

**IMPLICATIONS OF AN
INDUCTIVE VERSUS DEDUCTIVE APPROACH
TO SLA GRAMMAR INSTRUCTION**

by

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ABSTRACT

While there is generally great interest in how languages are learned in the modern classroom, the question arises as to what type of grammar instruction is most effective. This study examines the outcome of a deductive versus an inductive lesson teaching direct object pronouns in Spanish to 44 college-aged participants in two separate intermediate classes. The two groups of students were exposed to the opposing methods of instruction, then evaluated on their level of acquisition of the grammar structure in question using identical assessment measures. Feedback was solicited from the students following the lesson. The results of the study indicate that there was a slightly higher level of achievement as well as a higher level of satisfaction in the group exposed to the inductive lesson in comparison to the group exposed to the deductive lesson. Although this difference was not found to be statistically significant, it suggests that the inductive approach may have a more positive effect on learners than the traditional deductive approach.

Chapter 1

REVIEW OF RELATED LITERATURE

Introduction

The controversy over methods of teaching grammar has developed in the recent past, but the question remains as to the relative effectiveness of different approaches. Since the twentieth century, the field of Second Language Acquisition (SLA) has evolved considerably due to research into applied linguistics (Laffort, 2000). According to Barbara Laffort, the recent changes in trends can be attributed to some general factors: the creation of theories and themes in SLA, developing psychology concerning how language is learned, the formation of new concepts based on linguistic theories, the unveiling of studies defending or rejecting language learning conceptions, and the maturing of methods and sources of the data collection. Developing research in applied linguistics not only leads researchers to theoretical questions and conclusions, but can also assist teachers and students (Laffort, 722).

Early theories on grammar instruction supported the grammar-translation approach which concentrated on grammar skills and was commonly used to teach Latin and Greek (Terrell, 1991). In the early 20th century, a behaviorist perspective to language learning emerged that viewed language as a stimulus-response (S-R) chain. Terrell describes how the audio-lingual method moved towards imitation of input and

drilling as opposed to talking about the target grammar rules. With this approach came an emphasis on error-free speech. Robert Lado elaborated on this idea by proposing that errors could be predicted using Contrastive Analysis between aspects of the learner's L1 (first language) and L2 (second language) (Laffort, 2000). The direction of research into SLA further evolved with Steven Krashen's Monitor Hypothesis in which he pointed out that explicitly focusing on grammar structures is unnecessary in the acquisition of an L2 (Terrell, 1991). Krashen's model spurred a movement towards more input-based grammar teaching as opposed to explanation of grammar rules. This trend is supported by research into Chomsky's theory of Universal Grammar (UG), information-processing theories, and skill-learning theories (Ellis, 1999).

Valuable information collected in recent years by SLA researchers can be applied to the classroom and has the power to improve and enhance instruction. A second language educator can benefit greatly by applying current research developments in the areas of grammar education to the classroom and examining the effects and consequences of the approach on the students' acquisition of language. The current study will take input-based grammar teaching a step further and investigate opposing perspectives on grammar input. The study will isolate one grammar structure, direct object pronouns, and explore how using an inductive approach facilitates, obstructs or has no effect on the acquisition of this structure.

Definitions

The current study will explore the deductive and inductive approaches to explicit grammar instruction in comparison to one another. Jan H. Hulstijn describes the distinction between explicit and implicit grammar instruction and states that “instruction is explicit or implicit when learners do or do not receive information concerning rules underlying the input, respectively” (2005). Norris and Ortega described explicitness as a spectrum which ranges from instruction which is more explicit to that which is less explicit (2000). One form of what Norris and Ortega might see as less explicit instruction is inductive explicit instruction where the students focus on a grammar structure presented in context and formulate the patterns involved (Shaffer 1989).

Generally, the inductive and deductive opposition is used when discussing explicit instruction as applied to an instructional context. Deductive instruction occurs when the instructor presents a grammar rule before showing the structure in its natural setting or within target language examples. Contrastingly, inductive instruction occurs when the students see the structure embedded in instances where it is naturally used, which later leads to an explicit definition of the grammar rule (Hulstijn, 2005). In the inductive approach, learners attend to the grammar structures and attempt to determine the rules based on inference and observation. Norris and Ortega described this process as arriving at Metalinguistic Generalizations (Norris and Ortega, 2000, Erlam, 2003).

Research in Implicit versus Explicit Instruction

The seed of the grammar instruction debate can be traced to the year 1981 with Stephen Krashen's theory of the distinction between L2 learning and acquisition (Nassaji & Fotos, 2004). In his "Monitor Model", Krashen hypothesizes that learning and acquiring are "two distinct and independent ways of developing competence in a second language" (Omaggio Hadley, 2001). Researchers elaborated on this theory by comparing first and second language development and hypothesized that if the acquisition of the L1 does not require formal grammar instruction, neither should that of an L2 (Schwartz, 1993, Dekeyser, 1994). In the context of SLA, some researchers have concluded that if L2 learners can access and apply the same mental processes as that of an L1 learner, then L2 language acquisition should result through meaningful input and interaction (Schwartz, 1993, Nassaji & Fotos, 2004).

While there is considerable theory and evidence that suggests that formal grammar instruction is unnecessary in order to achieve acquisition of an L2, more recent research supports a contradictory viewpoint. Richard Schmidt elaborated on the importance of focusing a learner's attention on form, a prominent aspect in an explicit grammar lesson (2001). The concept he refers to as "noticing" suggests that conscious attention to form is an essential condition in SLA. Manfred Pienemann also recognized the value of explicit grammar instruction and suggested that some structures do benefit from instruction (Pienemann, 1988). In her study examining grammar instruction, Merrill Swain collected data from French immersion programs

showing that some explicit focus on grammar is necessary to achieve accurate grammatical competency (1985). Also defending the importance of explicit instruction, Norris and Ortega published an article which examined the effectiveness of L2 teaching in 49 studies (2000). The results of their study suggested that explicit instruction results in more successful learning of target structures compared to implicit instruction. Norris and Ortega also point out that there is a need for systematic exploration of subtypes of explicit L2 instruction, posing the question as to which variations of explicit approaches achieve the highest levels of acquisition of grammar structures.

