all questions. Learners should have produced multiple IOPs since they were instructed to answer with complete sentences. However, the fact that the context provided in the questions didn't always signal use of an IOP sheds interesting light on the instructional goals of the task. Only Group 1 completed the interview fully per directions. Groups 2 and 4 alternated questions within their groups, which meant each partner took a turn to ask or answer a question. From Group 3, Ron asked all the questions and Sky only responded. This detail offers a possible explanation for the low number of IOPs used for Suzie, Sky and Doug.

Activity 2b was the first in which participants were required to use IOPs in free speech. In other words, learners had to produce the entire response based on the question his/her partner asked. The free response portion of this semi-controlled activity might have been a significant factor behind the gap in partner performance in all 4 groups. Non-production of IOPs did not originate from asking a question since each learner read the questions provided to his/her partner. Ron's score of 100% could be an exception of a lower-level learner reaching 100%; however, whereas the other learners produced a mix of read and unscripted IOPs, Ron's responses were purely prepared IOPs. His use of IOPs reflected only IOPs that he read to his partner Sky. Conversely, Sky only responded to her partner's questions; her percentage (0%) shows she did not use any IOPs in this activity. These results suggest that more open-ended tasks may lead to higher production differences because each learner did not simply read a prepared IOP, but had to produce the IOP, which required each learner to consider many factors such as: case, placement, gender and number agreement.

Table 4.5

Activity 3a ¿Qué le va a comprar?

Group # Participant and Proficiency	IOPs used correctly	Non-production of a correct form	Total opportunities	% of IOPs used correctly / total opportunities
Group 1 Karen (High)	8	2	10	8/10=80%
Group 1 Mary (High)	5	2	7	5/7= 71%
Group 2 Becky (High)	4	0	4	4/4= 100%
Group 2 Suzie (High)	1	1	2	1/2= 50%
Group 3 Ron (Mid)	3	1	4	3/4= 75%
Group 3 Sky (High)	0	0	0	0/0= 0%
Group 4 Fred (High)	0	0	0	0/0=0%
Group 4 Doug (Low)	1	0	1	1/1=100%

Activity 3a "*¿Qué le va a comprar?*" from Table 4.5 was the first in which completely free use of IOPs was required for successful completion and thus was one of the most syntactically challenging activities learners were required to complete. This information-gap activity required pairs to work collaboratively to find the missing categories present in each of their charts. Learner's requests for the missing information and responses were designed to elicit use of the target structure. As witnessed in previous activities, there is a great difference in percentage of correct use of IOPs between all groups but Group 1 (Mary and Karen). Although Suzie and Sky are classified as high proficiency learners, their percentage of correct use, 50% and 0% respectively, is quite low compared to the other high proficiency learners. Transcript data show Fred and Doug did not complete the activity per directions. The extent of their completion consisted of

Doug repeating one of the model questions and Fred responding with an off-task remark. It is important to highlight that Doug's percentage of 100% was based on one correct production of an IOP, which is quite different from Mary's and Becky's percentages of 100% in correct use of IOPs, which were based on 7 and 4 IOPs respectively.

Table 4.6
Activity 3b Original Sentences

Group # Participant and Proficiency	IOPs used correctly	Non-production of a correct form	Total IOPs used	% of IOPs used correctly / total opportunities
Group 1 Karen (High)	5	0	5	5/5= 100%
Group 1 Mary (High)	5	0	5	5/5= 100%
Group 2 Becky (High)	4	0	4	4/4= 100%
Group 2 Suzie (High)	2	4	6	2/6= 33%
Group 3 Ron (Mid)	4	0	4	4/4= 100%
Group 3 Sky (High)	5	0	5	5/5= 100%
Group 4 Fred (High)	2	0	2	2/2= 100%
Group 4 Doug (Low)	0	2	0	0/2= 0%

The previous activity (3a) was designed to develop learner knowledge of IOPs by creating questions and statements containing subjects, direct objects and indirect objects. Activity 3b "Original Sentences" was based on a similar sentence structure from Activity 3a (Table 4.5), which served as a model for participants to create their own sentences. The goal of Activity 3b was to orally incorporate an IOP in up to 5 sentences that learners were required to produce. In order to accomplish this task, learners were given varying categories of indirect objects and direct objects; the subject and verb remained "*voy a* *comprar*" for each sentence. As shown in Table 4.6, overall all learners achieved 100% with the exception of Suzie and Doug. As in previous activities, Doug showed very low production (0%) in comparison to his higher proficiency partner, Fred (100%). Transcript data showed that Suzie produced 3 IOPs incorrectly and omitted 1 IOP with the verb phrase. For example, Suzie repeated the use of "*le*" in two of her sentences following sentence with plural indirect objects. Consistent with scores in previous activities, Karen and Mary (Group 1) completed the activity with the highest percentage of 100%.

Table 4.7
Activity 3c Story reconstruction

Group # Participant and Proficiency	IOPs used correctly	Non-production of a correct form	Total opportunities	% of IOPs used correctly / total opportunities
Group 1 Karen (High)	3	0	3	3/0= 100%
Group 1 Mary (High)	0	0	0	0/0= 0%
Group 2 Becky (High)	9	2	11	9/11= 82%
Group 2 Suzie (High)	0	0	0	0/0= 0%
Group 3 Ron (Mid)	0	0	0	0/0= 0%
Group 3 Sky (High)	3	1	4	3/4= 75%
Group 4 Fred (High)	1	1	2	1/2= 50%
Group 4 Doug (Low)	0	0	0	0/0= 0%

Activity 3c, the story reconstruction, also referred to as "Narrations" from Table 4.7 required participants to read 2 brief stories and recreate them collaboratively in writing. Each brief story contained 4 IOPs for a total of 8 IOPs presented in this activity. The goal of this collaborative activity was for participants to potentially interact with each other in reference to the use and form of IOPs as they attempted to rewrite each story. The total number of IOPs used overall is much lower in this activity compared to previous ones. Transcripts reveal that many participants orally translated the story into English or in some groups, (such as Groups 1 and 4) chose to divide the sentences they would each memorize and thus did not interact with one another. Although this activity was analyzed quantitatively, several language related episodes originated here, providing useful qualitative data in suggesting how output may facilitate development of knowledge of IOPs (see the upcoming section on qualitative results for more details).

Table 4.8
Average percentage per activity

Group & Participant	Proficiency	Activity 1a	Activity 2a	Activity 2b	Activity 3a	Activity 3b	Activity 3c	AVG. % [8] in activities
Group 1 Karen	High	4/4= 100%	16/16= 100%	6/9= 67%	8/10= 80%	5/5= 100%	3/3= 100%	91%
Group 1 Mary	High	4/4= 100%	18/18= 100%	7/7= 100%	5/7= 71%	5/5= 100%	0/0= 0%	79%
Group 2 Becky	High	7/8 = 88%	20/21= 95%	5/5=100 %	4/4= 100%	4/4= 100%	9/11= 82%	94%
Group 2 Suzie	High	6/8= 75%	10/13= 77%	1/3= 33%	1/2= 50%	2/6= 33%	0/0= 0%	45%
Group 3 Ron	Mid	3/4= 75%	7/7 = 100%	5/5=100 %	3/4= 75%	4/4= 100%	0/0= 0%	75%
Group 3 Sky	High	4/11= 36%	5/6= 83%	0/2= 0%	0/0= 0%	5/5= 100%	3/4= 75%	49%
Group 4 Fred	High	4/6 = 67%	14/14= 100%	3/4= 75%	0/0= 0%	2/2= 100%	1/2= 50%	65%
Group 4 Doug	Low	1/1= 100%	8/8= 100%	0/2= 0%	1/1= 100%	0/2= 0%	0/0= 0%	50%

[8] The average percentage of correct use of IOPs was averaged to the nearest whole number.

Results of all individual scores per activity in Table 4.8 are presented to summarize the average of each participant's correct use of IOPs from all six activities (1a-3c). Specifically, the percentage of correct use examined the rate at which IOPs were used correctly compared to IOPs that were either omitted or produced with erroneous form. Based on results of Table 4.7, four learners achieved between 75% and 94%: Karen (91%), Mary (79%), Becky (94%), and Ron (75%); while the remaining four learners' averages ranged from 45% to 65%: Sky (49%), Suzie (45%), Doug (50%) and Fred (65%). There is a considerable gap in partner performance amongst all groups. A deeper analysis of partner interaction in the upcoming section on qualitative data and language related episodes (LREs) provides more insight as to how group- related variables may impact development of IOPs.

An immediate analysis of percentage of use and proficiency levels suggests that higher proficiency with subject-verb agreement corresponded to a greater percentage of correct use throughout all activities. This is true for Karen, Mary and Becky. As a low proficiency learner, Doug's score of 50% suggests that the background knowledge that he seems to lack in marking tense and person-number subject agreement (i.e., verb conjugations) is similar to what he needs for marking IOPs—person, number, and case. Exceptions to this pattern would be that Suzie (45%) and Sky (49%), and Fred (65%) all high proficiency learners, achieved lower averages on correct use of IOPs compared to the other high proficiency learners. Suzie consistently omitted or incorrectly produced at least 1 IOPs in each activity. In Activity 1a, Sky's non-production of IOPs was mostly incorrect in form; in the remaining activities, most of the errors came from omitted IOPs in free use. However, she did have 100% correct use in Activity 3b, sentence creations, which only offered a model sentence upon which learners were to base their sentences. Another interesting observation from Table 4.8 is that Ron's percentage (75%) placed him alongside other high proficiency learners although he was the only mid level proficiency learner. Due to some discrepancies in task completion, these results need to be interpreted carefully. Ron's higher percentages on activities often reflect him producing prepared IOPs instead of free use of IOPs. For example, in the interview activity (Table 4.4) he read the questions, but never produced an IOP freely. This factor could allow insight into whether producing prepared IOPs as compared to free use may have a greater impact on L2 development of IOPs. Therefore, Ron's average in comparison to his frequency of IOP tokens and test scores may offer insight as to the impact of prepared vs. free use of IOPs. Considering the exceptions, results showed that the high proficiency learners will generally achieve higher percentages of total use of IOPs.

Table 4.9
Frequency of tokens of IOPs per activities

Participant & Group #	Proficiency	IOPs produced correctly	IOPs produced incorrectly[9]	Total IOPs recorded
Karen Group 1	High	42	3	45
Mary Group 1	High	39	2	41
Becky Group 2	High	49	3	52
Suzie Group 2	High	20	5	25
Ron Group 3	Mid	22	1	23
Sky Group 3	High	17	9	26
Fred Group 4	High	27	3	30
Doug Group 4	Low	15	0	15

Frequency of IOP Tokens

Table 4.9 presents the frequency of tokens of IOPs per participant in all 6 activities. The frequency of IOPs was used to answer Research Questions 1 and 2 concerning whether more output increases development of explicit and implicit knowledge of IOPs. I compared the number of total IOPs per activity (Column 5) to assessment of explicit and implicit knowledge to evaluate the claim that output facilitates learning of IOPs. A comparison of correct and incorrect percentages shows that besides Sky, the remaining participants produced 5 or less IOPs incorrectly. Based on Table 4.7, Sky also had the lowest percentage of correct use of IOPs. Again, Doug's use of IOPs

[9] IOPs produced incorrectly correspond to an error in at least one of the following categories: case, person, number, or placement.

produced correctly needs to be analyzed carefully as all of his productions of IOPs were prepared, meaning he didn't create any IOPs freely based on context.

Table 4.10
Rank-order of frequency

Participants / Proficiency	Frequency of Tokens of IOPs	Rank-order
Becky / High	52	1
Karen / High	45	2
Mary / High	41	3
Fred / High	30	4
Sky / High	26	5
Suzie / High	25	6
Ron / Mid	23	7
Doug / Low	15	8

In order to account for the varying numbers of IOPs used, participants were placed in order of frequency from highest to lowest in Table 4.10. To facilitate a comparison of frequency and test scores in the discussion chapter, each participant was categorized as having high or low frequency. To do so, once the frequencies were ranked from highest to lowest, the range of the set of numbers was calculated as 37. Thirty seven was divided by 2 to equal 18.5, which was then added to the baseline, 15, to arrive at 33.5, which was finally rounded to 34. The following classification of high vs. low frequency is based on those participants with frequencies above 34: Becky, Karen and Mary; and those with frequencies below 34: Fred, Sky, Suzie, Ron and Doug. The order of frequency from Table 4.10 reveals that Becky had the highest individual frequency for use of IOP per activity with 52. Following Becky, Karen and Mary had 45 and 41 tokens respectively. Ron and Doug had the lowest amount of tokens: Doug used the least amount of IOPs in activities with 15; and Ron's frequency of 23 was second to last.

Considering that Ron and Doug were classified as mid and low-level proficiency, a possible connection can be made between lower levels of proficiency with less tokens of production of IOPs. Furthermore, all participants in the high frequency category are high proficiency learners.