Research in Inductive versus Deductive Instruction

As previously stated, both the inductive and the deductive approach are examples of explicit instruction (Norris & Ortega, 2000; Erlam, 2003; Hulstijn, 2005); however, the inductive approach to instruction has advanced differently throughout past studies creating different variations on the same concept. For instance, Herbert Seliger conducted a study in which the instructor presented the grammar rule at the end of the lesson (1975). In other studies, the students were instructed to identify the rule on their own following the lesson (Robinson, 1996; Rosa & O'Neill, 1999; Shaffer, 1989). Furthermore, there have been variations in which students were exposed to instances of the target structure embedded in a context which did not point out the rule nor require that the students look for any sort of pattern (Abraham, 1985; Herron & Tomasello, 1992; Erlam, 2003). The conclusions of the aforementioned

studies display mixed results with some proposing that the inductive approach may be more advantageous than the deductive approach (Herron & Tomasello, 1992), others suggesting that the deductive approach is more successful (Robinson, 1996; Seliger, 1975), and the remainder making no distinction between the two approaches (Abraham, 1985; Rosa and O'Neill, 1999; Shaffer, 1989). Due to these conflicting results, it is impossible at this point to make a definitive statement validating or nullifying the use of any of the varieties of the inductive approach.

The Targeted Grammatical Structure

A major shortcoming of previous studies into the inductive versus deductive opposition is that the majority of studies have failed to isolate one particular structure when evaluating the type of instruction. Rosemary Erlam points out that many studies preceding hers “targeted more than one structure”, with the exception of a study executed by Peter Robinson examining the relationship between the type of instruction and the grammatical structure (Erlam, 2003, Robinson, 1996). Erlam herself conducted research focusing on one solitary grammatical structure, the French direct object pronoun. She explained that she chose this particular form as the focal point of her study because it is difficult for English-speaking learners of French to acquire due to the negative transfer from the learners’ L1 to the L2 in both form and distribution.

The specifications of the object pronoun in Spanish could further explain why English-speaking learners of Spanish find the structure problematic. In his study, Ronald Quirk explored the personal pronouns in Spanish and described some of the

characteristics of the grammar form (Quirk, 2002). He explained that pronouns are objects or particles used to replace or modify nouns in a sentence. For instance, in the English sentence “I hit the table”, “the table” can be replaced by the pronoun “it” to read “I hit it.” In Spanish, all object pronouns (direct and indirect) function semantically in the same way, that is, they replace the alluded noun. However, from a syntactic point of view, Spanish pronouns work contrary to English as they are typically placed before the verb (*yo la golpeo*, as opposed to *I hit it*).

As previously indicated, one of the areas in which the direct object pronoun poses a problem for learners of Spanish is pronominal reference assignment (i.e., determining the appropriate gender and number of the pronoun) (Lee, 1987). In his study, James F. Lee investigated ways in which learners of Spanish assign pronominal reference in situations where there are multiple possible antecedents. Because noun replacement is necessary in order to avoid repetition, pronouns are considered anaphors. The referent of an anaphor is determined by its antecedent, in this case, the noun it is replacing. Lee explored different ways in which learners assign gender, number and case when processing the language, and whether or not they are able to correctly filter syntactic information. Results of his study showed that while the students were able to process a significant number of the sentences as Subject-Verb-Object, sentences that utilized nouns with different genders did not contribute to SVO processing. For instance, in the study the students were able to correctly assign reference in the following sentence:

“Cada noche, Elena va a la biblioteca con la lección de geografía y la lee.”

(Every night, Elena goes to the library with the geography lesson and reads it.)

This sentence contains only singular feminine nouns (*noche, biblioteca, lección, geografía*) and therefore contributes more to SVO processing. On items with different-gender nouns, the students had more difficulty and many were unable to assign reference:

“Teresa piensa ir al laboratorio de lenguas con el trabajo de español porque lo entrega mañana.” (Teresa is thinking about going to the language laboratory with the Spanish assignment because she turns it in tomorrow.)

In this case, the feminine name “Teresa” interfered with the masculine direct object “el trabajo de español”. The outcome of Lee’s study explains that in sentences constructed of complex structures with varying gender and number, determining the appropriate direct object pronoun referent can be challenging for students.

Another problem area for Spanish students with regards to direct object pronouns is syntactic placement. Quirk (2002) explained that object pronouns are “clitics”, meaning they “must be used with another word; in this case, with a verb.” He went on to describe that pronominal clitics in Spanish can come before the verb (“proclitics”) or after (“enclitics”). Pronominal clitics are determined by the condition of the verb. The pronoun follows verb in the infinitive, gerund, and affirmative command forms. For example, the following sentence contains a regular conjugated verb in the preterite tense and therefore, the pronoun takes the proclitic syntactic placement:

Ella lo vio en el cielo. (She saw it in the sky.)

Contrastingly, the following example shows a sentence with an enclitic pronoun placement:

Ella está viéndolo en el cielo. (She is looking at it in the sky.)

While the placement of the direct object pronoun in Spanish depends on the form of the verb it works with, the structure has only one syntactic position in English.

Enclisis, or postposition, is described by Carlos Otero as a practice that “increased substantially during the Romantic period” (Otero, 1975). Nonetheless, the varying positions are used in modern Spanish language, and for second language learners they present a very challenging topic.

L1 Influences on L2

The present investigation focuses on the Spanish direct object pronoun as it has been proven to cause confusion for language learners (Erlam, 2003) due to its negative transfer from English to Spanish in both morphology and syntax (VanPatten, 1987).

Dr. Robert Lado’s Contrastive Analysis (CA) Theory suggested that educators should focus their instruction on structures which are negatively transferred from the learner’s L1, or structures which differ in either syntactic, morphological, or semantic ways from L1 to L2, in order to avoid associated errors (Saville-Troike, 2006).

Nevertheless, it has long since been questioned whether focusing on the avoidance of errors is the right perspective to take. Dulay and Burt (1974) hypothesize that L2 learning duplicates the L1 acquisition with transfer playing a minimal role. Gundel, Stenson, and Tarone (1984) reexamined the use of transfer and determined that when

all natural languages are linguistically similar, L1-L2 facilitation is guaranteed. Therefore, focusing on a negatively transferred structure in this study could decrease the possibility that learners will apply knowledge their L1 and acquire the structure autonomously. Additionally, utilizing the Spanish direct object pronoun provides an opportunity for researchers to compare different approaches of instruction under a condition where some form of formal instruction is believed to be necessary (Saville-Troike, 2006).

Summary

Whereas formal instruction of negatively transferred grammar structures has an important place in the classroom, it remains an important question as to the most efficient and effective way to present information to students in order to facilitate their acquisition of the language forms. Past studies have explored different methods of instruction and utilized different techniques, some of which have proved to be beneficial and others detrimental. This study will isolate the variable of instruction in order to evaluate how the students respond to the lessons in comparison to one another. The results of the current study will benefit both language instructors and students by providing information about the relative effectiveness of different approaches to grammar education and by offering recommendations as to which technique may most usefully be applied in the classroom to enhance the success of their instruction.

Chapter 2

THE PRESENT STUDY

The current study utilizes quantitative research methods to explore the implications of the explicit grammar process by comparing success rates among students learning direct object pronouns inductively versus those learning deductively. The method of instruction is the dependent variable in the study. The difference in performance rates among the students in the two groups in comparison to one another is expected to provide valuable insight into the outcome and effects of inductive versus deductive grammar instruction.

Methods and Procedures

Forty-four consenting college-aged students enrolled in the SPAN106 intermediate Spanish course at the University of Delaware were used as subjects for this study (see appendix A). In order to test which approach to grammar instruction was more effective, the students were divided into two groups, 20 students in the control group and 24 in the experimental group. The groups consisted of students originating from a wide range of personal and educational backgrounds, and each student was assigned a random identification number in order to maintain anonymity throughout the study. Each group experienced a 50-minute instructional period

administered by the same instructor. The instructional objectives and the materials used following the instructional periods were identical for both groups.

The objectives for both the experimental and control lessons were as follows:

1. Students will be able to identify the direct object in a sentence.
2. Students will be able to concisely respond to a binary response question pertaining to direct object pronouns.
3. Students will be able to determine which item a direct object pronoun is referring to.
4. Students will be able to replace a noun with its appropriate direct object pronoun.
5. Students will be able to distinguish correct sentence placement of a direct object pronoun from incorrect sentence placement.
6. Students will be able to organize a sentence with a direct object pronoun using correct word order.
7. Students will be able to reflect on their personal learning.

Prior to the lesson, a survey was used to gather the students' biographical information and previous knowledge and experience with language learning (see appendix B). Following the survey, the instructor administered a preliminary assessment in order to collect data to more accurately evaluate the comparability between the two groups. On the day of instruction, the control group began by learning about the grammatical structure in a deductive fashion as the handout highlighted relevant rules, patterns, and exceptions (see appendix D). The teacher

presented and explained the rules involved and pointed out the examples that showcased the structure. The group then completed a series of activities to reinforce the instruction (see appendix F). The control lesson concluded with a formative assessment to evaluate the students' level of acquisition following the input and reinforcement of skills (see appendix H). The lesson ended with a student feedback survey to elicit feedback from the test subjects (see appendix J).

Contrastingly, the experimental group began their lesson by examining a short dialogue as a class (see appendix E). The reading displayed direct object pronouns in their natural setting and called attention to the structure using bold lettering. Without indicating any specific rule or condition, the teacher generated a discussion about the situation discussed in the paragraph based on inferences from the pictures and title. The instructor then led the class in a careful reading of the passage using corresponding pictures to increase saliency and keep the focus on meaning. Finally, three volunteers acted out the scene for the class. The students were allowed the opportunity to induce the rules related to the construction and placement of the grammar structure on their own in order to complete follow-up activities to the lesson. At the end of the instructional period, the students were asked to infer the rule and answer questions about how and why they used direct object pronouns. They then completed a set of activities, a formative assessment, and a student feedback survey all identical to those used in the control group (see appendices F, H, and J).

Data Collection Instruments

The student survey included both closed and open-ended questions used to measure the learners' personal characteristics, biological traits, and educational history such as previous background and exposure to Spanish (see appendix B). This information served as a descriptive report of the two groups analyzed. The survey also provided continuous variables such as age and gender to be analyzed for further discussion topics. In order to gather more information about the Spanish proficiency level of the students, they were administered a diagnostic examination in order to assess the level of mastery of a grammar topic previously studied in the course, the construction "hacer + que" (see appendix C). This topic was selected because it was the topic immediately preceding the direct object pronouns in the syllabus of the course and because the syntactic processes involved are similar to those involved in the construction of the direct object pronoun.

Following the preliminary data collection, the control instructional lesson began with a self-driven input worksheet. The control group received a handout in English describing the direct object pronoun similar to a text book description (see appendix D). The handout pointed out patterns of direct object pronoun usage, outlined exceptions to the rules, and provided examples of the structure in order to display its uses and placement in the target language sentence. The instruction was mostly student-centered with the student reading the worksheet while the teacher emphasized key elements of the structure. The format of the lesson was focused on an explanation of the grammar structure. In contrast, the experimental group received a

handout following a different format from that of the control group. This handout consisted of a conversation between three people and a series of pictures to reinforce the focus on meaning (see appendix E). The passage utilized natural language and placed the grammar structure in a cultural context showcasing the direct object pronoun in its natural setting. The dialogue utilized a wide variety of examples of the structure and used bold lettering to draw special attention to them. The class worked together to extract the meaning of the passage without paying explicit attention to form. Upon the second reading, the teacher solicited three students to act out the dialogue using props to further bind the vocabulary words to their meaning.

Both sets of students completed identical reinforcement activities (see appendix F). The activities were culturally connected, had contextual consistency, and required students to work with the grammar structure in a variety of ways. The first activity practiced skills related to pronoun reference assignment. In this activity, students used the options in parentheses to complete a cloze paragraph with the appropriate direct object pronoun according to the context of the paragraph. Some of the spaces targeted a number distinction while others targeted a gender distinction. The second exercise elicited the student's oral comprehension skills by having them listen to a mini-dialogue and decide which one of the three responses provided was not a logical response to the question. Finally, the last activity required the students to answer questions by replacing the noun in the question with its corresponding pronoun. Both exercises B and C practiced skills related to distinguishing proclitic versus enclitic syntactic placement.

As a follow-up to the lesson, the students were assessed on their acquisition of the direct object pronoun. The assessment tool was highly contextualized and consistent with the content of the reinforcement activities, though slightly different in format (see appendix H). In the first section of the assessment, the students heard a series of statements. They then identified the gender and number of the pronoun by determining to which item it referred. The following activity required students to choose the correct response to a question. This assessed their ability to determine correct syntactic placement of the direct object pronoun according to the condition of the verb in the sentence. Lastly, the students applied their understanding of both pronominal reference assignment and syntactic placement by completing sentences from a single phrase question and information in parentheses following the question.