Table 4.11
Overview of test scores

Participants and Group	Proficiency level	PDT* Pre-test	PDT Post-test	PDT Delayed Post-test	GJT** Pre-test	GJT Post-test	GJT Delayed Post-test
1- Mary Group 1	High	0	100	100	56.25	83.33	72.22
1- Karen Group 1	High	41.17	58.82	58.82	38.88	66.66	72.22
2- Becky Group 2	High	23.52	23.52	70.58	61.11	50	38.46
3- Suzie Group 2	High	0	0	0	33.33	18.75	66.66
4- Ron Group 3	Mid	0	0	0	25	13.33	58.82
5- Sky Group 3	High	0	0	0	23.07	47.05	28.57
6- Fred Group 4	High	0	0	0	20	22.22	28.57
7- Doug Group 4	Low	0	0	0	54.54	38.46	46.66

*PDT = Untimed picture description task
**GJT= Timed grammaticality judgment task

Test Results

The upcoming section presents quantitative results of the PDT and GJT used to assess explicit and implicit knowledge of IOPs respectively. Table 4.11 lists each participant, proficiency level, and scores on all 6 tests that each participant completed (2 sets of a pre, post and delayed posttest). Quantitative results of the untimed picture description task are presented first (Figure 4.1) followed by results of the timed grammaticality judgment task (Figure 4.2).

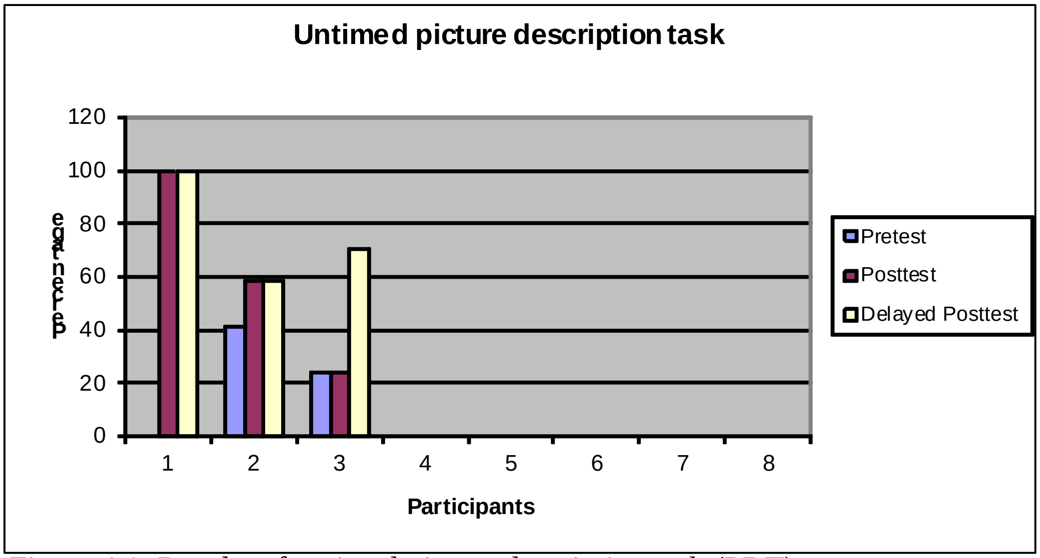

Figure 4.1: Results of untimed picture description task (PDT)

Results of the Picture-Description Task

Results of the untimed written picture description task (Figure 4.1) show only 3 participants: Mary (Participant 1), Karen (Participant 2) and Becky (Participant 3) improved from pretest to delayed posttest. The remaining 5 participants: Suzie (Participant 4), Ron (Participant 5), Sky (Participant 6), Fred (Participant 7) and Doug (Participant 8) received 0% on all tests since they never produced an IOP in any of the test administrations. It is important to recall that the test scores were based solely on the use of the IOPs (up to 4 points for correct placement, case, person and number). In other words, learners did not receive any points for use of noun phrases, which is in fact what many learners produced instead of IOPs. Mary's pretest score increased from 0% to 100% on both posttests. Karen's score from pretest to immediate posttest increased from 41.17% to 58.82%. Becky's score from pretest to immediate posttest remained exactly the same at 23.52%. These results show that there was a greater increase for Mary and

Karen than Becky from pretest to immediate posttest. Further analysis revealed the 3 participants who improved scored at least equal or greater from the immediate to delayed posttest. Mary and Karen stayed at exactly the same percent in immediate and delayed posttests, 100% and 58.82% respectively; Becky (Participant 3) showed an increase from immediate posttest (23.52%) to delayed posttest (70.58%).

A notable observation based on the PDT is that all 3 participants who improved were high proficiency learners. The remaining 5 participants who did not improve varied in proficiency levels. There were 3 high proficiency learners, Suzie, Sky and Fred; 1 mid proficiency learner, Ron; and 1 low proficiency learner, Doug. A comparison of the scores with these learners' frequency ratios shows that the 3 participants with the greatest improvement on the picture description task- Mary, Karen and Becky- also had the highest tokens per activity: 41, 45, and 52 respectively. This suggests that a higher frequency of use of IOPs corresponded with stronger learning outcomes for development of explicit knowledge.

An analysis of the "zero-scores" on the PDT show an increase in the use of indirect objects without corresponding IOPs. Ron and Sky included more indirect objects on the posttests than they had on the pretests. Frank included a comparable amount of indirect objects on the pretest as well as posttests. Doug did not use any indirect objects, but did create a few noun phrases that either began with "*por*" or "*con*". Suzie did not use any indirect objects on the pretest, but did use a combination of indirect objects and noun phrases on posttests. So then, it appears that the omission of the IOP does not necessarily mean that these participants had no explicit knowledge of indirect objects. Results of the PDT, for the 5 participants who did not improve, show that it did not occur to them to use an IOP to describe the picture, even after ample opportunities to do so after instruction. These observations say something about the impact of explicit instruction on these participants, but not necessarily something about their explicit knowledge.

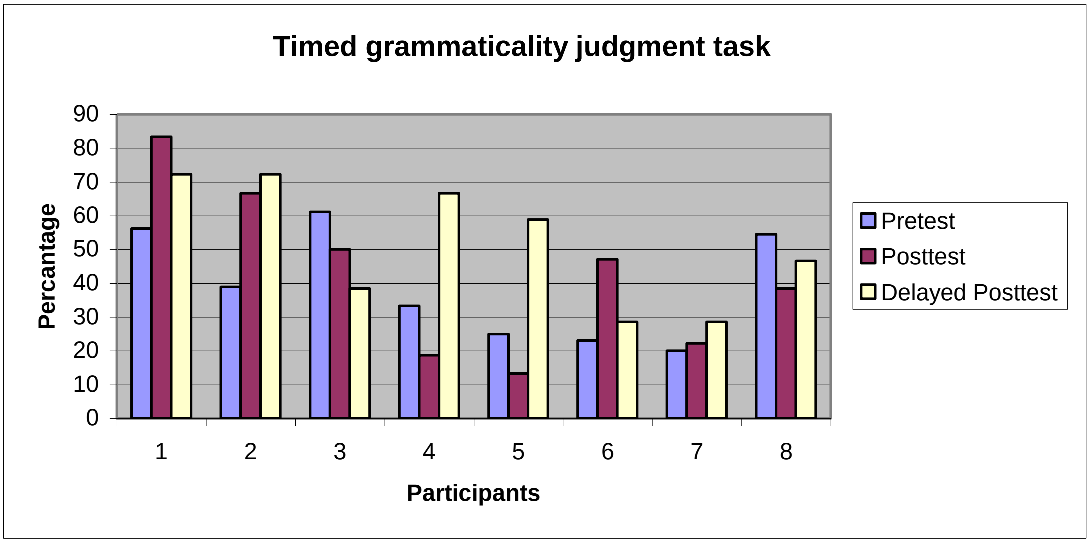

Figure 4.2 Results of timed grammaticality judgment task (GJT)

Results of the Grammaticality Judgment Task.

Results of the timed grammaticality judgment tasks (GJTs) (Figure 4.2) used to assess explicit knowledge of IOPs are considerably more complex compared to the trends found with the picture description task (Figure 4.1). Although some features of the GJTs showed a trend similar to that of the picture description task, results of the former presented more exceptions to such trends. For example, half of participants' pretest scores are higher than their immediate posttest scores, which never occurred with the picture description task. In addition, an immediate analysis of the results shows less consistency between proficiency level and higher tests scores with results of the GJTs. Before explaining discrepancies found between the two sets of test scores, it is important to consider the nature of GJTs when interpreting these results. The series of tests using GJTs offered 3 choices for the participant to select: correct, incorrect or not sure. Because of the choices provided, a participant could have guessed correctly for certain responses giving him/her an unreliable score as a measure of implicit knowledge. Also, although participants were reminded that the grammaticality of the sentence was not influenced by vocabulary choices, someone could have rated the sentence as correct or incorrect based on some other grammar feature of the sentence. Therefore, the following classifications in levels of improvement in the GJT were made to account for this possibility.

Improvement was based on an increase from pretest to posttests. Overall, 6 participants did indeed improve from pretest to delayed posttest. First, participants, Mary (Participant 1) and Karen (Participant 2) improved considerably from the pretest to the immediate posttest increasing from 56% to 83%, and 38% to 66% respectively. Although Mary's delayed posttest score decreased to 72%, Karen's delayed posttest score increased from 66% to 72%. Mary and Karen were most consistent in improvement on the GJT and the PDT. Both were high-level proficiency learners, had high percentages of correct use: 91% (Karen) and 79% (Mary), and high frequencies with the target structure: Karen had 45 tokens and Mary, 41. Four of the 6 participants increased from the pretest to the delayed posttest: Suzie (Participant 4), Ron (Participant 5), Sky (Participant 6), and Fred (Participant 7). Suzie's (Participant 4) score doubled from the pretest to the delayed posttest 33% to 66%; and Ron improved from 25% to 58%. The remaning 2 participants showed only marginal improvement from pretest to delayed posttest: Sky (23% to 28%), and Fred (20% to 28%).

There were 2 participants whose scores decreased from pretest to immediate posttest: Becky (Participant 3) and Doug (Participant 8). Becky's scored decreased from 61% to 50% and finally to 38% in pre, post and delayed tests. Doug decreased from

54.54% in pretest to 38.46% in immediate posttest. Although Doug's scores increased from immediate (38.46%) to delayed posttest (46.66%), his final score was less than his pretest. Of the 2 participants that did not improve on the GJT, Becky was a high proficiency learner, whereas Doug was the only low proficiency learner. Results for Becky on the GJT do not concur with the improvement evidenced on the PDT, which is unexpected since Becky was one of three participants to improve on the PDT. Becky (Participant 3), Karen (Participant 2) and Mary (Participant 1) were all high proficiency learners, had high percentages of correct use, and produced the highest number of tokens for IOPs. Unlike Karen and Mary, Becky's scores steadily declined on the GJT (61%, 50% and 38%).

Scores on the timed GJT (Figure 4.2) follow a similar trend regarding proficiency levels and the untimed PDT (Figure 4.1), but with less consistency. Of the 6 participants who improved on the GJT, 5 were high proficiency learners. Although Sky (Participant 6) and Fred (Participant 7) were both high proficiency learners, they only showed marginal improvement on the GJT, which may be connected to the considerably low amount of tokens of IOPs they used, 26 and 30 respectively. The only low-level learner, Doug (Participant 8) did not improve on the GJT; however, the only mid level learner, Ron (Participant 5), did indeed improve on the GJT.

Unlike the relationship that was shown with frequency and test scores on the PDT, scores on the GJT were less consistent in reference to high vs. low frequency of tokens produced during activities. Although Becky (Participant 3) had the highest frequency of tokens of IOPs per activity (52), she did not improve on the GJT. Conversely, Suzie (Participant 4) had a low frequency of IOPs (25), but improved on the

GJT. Ron improved on the GJT although he had the second to lowest number of tokens per activity, 23. However, based on results of the GJT, development of implicit knowledge was more consistent for high proficiency learners. Additionally, more exceptions were found in reference to frequency of IOPs and stronger learning outcomes.

Qualitative Results Summary

The qualitative data consists of transcriptions of each group's recorded interaction during classroom activities. Each transcription was coded for any language related episodes (LREs) that emerged regarding the use or form of IOPs to explore factors that may impact output and learning IOPs. All 6 activities were used as the focus of LREs since each group recorded all activities. Differing numbers of LREs occurred in the all of the activities except Activity 1a Matching (where no LREs were initiated) possibly due to the fact that this activity involved all prepared use of IOPs. Within the scope of foreign language learning, it is very important that task design promote interaction amongst partners. The qualitative data serves to respond to Research Question 4, which asked whether LREs contribute to L2 development of IOPs. In order to support or negate claims of the usefulness of LREs in grammar development, I begin by presenting a detailed description of each LRE referencing the target structure within each group. Finally, I will compare the number of LREs and response to posttest scores. Table 4.12 details every LRE present from all activities recorded for each pair based on Storch (2002).