Finally, the students had a chance to provide feedback as far as the method of instruction they experienced. The instructor administered a student feedback survey which asked a series of questions to generate the students' opinions and perspectives (see appendix J). The survey asked how effective the students found the lesson and materials and how prepared they felt following instruction. It included an open-ended section offering an opportunity for students to discuss what parts of the lesson they found most and least helpful and what changes in the lesson would make it more effective. Results of the survey provided valuable connections that helped to explain the conclusions of the study provided by the analysis of the data collected.

Chapter 3

RESULTS OF THE DATA ANALYSIS

Baseline Similarities

In order to show the comparability between the two groups, a preliminary survey was administered to both groups (see appendix B). The results showed that the two sample groups were similar in a variety of ways. As displayed in table 1, with regards to their previous exposure to Spanish, 75% of the participants in each group were first exposed to Spanish by taking a class. The remaining 25% of the students in each group reported being first exposed to Spanish by either living in a multilingual household or community, having a Spanish-speaking friend or coworker, or in an alternative way. The groups were also similar in the amount of cumulative time they had spent in Spanish-speaking countries. More than 80% of the participants in each group reported having spent less than 2 weeks in Spanish-speaking countries. Furthermore, this researcher observed that the students in each group reported a fairly even dispersal of the percentage of time that Spanish was spoken in their previous classes. The majority of the members of each group reported that Spanish was spoken in their previous classes about 50% of the time. Additionally, both groups said they experienced similar activities in previous language classes. A similar amount of the students in both groups participated in group activities, watched videos, learned and

practiced rhymes, explored art, music, and/or dance, discussed and described pictures, read poems, plays, and/or stories, and had experiences outside of the classroom.

Baseline Differences

While the two groups proved to be similar in many ways, some slight differences were observed. As displayed in table 1, a slight difference in age and gender was observed between the two groups, though the difference was not statistically significant. There was one significant difference and one nearly significant difference between the groups on the baseline survey on items regarding their previous exposure to Spanish. While 83% of the experimental group reported having previously participated in group projects, only 45% of the control group reported this exposure. With a p-value of .008, this is a statistically significant difference. Additionally, around 17% of the experimental group in comparison to 40% of the control group claimed to have experienced interactions with native speakers. This difference is only nearly significant ($p=.084$). Nevertheless, the results of the study should be considered in the context of these significant and non-significant group differences.

Other differences between the groups were noted in the baseline assessment. Also reported in table 1, an overall baseline assessment score was calculated from the results of the preliminary assessment in order to further verify the comparability between the two samples. The scores were calculated as the total number of points earned over the total possible points. For each of the four items, the students received

a score between zero and two, zero being completely wrong and two being completely correct based on syntactic placement of the grammar structure. The score variable was calculated as the sum of all of the points earned on the questions divided by the total number of points possible, or the average score across all variables. The total possible number of points earned on the preliminary assessment was eight. The average baseline score in the experimental group was $.76 \pm .2$ (mean \pm standard deviation) compared to $.65 \pm .3$ in the control group. A Chi-squared test showed that the difference between the groups was not significant, but it was worth noting that the experimental group scored approximately .11 points better on the preliminary assessment. This difference was controlled for later in the data analysis.

Trends in the Final Assessment

Following the inductive and deductive lessons in the experimental and control groups respectively, both groups were administered a final assessment in order to evaluate their acquisition of the grammar structure up to that point. As displayed in table 2, the results of the final assessment favored the experimental group. In most cases, the experimental group received an equal or higher average score than the control group, though very few results were statistically conclusive.

The assessment itself was broken down into 3 parts. In part A, the listening section, the student had to listen to a script and determine which item the pronoun they heard referred to. They had to determine the number and gender of the pronoun in order to assign its reference. The experimental group scored higher on 4 of the 5

questions, while the control group scored better on the remaining question. In part B, which solely assessed the students' knowledge of syntactic placement, the experimental group again scored as well or better than the control group in 4 out of the 5 questions. In part C, which dealt with both reference assignment and syntactic placement, the experimental group continued to prevail, scoring better than the control group on 7 out of 8 of the questions. Applying an independent samples t-test revealed a nearly significant difference ($p=.056$) between the groups on question 2 of part C, pertaining to syntactic placement. A significant difference ($p=.046$) between the groups was also found on question 2 of section C pertaining to reference assignment. The experimental group averaged $.9 \pm .3$ points (taking the standard deviation into account) for the reference assignment aspect of the question compared to $.63 \pm .5$ in the control group. Because this particular question was the only instance in which the two groups differed significantly, there was reason to further examine the skills assessed in the question and explore how the different methodologies may have affected student performance.

In question 2 of part C, the students were asked to create a sentence using the information given. The question stated:

¿Los lentes de sol? (nosotros, empacamos, la maleta)

As far as determining the syntactic placement, the question employed a simple conjugated verb (*empacamos*) requiring proclitic syntactic placement (that the direct object pronoun be placed before the verb) as opposed to other questions involving compound verb constructions requiring enclitic syntactic placement (that the pronoun

be placed either before the first verb or be attached to the last verb). It is unknown what may have caused the difference in performance between the groups. However this researcher hypothesizes that the quantity of examples exhibiting the single conjugated verb construction provided in the inductive lesson could have affected the students' ability to recognize the correct placement of the pronoun. Additionally, the question required the students to determine the noun (*lentes*) to which the pronoun referred in order to determine the appropriate number and gender of the pronoun. While the noun was plural in this case, its compound construction may have been confusing for some students when deciding to assign reference to "*lentes*" or "*sol*". This distinction may have been particularly problematic for students with less previous exposure to Spanish, particularly those unfamiliar with fashion, vacation, or beach vocabulary. Because the two groups reported a similar level of exposure to Spanish, the difference observed between the two groups can only be attributed to the experimental treatment.

In addition to the average scores for each section, it was also necessary to explore other aspects of the post-experiment assessment in order to further compare the performance of the subjects in each group. Also displayed in Table 2, seven separate scores were created including the overall score for the assessment, the listening score assessed in part A, syntactic placement assessed in part B, the overall score for part C, the score for the reference assignment aspect of part C, the score for the syntactic placement aspect of part C, and the overall score for syntactic placement. The listening score, reported as score number 2, was calculated as the total number of

correct responses to the listening questions divided by the total number of listening questions answered by the student. This score ranged between 0 and 1. The results of the data analysis showed that the experimental group scored higher than the control group, though the difference was not statistically significant. The next score, score 3, was calculated as the total number of correct responses to part B of the assessment dealing with syntactic placement divided by the total number of questions answered by the student in part B. Similar to score 1, this score fell on a range of 0 to 1. Again, the experimental group performed better than the control group, yet the difference was not significant.