Table 4.12
LREs referencing IOP

LRE across groups			Type of LRE*			Response**	
Group	No. of LREs	Initiator	SC	OC	M	IV	NIV
1	3	Mary: 0 Karen: 3	3 100%	0	0	0	3 100%
2	5	Becky: 5 Suzie: 0	0	4 80%	1 20%	3 60%	2 40%
3	2	Ron: 0 Sky: 2	1 50%	1 50%	0	0	2 100%
4	0	Fred: 0 Doug: 0	0	0	0	0	0

*Type of LRE
SC: self-correction
OC: other-correction
M:metatalk
**Response
IV: interactive
NIV: non-interactive

LREs per Group

In general, Group 1, Mary (high proficiency) and Karen (high proficiency) had minimal LREs; the only LREs were self-corrections by Karen in which Mary did not comment or offer assistance. All 3 LREs came from Activity 3a "*¿Qué le va a comprar?*" in which Karen had 3 instances of self-correction. In each case the LREs were non-interactive. The first correction (Example 4.1) was the incorrect insertion of the IOP before an infinitive verb. Although the IOP was correct in form, it was incorrect in placement. The second example of self-correction (Example 4.2) was an optional correction on the structure in which Karen reordered the placement of the direct object with the subject. The final self-correction (Example 4.3) was an incorrect change of form regarding the IOP.

Example 4.1

M: ¿*Qué le va a comprar Roberto para su cumpleaños*?

What is Roberto going to buy him/her for his/her birthday?

K: *Roberto comprar un vestido….no le comprar un vestido a Carmen para la navidad*.

Roberto to buy a dress…to him/her not to buy a dress for Carmen for Christmas.

Example 4.2

K: *¿Cuándo le va a comprar un televisor…no cuando le va a comprar Mayín y Pedro*

una televisor a Luís?

When will he/she buy a television for him/her…no when will Mayin and Pedro buy

a television for Luis.

Example 4.3

K: *A mi amiga yo le va a…te va a mi amiga una bicicleta para su cumpleaños.*

For my friend I'm going to for him/her…to you he/she is going to for my friend a

bicycle for his/her birthday.

Group 1 did not have any interactive LREs. During the interview activity, when Mary interviewed Karen, there were 3 instances where Karen gave an incorrect answer and Mary did not provide any input. For example, one of the incorrect answers Karen gave showed a misinterpretation of the meaning of the entire sentence when Mary asked,

"*¿Te hace muchas preguntas la profesora*?" (Does the professor ask you a lot of questions?) and Karen responded "*Me hago muchas preguntas al profesora*" (I ask myself a lot of questions to the professor).

For Group 2, Becky (high proficiency) and Suzie (high proficiency), the types of LREs that emerged were primarily other-corrections from Becky to Suzie and one LRE of metatalk. Becky initiated all LREs over the target structure including several corrections of Suzie's forms and offered assistance in helping Suzie select a correct answer. Group 2 was also the only one with interactive LREs. In total they had 5 LREs of which 2 were interactive. All of Group 2's LREs captured from activity recordings are analyzed below. The following 4 examples of LREs are other-corrections initiated by Becky: 2 interactive and 2 non-interactive.

Example 4.4 from Activity 2a presents a LRE where Becky corrected Suzie's use of "*la*" (Line 1) with "*le*" (Line 2). This LRE is interactive because Suzie immediately incorporated Becky's correction in her response (Line 3).

Example 4.4

1- S: *¿A quién la...*

To who it…

2- B: *le*

to him/her

3- S: *le preguntas si no sabes cuando es el examen*?

you ask if you don't know when the exam is?

In Example 4.5, also from Activity 2a, Becky initiated 2 more LREs of other-correction that centered upon the inclusion of the IOP prompted by Suzie's omission of the IOP in Lines 2 and 5. Suzie's responses from Example 4.5 were non-interactive since she never questioned nor incorporated the utterance into her production. Both of the following corrections did not show an immediate result:

Example 4.5

1- B: *Y ¿qué le dice a una persona cuando te da un regalo para tu cumpleaños?*

And, what do you say to a person when he/she gives you a gift for your birthday?

2- S: *Digo gracias.*

I say thank you.

3- B: *Le digo...* Ok.

I say to him/her…

4- B: Um *¿Qué le dices a tu actor favorito si lo ves en el centro comercial?*

What do you say to your favorite actor if you see him in the mall?

5- S: *Me gustan mucho sus películas.*

I like your movies a lot.

6- B: *Le digo me gustan muchos...mucho sus películas.*

I say to him I like your movies a lot.

Unlike the LREs where Becky interjects with the correct form; in Example 4.6, from Activity 3a "*¿Qué le va a compra*r*?*", the correction seems to have been prompted by Suzie verbally showing signs of difficulty (Line 1). In this interactive LRE of other-correction Becky assisted Suzie by giving her the proper phrase with the correct IOP so that Suzie could complete her question. Becky's initial correction (Line 2) did not appear to register immediately with Suzie as she asked "*¿Qué?*" (Line 3). After the second time

Becky repeated the question, "*¿Qué le va a comprar?*" (Line 4), Suzie was correctly incorporated Becky's correction (Line 5).

Example 4.6

2- S: *¿Qué la persona que va....hold on so*

What the person is going to…

3- B: *¿Qué le va a comprar...*?

What is he/she going to buy him/her…?

4- S: *¿Qué*?

What?

5- B: *¿Qué le va a comprar...*?

What is he/she going to buy him/her…?

6- S: Ok. So *¿Qué le va a comprar Roberto*?

What is Roberto going to buy him/her?

In addition, Example 4.7 presents an interactive LRE of metatalk from Activity 3c (Narrations) in which both Becky and Suzie produce chunks of sentences containing "*le*" in attempts to reconstruct the original sentence from the story about what Maria planned to buy her family for Christmas. This LRE is classified as metatalk since Becky produced different forms of the IOP in Lines 1, 5 and 7, but finally concluded "*les*" agreed with "for them" (Line 11). Suzie's contributions in Line 10 suggest she also was negotiating the target structure in its original context.

Example 4.7

13- B: Yeah. *A su familia…le va*

For her family…is going to

14- S: *a comprar*

to buy

15- B: *una blusa para...a...para su madre* um

a blouse for…to….for…her mother

16- S: *las camisas para las hermanas*... wait *va a comprar*...

the shirts for the sisters… going to buy…

17- B: *Les va no no*... it was just *unas camisas*

buy for them no no… some shirts

18- S: but isn't *hermanas*?

sisters?

19- B: *unas camisas...les*...How was the sentence?

Some shirts…for them…

20- S: I think it repeated it.

21- B: *Las camisas para...*

the shirts for…

22- S: *le va a comprar...*

she is going to buy him/her…

23- B: *les va*...for them

Buy them…

24- S: *Camisas para las hermanas*

Shirts for the sisters

To summarize, there were a total of 5 LREs for Group 2: 4 LREs of other-correction (2 interactive and 2 non-interactive); 1 LRE of metatalk (interactive). More specifically, in 2 LREs Suzie was able to include the corrections on 2 of her utterances immediately. Two interesting, co-occurring observations surfaced in Becky's and Suzie's interaction with multiple LREs. First, Suzie interacted with 3 LREs referencing IOPs and also improved on the timed grammaticality judgment task. Additionally, Becky's initiated 5 LREs including one of metatalk and also achieved a high score on the picture description task used to assess development of explicit knowledge.

Group 3, Ron (mid proficiency) and Sky (high proficiency), was considered non-interactive because there was no interaction for either of the 2 LREs produced. Sky initiated 2 LREs: 1 self-correction and 1 other-correction. Although there were several lexically focused LREs, there were only two LREs incorporating an IOP. Both of the grammatical LREs occurred during the narration activity. The first LRE (Example 4.8) presents a non-interactive other-correction made by Sky. Sky showed an understanding of the use of "*le*" as she corrected Ron to include "*le*" before "*va a*" (Line 5). Although Sky noted the need for the IOP in this sentence, Ron did not interact with the correction, but rather questioned lexical features such as the correct translation of "her" (Lines 6 and 12). The second LRE, also from Example 4.8, was a self-correction by Sky, in which she reflected on her use of "*va a*" to produce "*les va a*" before finally ending with "*le va a comprar*" (Line 11). This excerpt shows that Sky appears to be involved in constructive metalinguistic analysis as she first changed her response to include the IOP and then changed its form. Following Sky's correction, the interaction reverts to discussion of the use of "her" (Lines 12 and 13).

Example 4.8

1- Sk: *Pero por la navidad ela...* was it...

But for Christmas she [incorrect pronunciation]…

2- R: *voy a...*

I'm going to…

3- Sk: *voy a la...*

I'm going to the

4- R: *va a*

She is going to

5- Sk: No...*le va a...le va a comprar muchos cosas*

...she is going to for him/her…she is going to buy many things for him/her

6- R: *para* her...how do you say her?

for

7- Sk: *Ela*

Her

8- R: Really? You say *ela*?

her

9- Sk: mmhm

10- R: *familia*

Family

11- Sk: Um *una blusa*...wait *va a*...no its *les va a…le va a comprar* *a blouse…she is going to…she it going to for them…she is going to buy for them*

8- R: Ima say it all in one sentence...*una blusa para la madre*. Are you sure that's her?

…a blouse for the mother.

Although Sky's involvement in 2 LREs would suggest that she was at least moving towards greater knowledge of LREs, her test scores reveal that she only showed modest gains from pretest to delayed posttest on the GJT, while showing greater improvement from pretest to immediate posttest. Ron did not initiate nor interact with any grammar oriented LRE, but did improve on the GJT.

In Group 4, both Fred (high proficiency) and Doug (low proficiency) initiated several lexical LREs, no grammatical LREs emerged for Group 4 in any activity. Furthermore, this group had several instances of difficulty in comprehension and thus debated considerably over lexical items, which could suggest they both were processing at a lexical level. Possibly as a result of the lexical focus, they also had low frequency of IOPs tokens: Fred, 30 and Doug, 15. Because Doug's scores decreased from pretest to both posttests on the GJT, his performance during instructional activities along with his test scores may suggest that lower proficiency learners might not have sufficient background grammar knowledge to make significant gains of IOPs. On the other hand, Fred, a high proficiency learner only showed marginal improvement from pretest to posttest on the GJT (20% to 28%). As with Doug, Fred also scored 0% on pre and posttests on the PDT. The subsequent excerpt from Example 4.9 shows how from the first activity (the matching game) both Fred and Doug demonstrated a lexical focus. In this example, Fred questioned the meaning of "*bebida*" and Doug responded immediately.

Example 4.9

F: *No gusto. Le sirve un bebida. ¿Qué es bebida?*

I don't like [incorrect verb]. She serves him a [incorrect gender] drink. What is drink?

D: Drink

An additional excerpt from the next activity ("*¿Qué haces?*"), Example 4.10, is included particularly to demonstrate the level of processing that characterized both Doug and Fred thoughout all activities, which possibly suggest limitations on activity completion. During the "*¿Qué haces?*" activity, although the words "*pareja*" (partner), "*mesero*" (waiter) and "*encuentras*" (you find) were from the chapter in which the students were working or had completed prior to all treatment, both Fred and Doug questioned the meaning of these words (Lines 3, 7 and 8).

Example 4.10

1- D: *Número dos. ¿Qué le dices a tu pareja si dice que está trabajando pero lo/la ves con otra persona en un restaurante elegante?*

Number two. What do you say to your partner if he/she says that he/she is working late but you see him/her with another person in an elegant restaurant?

2- F: *¿Qué es pareja? Pareja es...* couple.

What is partner? Partner is…

3- D: *¿Qué le dices a tu pareja si dice que está trabajando pero lo/la ves con otra persona en un restaurante elegante?*

4- F: Skip that.

5- D: *Número tres. ¿Qué le dices al mesero si encuentras a una mosca en tu sopa?*

Number three. What do you say to the waiter if you find a fly in your soup?

6- F: *¿Mesero? ¿Qué es mesero? Mesero es...*waiter. *Mosca en tu sopa.*

Waiter? What is waiter? Waiter is…waiter. Fly in your soup.

7- D: What is *encuentras*?

you find?

8- F: I don't know. The next one *es le digo lo siento si puedo tomar el examen...*no

is I say to him/her I am sorry if I can take the exam...

9- no.... *¿Sí o es?*

Summary of Results

In response to Research Question 1 and 2, a positive relationship was established between output and development of explicit and implicit knowledge for most learners in this study. Individual factors such as frequency of tokens of IOPs and proficiency level with subject-verb agreement seem to have a stronger effect than group-related factors such as LREs and interactivity. In other words, it appears that LREs may assist a learner's knowledge of IOPs, but that LREs are not the main factor influencing development of IOPs. Quantitative data suggest that proficiency level and frequency of production more consistently appear to have a greater impact on development of IOPs than LREs. For instance, participants with higher frequency of IOPs most consistently had higher test scores on the PDT.