The overall score for part C combined both the syntactic placement and reference assignment parts of the question. The students were scored on a scale of 0 to 1 for their ability to assign reference to the pronouns. The reference assignment part of each item in the section was coded on a range from 0 to 1, adding to a total of 4 points, while the syntactic placement portion was coded on a scale of 0 to 2, 0 being completely incorrect and 2 being completely correct, adding to a total of 8 points. The score for part C, score 4, was calculated as the total number of points earned divided by the total possible points, which was at most 12 points depending on whether the student completed the entire section. The analysis of this score was consistent with that of previous scores in showing that the experimental group scored higher than the control group. Once again, this difference was not statistically significant.

The following two scores focused on the skills assessed in part C. Score 5 isolated the reference assignment skill in order to examine whether one group scored

higher than the other on that specific element of the question alone. The experimental group scored higher than the control group, although the difference is not statistically significant. Similarly, a score to evaluate the students' ability to determine correct syntactic placement in part C of the assessment was calculated as score 6. Again, the experimental group scored higher than the control group, but the difference was not statistically significant. Scores 1 and 7 examined the students' overall ability as well as their overall ability exclusively with regards to syntactic placement. The score examining the students' overall ability in syntactic placement, score 7, pooled the results from part B with the syntactic placement section of part C. The score was calculated as the total number of points earned in these sections divided by the total possible number of points. The experimental group scored higher than the control group, but the difference was not significant. Finally, the overall score, reported as score 1, was calculated to demonstrate the outcome across the entire assessment. Consistent with the previous results, the experimental group scored better than the control group, though no statistically-significant differences were found.

Controlling for Baseline Differences

The analysis of the raw scores on the assessment revealed information about the differences in success rates in the two groups following the respective instructional approaches. The raw analysis was executed based on the assumption that the groups were identical. Consequently, it was necessary to run a series of linear regression equations in order to account for the slight differences identified in the baseline score

calculated from the results of the preliminary assessment. The baseline assessment score was the best estimate of the students' abilities prior to the lesson and, therefore, was the only variable controlled for in the regression equations. The results of this analysis, displayed in Table 3, were positive, meaning that when controlling for the baseline score, the results were consistent with the raw score analysis. Overall, the experimental group appeared to perform better than the control group on the final assessment even when controlling for the baseline score. While none of the results were statistically conclusive, the trends discovered encourage further studies to conclusively document the benefits of the experimental treatment.

Student Feedback

Along with the empirical data collected in the study showing trends that favored an inductive approach to grammar teaching, the viewpoints from the subjects of the study also provided valuable insights into the efficacy of an inductive lesson. A survey concerning their perception of the lesson was administered to each student following the lesson. In comparing the responses from the multiple choice portion of the survey, it was discovered that the experimental group responded on average more favorably than the control group on the majority of the questions, suggesting that the group experienced a higher level of satisfaction with the lesson than the control group (refer to Table 4). This trend is evident in figure 2, which also displays the results of the quantitative analysis. Although none of the results were statistically significant, the experimental group scored higher in most of the variables evaluated. The

experimental group declared itself more content with the quantity of examples provided, their level of preparedness for the assessment, the overall effectiveness of the lesson, the clarity of the materials, their level of understanding of the topic prior to the lesson, and their level of understanding of the topic following the lesson. The minimal differences discovered warranted further discussion and research into the way students perceive an inductive grammar lesson and how it may affect student motivation.

The trend towards a higher level of satisfaction in the experimental group suggested that an inductive approach may have a slightly more positive effect on learners than the traditional deductive approach. However, it was interesting to discover that the control group reported on average a slightly higher level of satisfaction in two out of eight of the variables examined (namely, how effectively the lesson presented the topic and how well it prepared them for the activities that followed), though none of the results were statistically conclusive. This inconsistency may be explained by the common student perception of a traditional grammar lesson as a “good” foreign language lesson. The more modern variation to the grammar lesson in the inductive group may have caused the presentation of the topic to seem less effective from the learners’ perspective, and may have caused some of the students to feel unprepared to contribute to activities employing the skill. It is plausible to infer that this perception caused stress for the students at first, particularly for those who were not previously exposed to alternative grammar instruction. For this reason, it is important to recognize that while an inductive lesson may ultimately

generate a higher level of acquisition and overall satisfaction among the learners, an initial level of stress may result when encountering the approach.

Chapter 4

CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

While the constraints of time and sample size in this study must be taken into consideration, the trends observed in the results favor an inductive grammar approach over the traditional deductive grammar approach. The majority of the data did not produce statistically significant outcomes; however the experimental group consistently scored higher on average than the control group in both syntactic placement of direct object pronouns and pronoun reference assignment. This trend was consistent when controlling for the small baseline difference in the preliminary assessment mean scores, showing that even when taking into account the potential ability differences between the two groups, the experimental group continued to prevail over the control group. The evidence collected in this study supports the use of an inductive lesson over the traditional deductive lesson in order to increase student acquisition of direct object pronouns. Additionally, when considering the students' reception of the lesson, it became evident that the experimental group was generally more satisfied with the lesson than the control group. This finding suggests that the group exposed to the inductive lesson experienced a more favorable washback effect in comparison to the group exposed to the deductive lesson. The washback effect is important when considering which approach to instruction to apply in a foreign

language classroom setting, as the way students respond to the method of instruction can influence student motivation and can ultimately determine the effectiveness of the lesson.

The outcome of this study highlights the need for further research into the effects of alternative approaches to grammar instruction on learner acquisition of grammar structures, as well as learner motivation and reception of the lesson. Additionally, the results of this study show that there is a need to conduct a similar study with a larger sample size to increase the power of the data analysis. Similarly, it may be interesting to conduct a study examining how the amount of time devoted to each lesson impacts the outcome.

The favorable evidence gathered in this study about the impact of inductive language instruction motivates investigation into conditions under which this approach could be most effective. In particular, a study focusing on ways to facilitate the acquisition of structures taught inductively could be extremely valuable. Also, looking into methods of reducing stress related to experiencing new methods of instruction could increase the effectiveness of inductive instruction. Finally, research into ways to increase learner motivation during inductive lessons could give further merit to the approach. Exploring these topics in more detail in the future could enhance knowledge and understanding in the field of SLA with regards to successful methods of presenting grammar in the classroom.