In response to Research Question 3, background knowledge of subject-verb agreement, referred to as proficiency level, was deemed a relevant factor in learning outcomes for IOPs since results showed more improvement for higher proficiency and less for lower proficiency on both tests. Additionally, the learners with higher percentages in correct use of IOPs and overall higher tokens of IOPs per activities were all high proficiency learners. It is important to consider that there were instances where some of the higher proficiency learners did not achieve high percentage of correct use or high frequency of tokens. Still, the trend for positive outcomes was overall most consistent for higher proficiency learners. In a similar manner, the trend of less improvement per test scores was notable with the mid and low-level learner.

Table 4.13
Grammar-oriented LREs per participant

Participants	Proficiency	Total LREs	Posttest PDT	Delayed Posttest PDT	Posttest GJT	Delayed Posttest GJT
1- Mary	High	0	100%	100%	83%	72%
2- Karen	High	3	59%	59%	67%	72%
3- Becky	High	5	23%	71%	50%	38%
4- Suzie	High	3	0%	0%	19%	67%
5- Ron	Mid	0	0%	0%	13%	59%
6- Sky	High	2	0%	0%	47%	29%
7- Fred	High	0	0%	0%	22%	29%
8- Doug	Low	0	0%	0%	38%	47%

Table 4.13 compares involvement in grammar oriented LRE with posttest scores[10]. Involvement in a grammatical LRE was determined by the following criteria: an

[10] All percentages were rounded to the nearest whole number.

LRE a participant initiated, or an LRE in which a participant interacted in the use or form of an IOP. The comparison of LREs and test scores suggests involvement in LREs may contribute to improvement in development of IOPs, but does not necessarily lead to improvement. With the exception of Sky, all participants involved in a LRE improved either on the PDT or GJT. For instance, Suzie showed some improvement on the delayed posttest for the GJT (67%), which might be related to her interaction with 3 LREs. One possibility is that her improvement on the GJT could be grounded in her receptive knowledge of IOPs. It is important to note that Becky, who interacted in the most LREs (5), appears to have minimal improvement; however, she had higher delayed posttest scores for the PDT (71%). Becky's results suggest that her initiation of 5 LREs may reflect higher levels of explicit knowledge and therefore may coincide with higher scores on the PDT.

Interaction with LREs generally appears more prevalent depending on the proficiency level, or grammatical knowledge regarding subject-verb agreement learners have. With the exception of Mary and Fred, all the high proficiency learners either initiated or interacted in 2 or more LREs. Mary was the only participant who improved on both tests, but was not involved in any LRE. A possible explanation is that Mary was a high proficiency learner and completed all activities with a 79% of correct use of IOPs and had high frequency of IOPs. Although Fred was a high proficiency learner, transcript data shows he initiated and interacted with several lexical LREs along with his partner Doug. Neither Doug, nor Fred showed substantial improvement on either test. Therefore, what we see among these 8 learners is that involvement in LREs appears to make a greater difference. In agreement with research on proficiency levels and LREs (Williams, 1999, 2001; Fortune, 2005; Watanabe & Swain 2007, 2008) the mid and lower level learners did not initiate nor interact with any LREs. All of the results and their theoretical implications will be discussed in detail in Chapter 5. In the following chapter we will see how quantitative and qualitative data will be used to respond to each of the 4 research questions concerning the effect of output on explicit and implicit knowledge of IOPs.

CHAPTER 5

DISCUSSION AND CONCLUSION

Throughout this study, I have investigated how output affects explicit and implicit knowledge of IOPs. This final chapter begins with a brief summary of main findings as detailed in Chapter 4. The subsequent interpretation of results and their application to teaching pedagogy is then divided into three sections in order to respond to each research question. The first section details theoretical implications on how output may facilitate explicit and implicit knowledge of IOPs in response to Research Questions 1 and 2. Because not all findings are consistent, I present possible explanations for discrepancies found in results of the PDT and the GJT. The second section provides an in-depth explanation of findings with regards to Research Question 3, which questioned to what extent accuracy with subject-verb agreement (referred to as proficiency) relates to development of IOPs as assessed by posttests. The third section addresses Research Question 4, which inquired whether language related episodes (LREs) contribute to L2 the development of explicit and implicit knowledge of L2 Spanish IOPs. We conclude with some of the limitations of this study and some suggestions for future areas of research.

Summary of Findings

The results of quantitative data demonstrate participants' performance in the percentage of correct IOPs produced in each activity, the frequency of IOP tokens orally produced, and the scores of pre- and posttests. First, the average percentage of use of IOPs examined the rate at which learners used IOPs correctly in all activities compared to those IOPs that were either omitted with a verb phrase or produced incorrectly. Table 4.8

(see Chapter 4) demonstrates that four learners' scores ranged from 75% to 94% (Ron, Mary, Karen and Becky), while the remaining 4 learners' averages ranged from 45% to 65% (Suzie, Sky, Doug, and Fred). Additional quantitative data consists of the frequency of IOP tokens a participant produced orally. Three participants (Becky, Karen and Mary) had frequencies greater than 34 compared to the remaining five participants (Fred, Sky, Suzie, Ron, and Doug). Concerning results of frequency, all participants with high frequencies of IOP tokens also improved on the PDT. In addition, all of the learners with high token frequencies were high proficiency learners as defined by an accuracy rate of 81.25% or more for subject-verb agreement on the PDT pretest. Conversely, the mid and low-proficiency learners (Ron and Doug) had the lowest frequencies of IOP production and did not improve on PDT posttests. Overall findings of the PDT showed that 3 out of 8 learners (Mary, Karen, and Becky) improved, all of whom were high proficiency learners. The remaining 5 participants all scored 0% on both posttests. Meanwhile, improvement on the timed GJT was evidenced in 6 out of 8 learners: 5 high proficiency learners (Mary, Karen, Suzie, Sky and Fred), and one mid-level learner (Ron). Of the six learners that improved on either the immediate or delayed posttest, Sky and Fred only showed marginal gains from pretest to delayed posttest with an increase of less than 10%: Sky, 23% to 28%; and Fred, 20% to 28%. Becky (high proficiency) and Doug (low proficiency) were the only two learners whose posttest scores decreased from pretest to both posttests. Becky scored 61%, 50% and 38%, while Doug scored 54%, 38% and 46%. A comparison of results of the PDT and the GJT show that only 2 of 8 participants that improved on the PDT also improved on the GJT.

Apart from identifying correct use and frequency of IOPs, negotiation or corrections in the use or form of IOPs during the instructional treatment were identified in the transcripts and coded for language related episodes (LREs). Involvement in grammar-oriented LREs throughout all activities is as follows: Mary, Ron, Fred and Doug did not initiate or engage in any LREs; Karen initiated 3 LREs; Becky initiated 5 LREs; Sky initiated 2 LREs; and Suzie interacted with 3 LREs. Karen and Becky both initiated more LREs and also improved on the PDT. Sky and Suzie were both involved in LREs and also improved at least minimally on the GJT. A comparison of results of background knowledge of subject-verb agreement (otherwise termed proficiency) and LREs reveal that, overall, all initiation and interaction in LREs were from higher proficiency learners. Both the mid-level learners and the lower-level learner did not initiate or interact with any LREs. Group 5, Fred and Doug, was the only dyad involving a high and low proficiency learner respectively. A notable finding with this group is that Fred's results did not typically coincide with other high proficiency learners. Fred had a low percentage of correct IOPs per activity, a low frequency, was not involved in any LRE and only showed marginal gains on the GJT.

Theoretical Implications for Explicit and Implicit Knowledge

Research Question 1 asked what learning outcomes for IOPs would be observed after explicit instruction and interaction requiring their use; specifically, would output practice facilitate explicit knowledge and/or implicit knowledge of IOPs? As detailed in Chapter 1, researchers disagree on the relationship that exists between implicit and explicit knowledge. I chose to explore the veracity of the weak interface position (R. Ellis, 1993, 2008, 2009), which states that explicit knowledge can facilitate implicit knowledge through practice if learners are developmentally ready. Prior to output practice, each learner received an explicit presentation of IOPs. Several studies have provided evidence of a positive effect on L2 grammatical development for explicit instruction followed by output production, (Toth, 2006; Erlam et al., 2009, Muranoi, 2000; De Jong, 2005, 2009). Hulstijn & Graff (1994) proposed several hypotheses regarding the role explicit instruction on explicit and implicit knowledge, which suggest that explicit instruction may be especially helpful for learning complex rules; and may have a greater effect on comprehension over production (p. 105). I hypothesized that explicit instruction followed by oral production would facilitate explicit and implicit knowledge of IOPs, and that there would be greater learning outcomes for explicit over implicit knowledge. On measures of explicit knowledge, supportive evidence was found in the increased PDT scores for IOPs among some learners. Although the timed GJTs showed a similar trend, these results were less consistent, suggesting weaker evidence of implicit learning for most learners in this study.

Discrepancies in Findings and Possible Explanations

Upon comparing results of both tests, I found a few exceptions to the trends just mentioned. As witnessed in Table 4.11 (see Chapter 4), Becky was the only participant who improved on the PDT (23%, 23%, 70%) but not on the GJT (61%, 50%, 38%). There were other instances where participants received 0% on the PDT, but improved on the GJT. For example, Suzie's GJT scores evidenced a mid, low, high pattern (33.33%, 18.75%, and 66.66%); while Ron's scores also decreased before increasing (25%, 13.33%, and 58.83%); and Sky's scores evidenced a low, mid, low pattern (23%, 47% and 28%). Based on these findings, several questions arise in interpreting such discrepancies in testing results. First, why were the results of the GJT so irregular? Second, if results of the GJT were often higher than the PDT, could it be that development of implicit knowledge may precede explicit knowledge in a L2 learning environment? Or, could this be due to a design feature of the GJT? These questions were addressed first by taking into consideration the limitations of the testing measures that assessed implicit knowledge.

Although several researchers have used timed GJTs as measures of implicit knowledge (Toth & Guijarro-Fuentes, 2012; De Jong, 2005; Akakura, 2012, Leung & Williams, 2012), there have been questions regarding the construct validity and reliability of such tests. Because neither GJTs nor any other assessment provide a direct window into L2 learner competence (R. Ellis, 1991), learners' implicit knowledge must be inferred indirectly from their test performance. As R. Ellis (2009) explains, one of the problems in comparing studies of implicit and explicit learning, is that they operationalize and measure these constructs in different ways. Additionally, researchers have noted that it is difficult to be sure that participants will solely rely on implicit knowledge and not make use of explicit knowledge (i.e., use of a rule or memorized pattern) during testing. In order to offset such an influence, it has been suggested that limited response times predispose learners to draw more on implicit knowledge (Loewen, 2009). Another feature of GJTs said to augment the chance to capture of implicit knowledge is in providing learners with dichotomous or multiple choice answers so that the varied responses are limited. R. Ellis considers implicit knowledge to be more systematic than explicit knowledge and, thus believes that it is employed with "greater certainty as to its correctness" (2005, p. 149). As a result, learners are likely to express more confidence in their responses if they rely on implicit knowledge. In my study I did not use confidence-rating scales, but rather provided learners with the option to select "not sure" so that only the most certain responses would count in final results.

The GJTs used to assess development of implicit knowledge in my study included 18 sentences in which IOPs were either used correctly, incorrectly (in form), or were incorrectly omitted with an unspecified noun phrase. Part of the reason that GJT scores involved higher percentages than PDT scores may be that it is easier to respond accurately to something given, as on the GJT task, than it is to deploy something accurately on an open-ended task that allows one to avoid it all together. In other words, on the GJT, learners can guess even if they are not sure, and have a 50% chance of getting it right. Therefore, there is a possibility that the binary-choice design, which was intended to ensure the validity of the test may have contributed to the unanticipated results if some learners were guessing. For instance, the GJTs were solely receptive as participants were required to judge the sentences as correct or incorrect, or indicate that they were not sure. If someone were guessing on the GJT, instead of selecting the unsure option, their scores would most likely be in the 50% range; therefore, scores above the 50% range could suggest that there were higher levels of implicit learning. Based on this possibility, participants' scores close to the 50% range need to be interpreted cautiously as they could be related to guessing.

On the other hand, the PDT used to determine development of explicit knowledge, was production-focused, meaning a participant could not guess to arrive at the correct answer. There is a possibility that a low explicit score could result from learners avoiding the target structure, as well as not having explicit knowledge of it. In other words, a low score for PDT does not necessarily mean low explicit knowledge if someone was simply using alternative structures. In contrast, a high score probably does mean good explicit knowledge. In addition, the scoring system for both tasks did not allow partial explicit knowledge to show up as readily as partial implicit knowledge given that guessing was more likely to produce a positive result on the GJT than on the PDT.