Appendix A

INFORMATION AND CONSENT FORM

Date: September ____, 2008
To: Prospective Research Participants
From: Emily Kuder, Principal Investigator

You are invited to participate in a research study on second language acquisition. The purpose of this study is to observe how different approaches to instruction affect student learning. During the study, student participants will complete a preliminary survey to gather descriptive information and follow-up survey to elicit student feedback. The data collection itself will consist of a brief instructional period, practice activities, and an assessment to evaluate the students. Should you choose not to participate in this study, your responses will not be used in the data analysis process. There is minimal risk involved in this study as the methods involved are consistent with common classroom practices. The results of this study will help researchers and educators better understand ways to facilitate foreign language learning by varying instruction. Additionally, future language students will benefit from this study by experiencing effective teaching methods.

The study period will occur during regular class time on Tuesday, September 23, 2008. Please contact Emily Kuder, ekuder@udel.edu, with any questions or concerns related to the research study or student participation. Please be advised that participation is voluntary and refusal to participate will NOT result in any consequences or any loss of benefits. As a research participant, you have the right to confidentiality and the right to withdraw from the study at any time without any consequences. Each student participant will be assigned an **identification number** through the use of a numbering code in order to ensure anonymity throughout the

study. The principal investigator will have **exclusive** access to all student responses and research records.

_____ I agree to participate in this research study. I have read the letter of invitation and understand that my involvement is entirely voluntary, all research records are kept confidential, and withdrawing from this study will not have any negative consequences.

_____ I do not agree to participate in this research study.

Name: _____

Signature: _____

Date: _____ ID#: _____

Appendix B

PRELIMINARY STUDENT SURVEY

Please respond to the following questions in the most honest way possible. All replies are confidential and will not be shared with your instructor.

1. Age: _____
2. Gender: male female
3. Under what conditions were you FIRST exposed to the Spanish language?
 - a. I lived in a multilingual household or community.
 - b. I had a Spanish-speaking friend, acquaintance, or coworker.
 - c. I participated in a language camp.
 - d. I took a class.
 - e. other _____
4. How much cumulative time have you spent in Spanish-speaking countries?
 - a. I have not traveled to any Spanish-speaking countries.
 - b. 0- 2 weeks
 - c. 2-8 weeks (equivalent to a winter/summer study abroad session)
 - d. 8-16 weeks (equivalent to a fall/spring study abroad session)
 - e. 16+ weeks
5. In your previous Spanish classes, how often was the target language spoken on average?
 - a. 75-100% of the time
 - b. 50-75% of the time
 - c. 25-50% of the time
 - d. 0-25% of the time
 - e. other _____

6. Which activities have you experienced in prior language classes? (*check all that apply*)

- _____ a. Participated in group activities. _____ b. Watched videos
 _____ c. Participated in group projects. _____ d. Learned and practiced rhymes.
 _____ e. Explored art, music, and/or dance. _____ f. Discussed and described pictures.
 _____ g. Read poems, plays, and/or stories. _____ h. Interacted with native speakers.
 _____ i. Experienced the language outside of the classroom (i.e. field trips, etc.)

7. Please rate the level to which you agree with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I generally prefer to listen to a lecture rather than read to self-teach.	1	2	3	4	5
I generally prefer to work independently rather than in a group.	1	2	3	4	5
I generally prefer to answer questions about a movie rather than a written dialogue.	1	2	3	4	5
I generally prefer to read a book rather than listen to a book on tape.	1	2	3	4	5
I generally prefer to watch a PowerPoint presentation rather than a chalkboard lesson.	1	2	3	4	5

8. Please choose the statement that best applies to you.

- a. Before coming to Spanish class, I **always** preview material on the syllabus.
- b. Before coming to Spanish class, I **usually** preview material on the syllabus.
- c. Before coming to Spanish class, I **sometimes** preview material on the syllabus.
- d. Before coming to Spanish class, I **never** preview material on the syllabus.

Appendix C

PRELIMINARY ASSESSMENT

A. La vida de Juanes *Unscramble the statements and questions about the life of the famous Colombian singer Juanes. In order to complete the statements, refer to the timeline to determine the number that replaces the question mark. For the purpose of this activity, the current year is 2008.*



1972 Nace Juan Esteban Aristizábal Vásquez (Juanes) en Medellín, Colombia.

1980 Descubre en la música un refugio seguro

1990 Conformar el grupo Ekhyosis

1998 Separa con el grupo Ekhyosis

1999 Se instala en Los Ángeles

2000 Sale su primer álbum solista bajo el nombre “Fíjate Bien”

2002 Llega su álbum titulado “Un día Normal”

2003 Logra participaciones con artistas como Nelly Furtado

2004 Vuelve a sorprender con su tercer álbum titulado “Mi sangre”

Statements:

1. nació/ hace/ Juanes/ que/ ____? ____ años

2. hace/ ____? ____ años/ salió/ su álbum titulado “Mi sangre”/ que

Questions:

3. hace/ cuánto/ la música/ que/ tiempo/ practica/ Juanes

¿_____?

4. Juanes/ separó con/ años/ cuántos/ que/ el grupo Ekymosis/ hace

¿_____?

Appendix D

CONTROL GROUP INPUT HANDOUT

- ❖ The direct object refers to the word or phrase that receives the action of the verb in a sentence. It usually answers the question *What?* or *Whom?* In the following example, the noun *la maleta* receives the action of the verb *empacar* by describing what Maria packed. In its noun form, the direct object follows the verb.

Ex. *Maria empacó **la maleta**.*

- ❖ When the direct object noun has already been mentioned, a pronoun can be used to replace that noun in order to avoid repetition in a subsequent sentence. The pronoun always precedes a conjugated verb.

Ex. *¿**La maleta**? Maria **la** empacó.*

- ❖ In Spanish, the direct object pronoun must agree in number (singular or plural) and gender (masculine or feminine) with the noun it is replacing.

lo	him, it, you (formal, m.)	los	them, you (formal, m.)
la	her, it, you (formal, f.)	las	them, you (formal, f.)

Ex. *¿**El maletín**? Maria **lo** lleva.*

*¿Quién ayudó **a Maria**? Fernando **la** ayudó.*

*¿Quién va a llevar **a Maria y Fernando** al aeropuerto?
El hermano de Maria **los** va a llevar al aeropuerto.*

*¿**Las mochilas**? Maria **las** sacó del coche.*

- ❖ If there is a verb phrase consisting of a conjugated verb AND an infinitive or present participle, the pronoun can EITHER precede the conjugated verb OR attach to the infinitive or present participle.

Ex. *¿**El boleto**? Maria no **lo** puede encontrar.*

OR

*¿**El boleto**? Maria no puede encontrar**lo**.*

*¿A mí? Julio **me** va a llevar.*

OR

*¿A mí? Julio va a llevar**me**.*

❖ When a pronoun is attached to a present participle, an accent mark is added.

Ex. *¿**El boleto**? Fernando **lo** está buscando.*

OR

*¿**El boleto**? Fernando está buscá**ndolo**.*

Appendix E

EXPERIMENTAL GROUP INPUT HANDOUT

Antes de leer

A. El diálogo *Observing the title and pictures that accompany the following series of dialogues, choose the statement that BEST summarizes the topic of the conversations.*

- a. Juan and Cecilia are taking a group of study abroad students to Ecuador.
- b. Juan and Cecilia are planning a vacation to Ecuador.
- c. Juan and Cecilia are moving from Ecuador to the United States.

B. Contexto y vocabulario *Scan the dialogue to look for the following words relating to travel. Place a check mark next to each word that is present in the dialogue.*

- | | |
|------------------------------|--------------------|
| _____ el boleto | _____ la billetera |
| _____ la tarjeta de embarque | _____ el pasaporte |
| _____ los cheques de viajero | _____ la visa |
| _____ la maleta | _____ el maletín |

A leer

De viaje a Ecuador



La noche antes de salir para el viaje.

JUAN: Hola Mamá. ¡Creo que ya tengo todo arreglado para mi viaje a Ecuador!

MAMÁ: ¿Sí? Fenomenal. ¿Ya conseguiste un pasaporte?

JUAN: Sí, **lo** conseguí hace un mes.



MAMÁ: ¿Y compraste los boletos?

JUAN: ¿Los boletos? Sí, **los** compré hace dos semanas.

MAMÁ: ¿Y ya tienes las tarjetas de embarque?

JUAN: No, tengo que imprimirlas pronto.



MAMÁ: Es cierto. ¿Hiciste la maleta también?

JUAN: Cecilia está haciéndola ahora.

MAMÁ: Bueno. ¡Espero que se diviertan!

* * *

El momento en que salen Juan y su esposa Cecilia para su viaje.

CECILIA: Juan, necesito ayuda con el equipaje. ¿**Lo** puedes llevar al coche?

JUAN: Sí. ¿Y esta cartera? ¿Debo llevarla al coche también?



CECILIA: No, voy a dejarla aquí. No **la** necesito durante el viaje. Pero sí necesitaré las mochilas.



JUAN: Claro. **Las** empacaré enseguida.

CECILIA: ¡Y no olvides los cheques de viajero!

JUAN: No te preocupes. Ya **los** puse en el maletín.

C. ¿Entendiste? Determine whether the following statements are true or false according to the series of dialogues. Place a check in the column labeled **cierto** if the statement is true or **falso** if the statement is false.

	Cierto	Falso
1. Juan y su mamá van a ir de vacaciones a Ecuador.	<input type="checkbox"/>	<input type="checkbox"/>

2. Mamá le pregunta a Juan sobre algunos preparativos para su viaje.		
3. Cecilia y Juan empacan el coche una semana antes del viaje.		
4. Cecilia y Juan tienen todas las cosas en orden para el viaje.		

D. ¿Están preparados? *Using information from the reading, determine which **object** each of the following statements is referring to.*

1. Juan **lo** va a llevar al coche.
 - a. los cheques de viajero
 - b. el equipaje
 - c. la maleta
2. Cecilia va a dejar**la** en casa.
 - a. la cartera
 - b. el pasaporte
 - c. las tarjetas de embarque
3. Juan **los** compró hace dos semanas.
 - a. el equipaje
 - b. las maletas
 - c. los boletos
4. Juan **las** empacará.
 - a. los cheques de viajero
 - b. las mochilas
 - c. la maleta

E. Elementos lingüísticos *Now that you have observed the conversations between Juan, Juan's mother, and Cecilia, see if you can answer the following questions highlighting some of the grammatical aspects of their dialogues.*

1. In order to avoid repetition, pronouns are used to replace (nouns / adjectives) when the context of the statement is already known. (*circle one*)

2. In **Spanish**, some of the pronouns that indicate what or whom is receiving the action are: _____, la, los, and _____.
3. In **English**, the pronoun is placed...
 - a. after the verb.
 - b. before the verb.
 - c. either before or after the verb depending on its conjugation.
4. In **Spanish**, the pronoun is placed...
 - a. after the verb.
 - b. before the verb.
 - c. either before or after the verb depending on its conjugation.

Appendix F

REINFORCEMENT ACTIVITIES

A. El viaje de Cecilia *Complete the paragraph Cecilia wrote about her trip to Ecuador by circling the appropriate pronoun according to context of the sentence.*

El verano pasado, yo fui de viaje a Ecuador con mi esposo Juan. En preparación, compré un libro acerca de las atracciones turísticas en Ecuador y **1. (lo / la)** leí antes de salir. Unas semanas antes del viaje, yo fui a comprar boletos en la




agencia de viajes. **2. (Los / La)** compré sin problema.

Después, Juan consiguió nuestros pasaportes y **3. (los / lo)** empacó con los otros documentos de viaje. Para obtener los cheques de viajero, fuimos al banco con efectivo y el cajero **4. (los / lo)** cambió para nosotros.

La noche antes de salir, yo empaqué las maletas y Juan **5. (lo / las)** cargó en el coche.

Al llegar al aeropuerto, un empleado de la aerolínea **6. (la / las)** llevó a la facturación de equipajes. Cuando llegamos a la sala de espera, sacamos la documentación necesaria y **7. (la / lo)** mostramos al empleado antes de abordar el avión.

B.  **Sección auditiva: La línea interminable** *While waiting in line at the airport, Cecilia overheard various conversations. Listen to the following questions and read the corresponding responses. Each question has **two** correct options. Determine which response is **NOT CORRECT**.*

1.
 - a. Lo voy a buscar enseguida.
 - b. Voy a buscar lo enseguida.
 - c. Voy a buscarlo enseguida.

2.
 - a. No, no los puedo encontrar.
 - b. No, no puedo los encontrar.
 - c. No, no puedo encontrarlos.