The Relationship Between Explicit and Implicit Knowledge

In reference to claims set forth by the weak interface position, the results of this study did not suggest that explicit knowledge necessarily preceded implicit knowledge. For example, a small portion of learners failed to use IOPs on PDTs, but improved on GJTs, which may suggest gains in receptive knowledge. Since implicit knowledge can be seen as learning apart from explicit awareness, it is possible that some learners improved on the GJT without having gained much explicit knowledge, or at least that instruction-based explicit knowledge of IOPs was not sufficiently engaged by the task to induce accurate use of the structure there (N. Ellis, 1994, 2004). Only one learner (Becky) initiated an episode surrounding the correct form or an IOP and also improved on the PDT to suggest a link between metatalk and gains of explicit knowledge. Because explicit learning is described as a conscious intentional process, where an individual makes and tests hypotheses in a search for structures (Schmidt, 2001; Swain, 1995), the results of the PDT posttests for those learners that did not improve may be related to less production of IOPs during the instructional tasks.

Overall findings for the eight learners in this study appear consistent with conclusions from R. Ellis (2009) in which he states that there is often much clearer evidence of explicit than implicit knowledge. Because scores on the PDT depended on the overt production of well-formed IOPs, the use of the target structure more transparently suggests development of explicit knowledge. As Ellis commented, no study has shown that implicit learning worked better than explicit learning. To illustrate this point, in my study almost half of the improvement on the GJT was minimal (i.e., less than 10%), close to the guessing range, and inconsistent. It may be as De Jong (2005) and Dekeyser (2003) noted, that implicit learning may take more time and is difficult to assess in short term experiments. De Jong stated that "implicit learning is a long process, as it requires processing large numbers of instantiations, probably more than the few hundred in the learning conditions" of her study (2005, p. 229). One possible explanation for higher implicit results among those who demonstrated them concerns Suzie and Sky's involvement in LREs. Although Suzie did not initiate any LREs, she interacted with Becky in 3; and Sky initiated 2 LREs of self-correction. This model of improvement based on interaction with LREs excludes Ron in that he did not interact with any LREs, but was the only learner with low frequency of use and no LREs that improved on the GJT. The source of his improvement is thus unclear.

To summarize, although some research suggests that it is uncommon to have implicit knowledge without explicit knowledge in L2 classroom learning (R. Ellis, 2009), my results do not readily suggest uniformly greater outcomes for either explicit or implicit knowledge. To explain, of the 3 participants that improved on PDT, Karen, Mary and Becky, only Mary and Karen also improved on the GJT. Becky was the only learner who improved on the PDT, and not the GJT. Of the 6 learners that improved on the GJT, only Mary and Karen improved considerably from 56% to 72% and from 38% to 72%

respectively on pretests to posttests; Suzie and Ron improved on the delayed posttest; and Sky and Fred showed minimal improvement on immediate and delayed posttests. Becky only improved on the PDT, not the GJT. Lastly, only Doug did not improve on either test. Therefore, the difference in scores of both the PDT and the GJT were too inconsistent to conclude that post-instructional gains in explicit knowledge corresponded uniformly with gains in implicit knowledge for these learners. Ultimately, my findings agree with Dekeyser (2009), who concluded that explicit knowledge does not necessarily lead quickly to implicit knowledge, but that a high degree of automaticity of use with a target structure most likely evolves slowly in parallel with declarative (explicit) knowledge (p. 126).

As a final point, the fact that several learners' scores increased on the GJT as well as the PDT suggest that explicit instruction can benefit implicit knowledge as well as explicit knowledge (Akakura, 2012), even if it does not always do so. The evidence of learners who did show improvement of the posttests supports a potentially positive role for explicit grammar instruction in L2 learning, particularly for those learners that already have related background knowledge, such as those who more accurately marked subject-verb agreement before learning IOPs. N. Ellis's (2008) claimed that declarative rules can make some features salient, thus allowing learners to notice them and the gap between the input and their existing knowledge. For instance, the learners that improved on both tests (Mary and Karen) had higher scores on the PDT than the GJT. During a conversation with Mary and Karen after the delayed post-test as to what they believed made the difference in their improvement, Mary commented that the explanation at the beginning of the lesson "was so clear", and Karen agreed. It could be that the explicit explanation made IOPs more salient for these two learners allowing them to notice them and reflect on their use during practice. Essentially, my findings corroborate with Muranoi (2000) that explicit grammar instruction followed by interactive tasks plays an important role in helping learners develop L2 grammar knowledge.

Possible Effects of Output on Development of L2 Grammar

Frequency Effects

My findings suggest that frequency of L2 use is a necessary component of theories of language acquisition. To explain, the three learners with the highest number of IOP tokens during paired output tasks also had the highest scores on posttests of the PDT, which may suggest that more output led to greater learning outcomes. It may be that higher frequencies of produced IOPs facilitated explicit knowledge, thus helping learners to organize and guide production. Conversely, the participants that did not improve on the PDT used less than the range of IOPs throughout all activities. Thus, low token frequencies and a lack of improvement on the PDT may suggest a link between low oral production and lower explicit knowledge for those learners. In the simplest sense, these findings concur with Dekeyser’s (1995) experiment using an artificial grammar system, where learners who were taught explicitly about grammar forms and then practiced them were also able to use them on production tests. As N. Ellis (2002) stated, learners attend to the language they are exposed to, adding that practice with such constructions makes perfect (p. 178). In response to N. Ellis’s claims regarding frequency effects, Gass & Mackey (2002) stated that arguments in favor of a frequency-based explanation in L2 learning may be compatible with claims regarding interactional modifications as they are both believed to impact development by facilitating identification of L2 grammatical patterns (p. 251-52).

Evidence for Syntactic Processing

Previous studies on syntactic priming suggested that L2 syntactic forms can serve L2 learners as a formula, which might lead them to produce the form with new lexical items, and ultimately facilitate the acquisition of such structures (McDonough, 2006). Additionally, the repeated production of syntactic structures is believed to aid restructuring of one's syntax through deeper processing (Izumi, 2002). The data of my study show that the learners who completed less controlled activities with higher percentages of correctly produced IOPs had higher scores on the PDT as well as the GJT in most cases. In other words, those who were able to orally produce IOPs in more syntactically challenging activities generally had higher test scores. All of the learners who achieved above 75% in correct use of IOPs (Mary, Karen and Becky) also improved on the PDT. Ron was not included in this finding because his use of IOPs did not accurately reflect the same mix of prepared and free use of IOPs. Specifically, his score (5/5 = 100%) on Activity 2b, the interview, was based on reading questions to his partner; he never answered questions. Gass (2003) noted that productively using a form in one's own way might be more beneficial for development than simply repeating or mimicking that form. In accordance with Gass, my findings suggest that producing prepared IOPs is not sufficient to move learners from semantic to syntactic processing. As the activities became less controlled, several learners omitted IOPs more frequently due to evident difficulties with the target structure. For example, in Activity 2b percentages show a greater difference between successful completion and inadequate performance in the percentage of IOPs produced mostly due to the fact that the interview was the first activity to elicit free use of IOPs. A few learners who evidenced marginal improvement on the GJT (Sky, Suzie, Ron and Fred) used IOPs correctly below 75%. Therefore, a lower percentage of correct IOPs may have been adequate to aid those learners in moving towards deeper receptive knowledge of IOPs as suggested on the GJT, but not in their productive knowledge as they did not improve on the PDT. Following the interview activity, learners completed Activity 3a, an information-gap activity, during which only Karen, Mary and Becky completed the task at 80%, 71% and 100% respectively[11]. In sum, the fact that learners who orally produced IOPs in less controlled activities also produced them on the PDT suggest that these same learners were able to move from semantic to syntactic processing (Swain, 1995, 1998).

The Importance of Meaningful Output

I have mentioned how production of prepared IOPs did not appear to facilitate their development as much compared to free use. In Example 5.1 we examine how data suggests that production without the proper form-meaning connection does not appear to aid L2 grammar acquisition. In Activity 3b, sentence creation, most of the learners were able to produce sentences with accurate IOPs although I questioned how aware learners were of the meaning of their production rather than just repeating after the model provided. For instance, Ron and Sky repeated phrases based on the model that did not reflect the original meaning. Although Ron and Sky used IOPs in their sentences, they used an incorrect verb phrase, "*voy*" (I go/I'm going) instead of "*voy a comprar*" (I'm going to buy) throughout the activity. In this example, they both attached "*le*" as a fixed

[11] Doug's percentage was not included because his score of 100% was based on him reading the model sentence to his partner Fred.

part of the verb "*voy*" (Lines 3, 7, and 8), even though its use in the given context was ungrammatical. As shown in the excerpt below, Sky produced the entire verb phrase with "*le*" (Line 6), but subsequent to Ron's grammatically incorrect sentence, Sky reverted back to the use of "*voy*" instead of "*voy a comprar*". The use of "*le voy*" towards the end of the activity could suggest that they were attempting to repeat a pattern that they had not fully internalized. Although the excerpt was not considered a LRE, since the IOP never came into direct question, it exemplifies the type of task completion prevalent with this group.

Example 5.1

1- R: *A mi amigo*...wait why would it be *voy*? Its *voy* here but its not...

For my friend… I'm going

2- Sk: Is going to buy....Say *va*...

He/she is going

3- R: we will just put *voy* here. *A mi amigo...le voy una camisa*.

…I'm going to a shirt.

4- Sk: *A mi novio*

For my boyfriend

5- R: *para su aniversario*

For his anniversary

6- Sk: *Le voy a comprar un ipod para su...*

I'm going to buy him an ipod for his…

7- R: *A mis profesor favorito...le voy un suéter*.

For my favorite profesor…I'm going to a sweater.

8- Sk: *A mi madre...Le voy una tarjeta para* Dunkin Donuts

For my mother…I'm going to a card for Dunkin Donuts

In their study with syntactic priming, McDonough & Mackey (2008) concluded that learners who produced advanced questions creatively could have moved to more advanced stages of skill acquisition, such as automatizing or fine tuning procedural knowledge, while those who repeated the model might be seen as undergoing practice in preparation for proceduralization of knowledge (p. 44). That Ron and Sky did not improve on the PDT and only minimally on the GJT is also noteworthy in that output without a nuanced meaning of form-meaning connections might have been related to their low scores for explicit and implicit knowledge of IOPs. Meaningful output thus may not only restructure syntax, but also assist in processing form and meaning at a productive rather than receptive level. Thus, output production within meaning focused tasks may strengthen form-meaning connections (Toth, 2006; Erlam et al., 2009).

Background Knowledge of Subject-Verb Agreement

In addition to higher test scores on the PDT for learners with higher frequencies of IOP tokens and higher percentages of correct use, there was also more improvement on both tests for learners with higher scores of subject-verb agreement, which I have been calling "proficiency level". Whereas the mid and low proficiency learners showed little to no improvement on posttests, three out of six high proficiency learners improved on the PDT, showing that only high-level learners improved on development of explicit knowledge. Meanwhile, of the 4 participants that showed more than marginal improvement on the GJT, 3 were high proficiency learners and one was a mid-proficiency learner.

We have mentioned previous studies that have shown that proficiency levels also seemed to impact the amount of negotiation, particularly of grammar-oriented LREs (Williams, 1999, 2001; Lesser, 2004; and Fortune, 2005. In my findings all LREs, including one episode of metatalk, were initiated by high proficiency learners. In addition to producing more LREs, we have also discussed how the learners that produced IOPs more accurately throughout most activities were high proficiency learners. All 3 participants with the highest frequency of IOPs that also improved on the PDT were high proficiency learners. Additionally, it appears that the higher proficiency learners benefited more from working with higher proficiency learners. For instance, Sky and Fred, both high proficiency learners, worked with lower level proficiency learners and only improved minimally on the GJT. These findings corroborate those of Lesser (2004), who suggested that lower level proficiency learners may not be developmentally ready to internalize the information they receive from a higher proficiency partner. In sum, the learners in this study with the highest frequency, the most LREs and the highest test scores were higher proficiency learners. The mid-level proficiency learner had low frequency, no involvement in LREs and minimal improvement on the GJT. The low proficiency learner had the lowest frequency, no involvement in LREs and no improvement on either test.

Evidence of the First Noun Strategy (FNS)

Several studies have suggested that beginning English-speaking learners of L2 Spanish often misinterpret objects as subjects, known as fixed SVO processing, or the First Noun Strategy (VanPatten, 1984; Lee, 1987, 2000; Malovrh, 2006). In Chapter 2, we discussed how Lee & Malovrh (2009, 2010) suggested that IOPs are a late-acquired feature for L2 learners and that stabilization of correct interpretation of OVS phrases appeared only in the most advanced learners. In my study four learners[12] showed evidence of the FNS in a few instances: Karen, Suzie and Sky (high proficiency), and Doug (low proficiency). They all misinterpreted sentences by either giving an incorrect interpretation or in their response to the question.

In Example 5.2 we can observe how Karen misinterpreted this question based on her answer. Although she used the correct IOP, "*me*", the entire sentence indicates that she was the subject and the professor was the indirect object. The expected targeted response would have the professor as the subject and the student as the object.

Example 5.2

M: *¿Te hace muchas preguntas la profesora?*

Does the professor ask you a lot of questions?

K: *Sí, me hago muchas preguntas al profesora*.

Yes, I ask myself a lot of questions to the professor.

Similarly, Example 5.3 exemplifies Suzie's difficulty with correctly interpreting OVS structures. Suzie's answer does not consistently indicate the professor as the subject (Line 3). Instead she wavered between using "*hace"* (he/she asks) and "*hago"* (I ask) until Becky confirmed the use of "*hago"*. In actuality, the use of "*hago*" indicates that the student asked the questions, while the accurate response should have been "*hace"* to agree with "*la profesora"*. As the activities became more syntactically challenging, Suzie seemed to process at a lexical level shown by the reoccurring times she solicited vocabulary meanings from her partner. Furthermore, qualitative data indicated Suzie had

[12]All the misinterpretations resonant of the FNS occurred in Activity 2b. The remaining 4 learners, who did not show misinterpretation of objects as subjects, did not answer the interview questions in complete sentences.

difficulty in creating sentences with a complex structure. For example, in Activity 3a Suzie asked her last question without the entire verb phrase, "*¿Cuándo a Mayín y a Pedro entradas a un drama?*". Mostly, Suzie seemed to ask more questions relating to word meaning and omitted IOPs in several occasions.

Example 5.3

1- B: *¿Te hace muchas preguntas el profesor, la profesora?*

Does the professor ask you a lot of questions?

2- S: No*, no me gusta muchas preguntas. No hace no hago ¿hago?*

No, I don't like a lot of questions. He/she does not ask, I do not ask, I ask?

3- B: *hago*

I ask

Sky's response to the same question from the interview activity in Example 5.3 suggests that she was referring to herself asking questions when she said "*mi no hace*" as a way to express "I don't ask". Given this interpretation, Sky also used incorrect verbal morphology showing the same type of verb form as Suzie in Example 5.4.

Example 5.4

R: *¿Te hace muchas preguntas el profesora, el profesor?*

Does the professor ask you a lot of questions?

Sk: Um *mi no hace mucho preguntas y no me gusta.*

Um me no ask a lot of questions and I don't like it.

In Examples 5.5 and 5.6, Doug misinterpreted the subject and the indirect object in two of the questions from the interview activity, as with Karen, Suzie and Sky, showing signs of the FNS. In Example 5.5 Doug showed difficulty in correctly identifying the subject and Fred gave a correct interpretation of the question. However, in Example 5.6 Fred incorrectly confirmed Doug's misinterpretation. As witnessed with Suzie, Doug and Fred continually asked questions regarding lexical components of the tasks.

Example 5.5

F: *¿Quién te explica la gramática cuando no la comprendes? ¿El profesor o un compañero de clase?*

D: How do I explain? Wait…what's the question? How do I explain?

F: Who explains the gramatic when you don't comprehend, the professor or a friend?

Example 5.6

F: *¿Te hace muchas preguntas la profesora?*

D: Do I ask a lot of questions to the teacher?

F: Yeah

These examples are indeed reminiscent of the notion of 'learnability' in Pienemann's (1998, 2007) description of developmental sequences in L2 acquisition. Of the learners that showed signs of the FNS, only Karen improved on both tests. The patterns that we observed in Examples 5.2 – 5.6 reflect the theoretical view that L2 development occurs in stages, which are defined by a restructuring of the grammar for greater complexity as proficiency increases. My results corroborate the idea that learners who do not appear to adhere to the "s-procedure", by marking agreement between subjects and verbs, are most likely not ready to mark similar affixes with object pronouns. Furthermore, the learners who had between minimal to no improvement on both posttests also demonstrated more focus on lexical processing as the qualitative data showed Suzie, Doug and Fred all inquiring repeatedly about word meaning. Although Fred scored high on subject-verb agreement, he and the others all focused considerably on lexical aspects of the tasks. Data suggest that the learners with more focus on lexical properties than morpho-syntax may not have been be ready to make form-meaning connections for complex grammatical phenomena like IOPs (VanPatten, 2000, 2004; Williams, 2001; Fortune, 2005). In sum, these findings concur with R. Ellis (2004), who mentioned that learners analyzing primarily at a semantic level (i.e. encoding word meanings) might not move to noticing errors.

Since all learners received the same explanation, but did not demonstrate the same results, it is reasonable to say that explicit grammatical explanations of IOPs did not translate directly into development of explicit and/or implicit knowledge for all learners. Learners seemed to benefit most from an explicit explanation of IOPs followed by a sequence of practice that scaffolded them to process syntactic features of the language. The fact that substantial improvement through output production was limited to learners with greater accuracy in Spanish subject-verb agreement suggests that those struggling with attaching affixes to the verb may not be ready to do the same with IOPs. This does not discount output practice as an essential tool in this process, but does support the notion that learners must be developmentally ready for an advanced feature such as IOPs. Learners that showed more lexical processing than syntactic processing of sentences in the transcript analysis also improved only minimally on the GJT. This finding has an important pedagogical implication for foreign language teachers. I suggest that instruction of IOPs for lower proficiency learners center on more receptive knowledge before moving to productive practice following VanPatten's methodology in processing instruction. Also, lexical items should be as familiar as possible for learners so that they can focus more on form than meaning.

Research has suggested that scaffolding through stages of development would be most beneficial when done in the presence of a more experienced learner. Based on some of the qualitative data in my study, the learners that appeared to process the lexicon more than the grammatical structures may have lacked the knowledge to interact with LREs focused on IOPs, let alone initiate one (Lesser, 2004). IOPs require a learner to possess considerable knowledge from previous stages of development (i.e., morphemes of person, number, placement or pronouns etc.), so then it can be difficult for some learners to scaffold each other and offer peer feedback without a certain level of related prior knowledge (Hossein & Tian, 2010). In a similar manner, Toth (2008) found that interaction in small learner groups does not necessarily result in a focus on the target structure as much as teacher-led interaction. Therefore, if no experienced learner is available, or the structure is too complex to allow for peer-scaffolding, a teacher-centered approach may be needed for assistance, especially with mid- and lower-level learners.

LREs and L2 Grammar Development

Since output practice was shown to serve as a positive facilitator of explicit as well as implicit knowledge for many learners in my study, the question is what specific processes are linked to L2 development? Research Question 4 inquired whether LREs facilitate development of IOPs. It was difficult to establish direct links from LREs to improvement on PDTs and GJTs due to the fact that some learners not involved in LREs showed considerable improvement. Conversely, some learners involved in LREs showed minimal improvement. Thus, it appears that although LREs are not essential for development of IOPs, LREs might facilitate L2 grammar development depending on learners' involvement in correcting or negotiating form or meaning. My results also agree with Fortune (2005) that learners who had more focus on form and made more use of metatalk in LREs were also high proficiency learners. The effectiveness of LREs was mostly noted where one member of a group performed better on the PDT, suggesting more explicit knowledge than his/her partner. For example, Suzie had low production of IOPs and a low percentage of correct use, but interacted with her partner Becky in several LREs. Additionally, my results suggest that groups that produced more LREs showed positive L2 development (Lesser, 2004). Interaction with LREs supports the notion that the effectiveness of output goes beyond mere repetition, and that learning through interactive contexts may be more beneficial. It may be as Swain et al. (2002) observed, that learning occurs "in interaction, not as a result of interaction" (p. 173). In sum, LREs accounted for learners' self-correction, other-correction, and metatalk regarding proper form and/or use. In agreement with Long's Interaction Hypothesis (1996), the effectiveness of LREs may involve recycling related items while a problem is resolved, which may increase saliency and the likelihood of being noticed.

Research has suggested that partner interaction can be an effective tool when a group works collaboratively. Although some studies have provided evidence that collaborative scaffolding can help resolve difficulties in encoding language items (Fortune, 2001; Storch, 2001, 2005, 2007), they have also found that not all pairs work collaboratively. In my study only one out of four groups interacted in LREs, which suggests that, in most cases, fewer groups interact in negotiation over form and meaning of L2 grammatical structures during communicative tasks. To illustrate, transcript data indicated that in some instances Fred did not assist Doug in some of his questions and did not build upon Doug's input, which may have led to missed opportunities for negotiating form-meaning connections. These findings support Watanabe & Swain (2007) who found that not all pairs of different proficiency levels necessarily benefit from working with each other, particularly where there is a large gap in proficiency. An analysis of the interaction between Fred and Doug, who had the largest gap in proficiency, revealed that they collaborated very little throughout tasks. These findings offer important pedagogical implications regarding pair work and task design. Although there is no guarantee that collaboration will take place even when tasks appear to offer optimal conditions for collaboration and negotiation, tasks need to promote as much interaction as possible to maximize the possibility for negotiations (Pica, 2005; Swain and Lapkin, 2001).

Contributions of this Study

Through quantitative and qualitative analysis, my study has suggested that explicit instruction followed by guided output production aided in several cognitive processes set forth in Swain's Output Hypothesis (1995, 1998) for the learners in this study. My findings suggest that learners' production of meaningful output in less controlled activities aided them in producing IOPs on posttests of the PDT. The learners who showed signs of fixed SVO processing and a greater focus on semantic processing did not necessarily move on to syntactic processing. Overall, learners who produced higher frequencies of output also had higher scores on the PDT, which implies that output may indeed have gone hand-in-hand with the learning of L2 grammatical structures for several learners. Based on my findings, I propose the following possible implications for output on L2 grammatical structures: (1) output can serve as input back into the learners'

L2 system; (2) the repetition of syntactic structures can serve as models, which can guide future output; (3) output can help make features in the L2 more salient; and (4) output promotes negotiation of form and meaning, which can also facilitate development of L2 grammar. On measures of learning with regards to proficiency levels, learners with greater accuracy in L2 background knowledge of subject-verb agreement outperformed those with less accuracy suggesting that IOPs may be a late-acquired feature. Lastly, although not a necessary factor in L2 grammar learning, LREs seemed to facilitate development of L2 grammar. It is notable that the learner who initiated a LRE of metatalk in the use and form of IOPs also improved on the PDT used to determine development of explicit knowledge of IOPs.

Limitations and Implications for Further Research

My results have suggested that output affects L2 grammar development, still verification of such a claim can benefit from more empirical evidence with more learners, varying proficiency levels, and L2 structures. By detailing the interaction underlying learners' test scores we were able to identify several trends, whose applicability to larger populations can only be confirmed through a larger sample. Further research is needed with partner interaction and varying levels of proficiency to determine what combination of proficiency levels seem to be more conducive to learning particular L2 structures. Of the 4 groups in this study, each had different variables that appeared to affect improvement. For instance, the reason why higher proficiency learners (Sky and Fred) may have benefited less from interaction with lower level learners (Ron and Doug) than those who worked with partners of similar levels of knowledge on subject-verb agreement is unclear. If there were more groups, this trend could be more easily confirmed and explained with greater detail. Concerning partner interaction, data revealed that not all group work is interactive. Although interaction, or collaboration, is one positive aspect to learning (Storch, 2005, 2007; Hossein & Tian, 2010), more research is needed to verify whether partner work will necessarily lead to better learning of complex grammatical structures. Further investigation on how to promote collaboration in partner tasks could help make task performance more effective and lead to more learning opportunities in partner or small group work (Storch, 2007). In addition, more research on the effectiveness of learning in pairs or small groups compared to individual work could provide more conclusive answers.

In reference to proficiency, there was minimal improvement with the mid-level proficiency learner and no improvement with the low-level learner. These learners had difficulty with use of IOPs throughout task completion and on the final tests. Overall, they seemed not to respond to the need for the incorporation of the IOP on the posttests. During the instructional activities, they also appeared to need more assistance with subject-verb morphology, and proper comprehension of sentences with IOPs. These learners may need more practice with receptive tasks before producing target structures. A larger sample of mid and low level learners with IOPs or another syntactically challenging target structure could clarify how to improve pedagogical methods for lower level proficiency learners.

Although this study set out to test how the use of IOPs effects explicit and implicit knowledge, the tools used could only offer a window into the possible effects of effective output practice in the development of such knowledge. The impact of instructional treatment on implicit knowledge results could have been more easily identified with a secondary method of testing. Hans & Ellis (1998) stated that implicit knowledge is easily accessed in tasks that call for fluent language performance. Thus, spontaneous oral production based on a photo prompt might have corroborated the GJT results and confirmed their validity as a measure of implicit knowledge. I recommend that future studies on the effectiveness of output consider its impact on oral production as a matter of L2 grammar development.

Finally, another limitation of this study is the small number of opportunities learners had in oral production. Because accurate implicit knowledge is native-like knowledge, it is unlikely that even a 10-week study with a few hours of output practice could cause an overall restructuring in the syntax of L2 learners. According to N. Ellis (2002), making form-function connections implicitly takes tens of thousands of hours of practice. Remarkably enough, general improvement of the GJT suggests early stages of development of implicit knowledge. Future research on the effectiveness of oral production on implicit knowledge not only requires precise tools for testing, but also more time in practice before any tests are performed.

Conclusion

This study investigated the effectiveness of output practice on the development of explicit and implicit knowledge of IOPs. As we have discussed, the complexity of IOPs make them difficult for L2 learners to establish form-meaning connections. Quantitative and qualitative data suggest that output facilitated development of explicit and implicit knowledge of IOPs by offering learners opportunities to process L2 grammatical structures on a syntactic, rather than semantic level. In other words, rather than just encoding word meaning, learners processed L2 word-order and grammatical structures.

Based on findings, the factor that most seemed to affect these learners' ability to produce output was the level of background knowledge each had regarding subject-verb morphology. For the learners that showed less difficulty in output production, the frequency of tokens, the percentage of correct use, and interaction in LREs seemed to impact development of explicit and implicit knowledge in that order. That learners with less background knowledge of subject-verb agreement improved minimally on posttests suggests that background knowledge of subject-verb morphology can be a relevant factor for learners acquiring IOPs. Therefore, results of my study suggest that development of IOPs require a certain threshold of L2 knowledge of subject-verb agreement, which led me to confirm that developmental readiness may be a positive indicator of L2 grammar development. With regards to interaction in LREs, support from others seemed more important learners who produced less IOPs and with less correct use of IOPs. Not all groups worked collaboratively, but when they did, there was evidence of more negotiation of form in LREs, which may facilitate development of explicit and implicit knowledge. The notion that the quality of interactions matter more for learners with less L2 background knowledge points towards the importance of peer-peer collaborative dialogue as a mediator for L2 learning. Only high proficiency learners initiated and/or interacted in LREs. Thus, it may be that learners could have benefited slightly more from working with same proficiency partners due to opportunities to negotiate form and/or meaning in LREs. This finding supports the idea that learners who interact with one another in task completion may have more effective opportunities to notice gaps in language and draw attention to form and meaning (Kowal & Swain, 1994). To summarize, the following implications regarding LREs can be drawn from my study: (1)

LREs can facilitate knowledge of IOPs; and (2) LREs of metatalk appear to aid development of explicit knowledge.

My original hypothesis proposed that explicit knowledge could facilitate implicit knowledge of IOPs. Support for an interface between explicit instruction and explicit and implicit knowledge was found in my study. My results agree with N. Ellis (2002), who claimed that there are durable effects with explicit instruction when such rules are followed by a number of illustrative exemplars of their application (p. 175). As I found, explicit grammar rules alone did not move learners to greater levels of knowledge of IOPs; however, those engaged in subsequent output practice had higher scores on posttests suggesting greater gains in development of explicit and implicit knowledge of IOPs.

What we see then is that with more background knowledge, certain learners could make more use of the explicit information provided through instruction, and thereby produce the target structure, and in some cases engage in grammar-oriented LREs regarding IOPs. That higher frequency of output led to greater instances of learning for most learners suggest that output does not play an accessory role, but that it can indeed affect L2 grammar development (Erlam et al., 2009; Toth, 2006). Greater production of IOPs and involvement in LREs for certain learners may have made L2 grammar features more salient. Findings indicate that more frequent use and accurate production of IOPs led to greater outcomes, particularly in the development of explicit knowledge. These factors also appear to impact implicit knowledge, though less consistently. Additionally, meaningful production of IOPs, rather than repeating models, seems to aid learners in processing at a deeper level. Therefore, output practice is a crucial element in the transition from receptive to productive knowledge. Conversely, learners who omitted more IOPs or produced more forms incorrectly did not improve on measures of explicit knowledge and only slightly on the assessment of implicit knowledge. Finally, the involvement in LREs, created opportunities for negotiating form and meaning connections, which appeared to facilitate explicit and implicit knowledge of IOPs.

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APPENDIX A: EXPLICIT INSTRUCTION OF IOP & IOPS

Indirect Object Pronouns
What are they and how do we use them?

Review of Direct Objects

- What is a direct object?
  - Receives the action of the verb
    - Ex: Tengo un examen.
      - ¿Qué tengo? – un examen
    - Ex: Leo el periódico.
      - ¿Qué leo? – el periódico
    - Ex: Voy a hacer ejercicio.
      - ¿Qué voy a hacer? – ejercicio

Identify the DO

- Tengo muchos amigos.
- Ellos tienen que comprar mucha comida en el supermercado.
- Nosotros vamos a hacer la tarea esta noche.
- Quiero comprar muchos regalos esta navidad.
- ¿Puedes traer tu libro a la clase?

What are direct object pronouns (DOP)?

- Direct Object Pronouns = replace the direct object
  - Voy a comprar unas botas.
    - ¿Dónde las vas a comprar?
  - Quiero comprar un refresco.
    - ¿Dónde lo quieres comprar?
- You cannot have the direct object and the matching pronoun together.
  - Incorrect: *Los voy a visitar los monumentos.

Practice on DO pronouns

- Answer the question negatively using the direct object pronoun
  - Ex: ¿Lee el periódico Marta por la mañana?
    - No, no lo lee Marta.
  - ¿Necesita comprar pan y leche Juan en el supermercado?
  - ¿Mira su programa favorito Cristina en la televisión todos los fines de semana?
  - ¿Van a cocinar arroz Uds. esta noche?
  - ¿Necesitamos hacer la tarea para mañana?

Indirect objects

- Indirect objects receive the direct object
  - I hit the ball to John.
- Le voy a comprar una camisa a mi hermana.
  - ¿Qué voy a comprar? – *una camisa*
  - ¿A quién? – *a mi Hermana*

Practice w/ IO and DO

- Los señores Rodríguez les dan muchos dulces a los niños el día de la brujas.
- Sus padres les compran muchos regalos a Uds. para su cumpleaños.
- La profesora les va a dar un examen a Uds.
- Don Juan necesita comprarle pan y leche a su abuela.
- María le va a cocinar arroz a su esposo esta noche.

IOP with verbs of communication

- La profesora les hace preguntas a los estudiantes.
- Yo les digo buenas tardes a mis estudiantes cuando entro a la clase.
- Los estudiantes les dicen hola a sus compañeros de clase.
- Su novia le pregunta si pueden ir a cenar.
- Su novio le contesta, “sí”.

Indirect object pronouns

- Unlike Direct Object Pronouns, you must include the Indirect Object to make the sentence grammatically correct.
- Example:
  - Le voy a dar a él $10.00 dólares.
  - Incorrect: *Voy a dar $10.00 dólares a él.

Indirect object pronouns

A mí- me	A nosotros- nos
A ti- te	A vosotros- os
A el/ella/Ud. - le	A ellos/ellas/Uds.- les

Example: (A mí), mi amiga me va a comprar una camisa.
Voy a darte (a ti) $25.00 dólares. / Voy a darles a Uds. un examen.

Answering questions with IOP

- ¿Qué le dices a tu profesora cuando entras a la clase?
  - Yo le digo (a mi profesora), buenas tardes.
- ¿Te hace muchas preguntas la profesora a ti?
  - Sí, la profesora me hace (a mí) muchas preguntas.
- ¿ Te dan tus amigos muchos regalos para la navidad?
  - Sí, mis amigos, me dan (a mí) muchos regalos para la navidad.

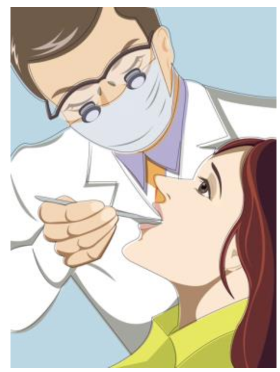
APPENDIX B: MATCHING GAME INSTRUCTIONS (ACTIVITY 1A)

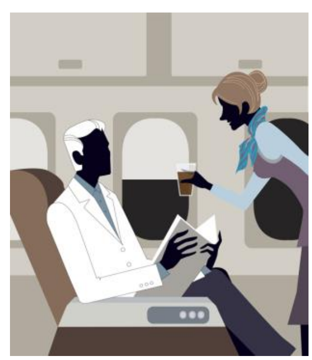
You and your partner have 16 cards (8 pictures, 8 matching sentences).

Make sure each card faces downward. Flip **one** card at a time until you find the matching picture and sentence. Please work together to find the matches.

Once you find a match, place it in a pile. Keep the matches together as you will turn them in to your professor. Please place the sentence on top of the picture.

APPENDIX B: CARDS FOR MATCHING GAME

Le dicen, "mucho gusto"	
Le dice, "abre la boca".	
Le da su boleto.	
Le da una propina.	

Le muestra su pasaporte.	
Le da un regalo a su hija.	
Le da un regalo a su hijo.	
Le sirve una bebida.	

APPENDIX C: *¿QUÉ HACES?* (ACTIVITY 2A)

Parte I

Estudiante 1A

¿Qué haces en estas situaciones?

Ask your partner the following questions. Your partner will respond with an appropriate sentence. Write the sentence that corresponds to the question.

1. ¿Qué le dices a tu amigo si no te visita por un año?

____

2. ¿Qué le dices a tu pareja si dice que está trabajando pero lo/a ves con otra persona en un restaurante elegante?

____

3. ¿Qué le dices al mesero si encuentras a una mosca en tu sopa?

____

4. ¿A quién le preguntas si no sabes cuando es el examen?

____

5. ¿Qué le dices a la profesora si estás enfermo/a y no vas a un examen?

____

6. ¿Qué les dices a tus amigos si los ves en la cafetería?

____

7. ¿Qué dices si conoces a un amigo por primera vez?

____

Parte II **Estudiante 1B**

Your partner will ask you questions. Choose an appropriate response. There will be one to match each question. You do not have to write anything

Le digo, "buenas tardes".

Le pregunto a un compañero de clase si tiene uno extra.

Le digo, "me gustan mucho sus películas".

Digo "aló".

Le digo, "gracias".

Le digo, "no entiendo".

Les invito a mis amigos.

APPENDIX C: *¿QUÉ HACES?* (ACTIVITY 2A)

Parte I

Estudiante 2B

¿Qué haces en estas situaciones?

Ask your partner the following questions. Your partner will respond with an appropriate sentence. Write the sentence that corresponds to the question.

1. ¿A quiénes les invitas a cenar los fines de semana?

____

2. ¿Qué haces si no tienes un bolígrafo en el examen?

____

3. ¿Qué dices cuando contestas el teléfono?

____

4. ¿Qué le dices a una persona cuando te da un regalo para tu cumpleaños?

____

5. ¿Qué le dices a tu actor favorito si lo ves en el centro comercial?

____

6. ¿Qué le dices a la profesora si no entiendes la pregunta?

____

7. ¿Qué le dices a la profesora cuando entras a la clase?

____

Parte II **Estudiante 2A**

Your partner will ask you questions. Choose an appropriate response. There will be one to match each question. You do not have to write anything.

Le digo que es mentiroso/a.

Le pregunto por qué no me visita.

Digo, “mucho gusto”.

Le digo que no puedo comerla y que necesito otra.

Les digo, “Hola ¿qué tal?”

Le digo, “lo siento” y le pregunto si puedo tomar el examen.

Le pregunto a mi compañero de clase.

APPENDIX D: THE INTERVIEW (ACTIVITY 2B)

Entrevista: La clase de español

1. ¿Te asigna mucha tarea el profesor / la profesora? ¿Lees todas las lecturas?
2. ¿Dónde escuchas las actividades auditivas: en tu coche, por Internet, en casa, en el laboratorio de lenguas o en la biblioteca?
3. ¿Quién te explica la gramática cuando no la comprendes, el profesor / la profesora o un compañero / una compañera de clase?
4. ¿A qué hora empieza esta clase? ¿Llegas tarde a clase? Cuando llegas tarde, ¿qué le dices al profesor / a la profesora?
5. Te hace muchas preguntas el profesor / la profesora? ¿Te gusta? ¿Siempre le contestas en español? ¿Piensas en español cuando hablas español?
6. ¿Te gusta la clase de español? ¿Qué cosas *no* te gusta hacer en la clase? ¿Qué cosas te gusta hacer en la clase?

APPENDIX E: *¿QUÉ LE VA A COMPRAR?* (ACTIVITY 3A)

PART I:

¿Qué le va a comprar?
Estudiante 1

Use the following three questions to complete the gift-giving chart:

To find out to whom the gift is for (*a quién*) ask: ¿A quién le va a comprar...?

To find out what the person is going to buy (*qué*) ask: ¿Qué le va a comprar...?

To find out when the gift will be given (*cuándo*) ask: ¿Cuándo le va a comprar...?

Be carfeul because some may be plural. Example: ¿A quiénes les va a comprar...?

Modelo: Estudiante 1- ¿**A quien** le va a comprar Carmen una bicicleta para su cumpleaños?

Estudiante 2- Carmen le va a comprar una bicicleta **a Ernestito** para su cumpleaños.

Persona que va a comprar	**A quién**	**Qué**	**Cuándo**
Carmen		una bicicleta	para su cumpleaños
Roberto	a Carmen	un vestido	para la navidad
Mayin y Pedro	a Luis	un televisor	
Lupe	a Roberto	un suéter	para la navidad
Luis	a Mayin y a Pedro	entradas a un drama	para su aniversario
Ernestito	a Lupe		para su cumpleaños
Tu compañero	a tu mejor amigo	¿?	para su cumpleaños

APPENDIX E: *¿QUÉ LE VA A COMPRAR?* (ACTIVITY 3A)

PART I:

¿Qué le va a comprar? **Estudiante 2**

Use the following three questions to complete the gift-giving chart:

To find out to whom the gift is for (*a quién*) ask: ¿A quién le va a comprar...?

To find out what the person is going to buy (*qué*) ask: ¿Qué le va a comprar...?

To find out when the gift will be given (*cuándo*) ask: ¿Cuándo le va a comprar...?

Be carfeul because some may be plural. Example: ¿A quiénes les va a comprar...?

Modelo: Estudiante 1- ¿**A quien** le va a comprar Carmen una bicicleta para su cumpleaños?

Estudiante 2- Carmen le va a comprar una bicicleta **a Ernestito** para su cumpleaños.

La persona que va a comprar	**A quién**	**Qué**	**Cuándo**
Carmen	a Ernestito	una bicicleta	para su cumpleaños
Roberto	a Carmen		para la navidad
Mayin y Pedro	a Luis	un televisor	para su cumpleaños
Lupe		un suéter	para la navidad
Luis	a Mayin y a Pedro	entradas a un drama	
Ernestito	a Lupe	unos calcetines	para su cumpleaños
Tu compañero	¿?	Una camisa	para su cumpleaños

APPENDIX F: INDIVIDUAL SENTENCES (ACTIVITY 3B)

PART II:

Now tell your partner what you plan to buy these people following the model. You must select a different item from each category or choose something original. Mix and match so they are logical.

Modelo: <u>A mi amiga</u> le voy a comprar **un suéter** *para la navidad.*

<u>A quién</u>	**Qué**	*Cuándo*
A mi amigo/a A mis profesor/a favorito/a A mi(s) hermano/a(s) A mi madre/padre A mi novio/a ¿?	Una camisa Un suéter Unos chocolates Un televisor Una tarjeta para "*starbucks*" ¿?	Para su aniversario Para su cumpleaños Para la Navidad/Januká Para el día de los enamorados Para el día de las madres/los padres ¿?

APPENDIX F: INDIVIDUAL SENTENCES (ACTIVITY 3B)

PART II:

Now tell your partner what you plan to buy these people following the model. You must select a different item from each category or choose something original. Mix and match so they are logical.

Modelo: A mi amiga le voy a comprar **un suéter** *para la navidad.*

A quién	**Qué**	*Cuándo*
A mi amigo/a	Unos calcetines	Para su aniversario
A mi profesor/a favorito/a	Un suéter	Para su cumpleaños
A mi hermano/a	Unas flores	Para la Navidad/Januká
A mi madre/padre	Un ipod	Para el día de los enamorados
A mi novio/a	Una tarjeta para "*Dunkin Donuts*"	Para el día de las madres/los padres
¿?	¿?	¿?

APPENDIX G: STORY RECONSTRUCTIONS (ACTIVITY 3C)

Narrations

Please read the story twice and put it away. Then, with your partner write the story to have it as close to the original as possible.

Story 1

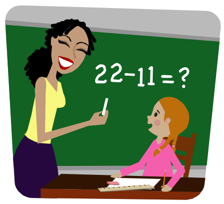
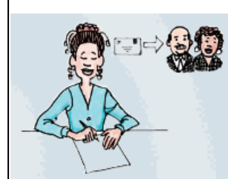
María es una estudiante en la universidad ella trabaja en el centro comercial. Ella siempre compra muchas cosas, pero para la Navidad ella le va a comprar muchas cosas a su familia. Le va a comprar una blusa a su madre. Les va a comprar unas camisas a sus hermanas. Finalmente, va a comprarle un suéter a su papa.

Please read the story twice and put it away. Then, with your partner write the story to have it as close to the original as possible.

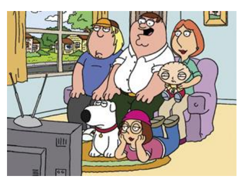
Story 2

Juan es el novio de Maribel. Juan es muy inteligente y simpático, pero no habla mucho. Cuando Maribel le hace preguntas, él le responde con una palabra. Cuando Maribel le manda mensajes de texto, el sólo le contesta "LOL". Maribel dice que hablar con Juan es como hablar sola ☹

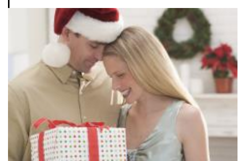
PPENDIX H: PDT VERSION A (1/2)

 Enseñar / matemáticas	 Ducharse / en el baño	 Dar / flores	 Bailar / en la discoteca
 Comer / palomitas	 Dar / un beso	 Dibujar / en su casa	 Escribir / una carta

APPENDIX H: PDT VERSION A (2/2)

 Servir / sopa	 Comprar / fruta	 Leer / un cuento	 Caminar / a la escuela
 Hacer / una pregunta	 Mirar / televisión	 Hacer / preguntas	 Leer / el periódico

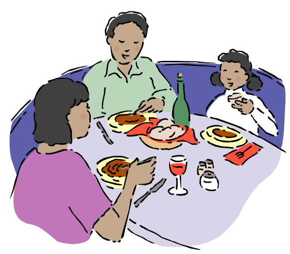
APPENDIX I: PDT VERSION B (1/2)

 Enseñar / gramática	 Cepillarse / los dientes	 Dar / un regalo	 Bailar / en la fiesta
 Beber / agua	 Dar / un beso	 Dibujar / en su dormitorio	 Escribir / un mensaje

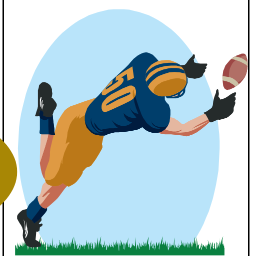
APPENDIX I: PDT VERSION B (2/2)

 Servir / café	 Cantar / una canción	 Leer / una historia	 Jugar / al videojuego
 Hacer / una pregunta	 Hacer / la tarea	 Decir / adiós	 Dormir / en el sofá

APPENDIX J: PDT VERSION C (1 OF 2)

 Enseñar / inglés	 Bañarse / en el baño	 Dar / un regalo	 Sacar / fotos
 Correr / en el parque	 Dar / un beso	 Cenar / su familia	 Mandar / un mensaje de texto

APPENDIX J: PDT VERSION C (2/2)

 Servir / una bebida	 Comprar / fruta	 Leer / un libro	 Jugar / al fútbol americano
 Contestar / sí	 Comprar / ropa	 Decir / buenos días	 Dormir

APPENDIX K: ANSWER SHEET FOR TIMED GJT

You will be shown a total of 30 sentences. You will have 5 seconds to decide if the sentence is grammatically correct in Spanish.

After you read the sentence, immediately mark:

C- Correct, I- Incorrect, N-Not sure

None of the errors are due to spelling or accent mistakes. Please focus on the grammar of the sentence.

1. _______	16. _______
2. _______	17. _______
3. _______	18. _______
4. _______	19. _______
5. _______	20. _______
6. _______	21. _______
7. _______	22. _______
8. _______	23. _______
9. _______	24. _______
10. _______	25. _______
11. _______	26. _______
12. _______	27. _______
13. _______	28. _______
14. _______	29. _______
15. _______	30. _______

APPENDIX L: TIMED GJT VERSION A

1. Yo está en la clase de español.
2. Me despierto tarde los fines de semana.
3. La profesora nos da mucha tarea a nosotros.
4. Los estudiantes les dicen, “no sé” a la profesora.
5. Tú estudia en la biblioteca todos los martes.
6. Él te da muchos dulces a ti.
7. El chico pregunta a Ud. si quiere salir a comer.
8. Los hombres comen muchos tacos.
9. Voy a comprarles unas camisas a mis amigas.
10. Digo, “¡adiós!” a ella cuando salgo de la casa.
11. Debo bañarme después de corro.
12. Mis padres quieren comprarme muchos regalos.
13. La profesora explica la actividad ellas.
14. Salgo con mis amigos los fines de semana.
15. Los estudiantes le contestan a la profesora.
16. Mañana yo va a hacer ejercicio.
17. Les hacen muchas preguntas a la instructora.
18. La profesora les explica la gramática a los estudiantes.
19. Mis amigos y yo vamos de compras.
20. Mi novio quiere comprar un vestido nuevo a mí.
21. Les digo, “¡hola!” a mis amigos cuando entro a la clase.
22. Las artistas es guapa.
23. Me compro mucha comida a mi perro.
24. Les pregunto si quieren ir al cine.
25. Tú tienes 21 años y él tiene 20.
26. Nos damos muchos exámenes los profesores.
27. Los niños le dicen, “no” a su papá.
28. Nos acuesta a las diez de la noche.
29. A nosotros, el instructor da muchas actividades.
30. Tú comes en la cafetería todos los lunes.

APPENDIX M: TIMED GJT VERSION B

1. Yo sale con mis amigos los fines de semana.
2. Me despierto tarde los fines de semana.
3. El profesor nos da muchos exámenes a nosotros.
4. Los niños les dicen, “no” a su papá.
5. Tú come en la pizzería todos los lunes.
6. Ella te da un regalo a ti.
7. Pregunto a él si quiere ir al cine.
8. Las chicas bailan en la fiesta.
9. Voy a comprarles la cena a Uds.
10. Digo, “¡hola!” a ellos cuando entro a la clase.
11. Voy antes de hago la tarea.
12. Mi hermano quiere comprarme un televisor.
13. La profesora explica la gramática a ellos.
14. Hago mi tarea todos los días.
15. Los estudiantes le hacen preguntas a la profesora.
16. Pedro y sus amigos vamos al cine.
17. Les contestan a la profesora.
18. La profesora les enseña la gramática a los estudiantes.
19. Tú y yo vamos a comer en un restaurante.
20. Mis padres compran muchos regalos a mí.
21. Les digo, “¿qué tal?” a mis amigos cuando los llamo.
22. Las mujer habla mucho.
23. Me voy a comprar unas camisas a mis amigas.
24. Me preguntan si quiero salir a bailar.
25. Tenemos muchos amigos en México.
26. Nos damos muchos dulces a mis amigos.
27. Los estudiantes le dicen, “no comprendo” al profesor.
28. Se ducho a las 8 de la mañana.
29. La profesora da mucha tarea a nosotros.
30. Tú bailas en la discoteca los viernes.

APPENDIX N: TIMED GJT VERSION C

1. Yo hace mi tarea todos los días.
2. Me acuesto a las once todos los días.
3. El instructor nos da muchas actividades a nosotros.
4. Los estudiantes les dicen, “no comprendo” al profesor.
5. Tú baila en la discoteca todos los viernes.
6. Él te da muchos regalos a ti.
7. Él pregunta a ella si quiere salir a bailar.
8. Ellos hacen ejercicio los lunes.
9. Voy a comprarles a mis perros mucha comida.
10. Digo, “¿qué tal?” a ellos cuando los llamo.
11. Duermo después de como mucho.
12. Mi novio quiere comprarme un vestido nuevo.
13. La instructora enseña la gramática a ellos
14. Estoy en la clase de español.
15. Le hago muchas preguntas a mi abuela.
16. Yo va al cine el próximo viernes.
17. Les hacen preguntas a la profesora.
18. La instructora les explica el ejercicio a ellos.
19. Mi esposo y yo vamos a celebrar nuestro aniversario.
20. Mi hermano va a comprar un televisor a mí.
21. Le digo, “¡adiós!” a mi compañera cuando salgo de la casa.
22. Los chico desayuna pan.
23. Me compro la comida para la cena a mi madre.
24. Los turistas le preguntan si quieren ir.
25. Tenemos que limpiar la casa.
26. Nos damos muchos regalos a mis amigos.
27. Los estudiantes le dicen, “no sé” a la profesora.
28. Se levantas temprano los fines de semana.
29. El profesor da muchos exámenes a nosotros.
30. Tú estudias en la biblioteca los martes.