3.
 - a. Sí Linda, quiero comprar los.
 - b. Sí Linda, los quiero comprar.
 - c. Sí Linda, quiero comprarlos.

4.
 - a. Sí, yo estoy buscándola.
 - b. Sí, yo la estoy buscando.
 - c. Sí, yo estoy buscandola.

5.
 - a. Sí, los estoy sacando ahora mismo.
 - b. Sí, estoy sacando los ahora mismo.
 - c. Sí, estoy sacándolos ahora mismo.

6.
 - a. Sí, la planeo comprar pronto.
 - b. Sí, planeo comprarla pronto.
 - c. Sí, planeo comprarla pronto.



C. La visita a una vieja amiga ecuatoriana *During the second week of their trip to Ecuador, Cecilia and Juan visited their friend Adriana. Complete their responses to her questions by filling in one of the following pronouns EITHER before the verb phrase OR attaching it to the second verb in the verb phrase. *There could be more than one correct answer.**

lo	los
-----------	------------

la	las
-----------	------------

1. ADRIANA: ¿Ya visitaron ustedes el volcán Pichincha?
 CECILIA: Sí, ya fuimos a Quito y _____ visitamos _____.

2. ADRIANA: ¿También conocieron ustedes las Islas Galápagos?
 CECILIA: No, no _____ conocimos _____.

3. ADRIANA: Pues, ¿quieren ver la fauna de esas islas?
 JUAN: Sí, _____ queremos ver _____.



4. ADRIANA: ¿Piensan visitar el pueblo de Otavalo?
 JUAN: No, no _____ pensamos visitar _____.

5. ADRIANA: ¿Van a comprar los textiles de las culturas indígenas?
 CECILIA: Sí, _____ vamos a comprar _____.



Appendix G

REINFORCEMENT ACTIVITIES LISTENING SCRIPT


B. La línea interminable

Listening Script:

1. ¿Perdiste tu pasaporte? ¿Qué vas a hacer?
2. ¿Tienes los cheques de viajero?
3. ¿Quieres comprar los sellos para enviar postales?
4. ¿Estás buscando la casa de cambio?
5. Señorita, ¿tiene usted el boleto y el pasaporte?
6. Tengo hambre. ¿Planeas comprar comida?

Appendix H

FINAL ASSESSMENT

A.  **Sección auditiva: ¿Qué cosa?** Listen to the following statements and determine what Juan was referring to when helping Cecilia prepare for their trip.

1. a. el jefe b. los padres c. la abuela
2. a. los documentos b. la visa c. el boleto
3. a. el vuelo b. la reservación c. las maletas
4. a. la palmita b. los oritos c. el babaco
5. a. las camisetas b. los calcetines c. la corbata

B. **En el aeropuerto** The trip to the airport was quite stressful for Juan and Cecilia. Each mini-dialogue has two possible responses. Circle the **ONE** response that is **NOT POSSIBLE**.

1. JUAN: Disculpe Señor, ¿Usted necesita la tarjeta de embarque ahora?
EMPLEADO: _____

- a. No, no necesito la tarjeta.
- b. No, no la necesito.
- c. No, no necesítola.

2. JUAN: ¿Estás buscando las billeteras?
CECILIA: _____

- a. Sí, estoy buscándolas.
- b. Sí, estoy buscando las.
- c. Sí, las estoy buscando.



3. JUAN: Cecilia, ¿Puedes ver la línea en el terminal internacional? ¡Es
larguísima!
CECILIA: _____

- a. Sí, la puedo ver.
- b. Sí, puedo ver la.
- c. Sí, puedo verla.

4. CECILIA: ¿Quieres llamar a tus padres antes de salir de la casa?

JUAN: _____

- a. Sí, quiero llamar los.
- b. Sí, los quiero llamar.
- c. Sí, quiero llamarlos.

5. CECILIA: Mientras esperamos, ¿Vas a comprar comida?

JUAN: _____

- a. Sí, voy a comprarla.
- b. Sí, la voy a comprar.
- c. Sí, voy a comprar la.

C. A revisar la lista *Before leaving for their trip to Ecuador, Juan read from a check list as Cecilia noted where each item was packed. As Juan lists the items, construct Cecilia's responses by using the information provided in parenthesis. Be sure not to repeat the items Juan already listed!*

Ex: ¿La cámara fotográfica? (yo, puse, la mochila)

Yo la puse en la mochila.



1. ¿El dinero en efectivo? (tú, pusiste, la billetera)

2. ¿Los lentes de sol? (nosotros, empacamos, la maleta)

3. ¿La computadora portátil? (yo, quiero poner, el maletín)

4. ¿Las revistas? (tú, vas a empacar, la mochila)

Appendix I

ASSESSMENT LISTENING SCRIPT

A. ¿Qué cosa?

Listening Script:

- 1. Cecilia, ¿los llamaste?**
- 2. Lo estoy buscando ahora mismo.**
- 3. Cecilia, ¿la hiciste en el internet?**
- 4. Espero comerlo en Ecuador.**
- 5. Necesito empacarlas.**

Appendix J

STUDENT FEEDBACK SURVEY

This survey will generate feedback about the lesson you just experienced. Please respond to the following questions in the most honest way possible. Again, all answers are confidential and will not be shared with your instructor.

1. In English, briefly describe the topic you studied in class today.

2. How effectively did the lesson present the topic for the day?

- a. not at all
- b. somewhat
- c. for the most part
- d. extremely

3. Did the lesson provide a sufficient number of examples?

- a. not at all
- b. somewhat
- c. for the most part
- d. extremely

4. To what extent do you feel the lesson prepared you for the activities that followed?

- a. not at all
- b. somewhat
- c. for the most part
- d. extremely

5. To what extent do you feel the activities prepared you for the quiz?

- a. not at all
- b. somewhat
- c. for the most part
- d. extremely

6. What grade do you think you earned on the quiz?

- 100-90% 90-80% 80-70% 60-50% Less than 50%

7. How do you rate... (check the appropriate box)

	Outstanding	Good	Acceptable	Poor	Deficient
the overall effectiveness of the lesson?					
the clarity of the materials you received?					
your level of understanding of the topic prior to the lesson?					
your level of understanding of the topic following the lesson?					

8. Was there anything particularly helpful about the lesson?

9. What particular aspects of the lesson did you like? Dislike?

10. What changes would you make to the lesson to make it more effective?

11. What is your overall opinion of the lesson?

Table 1

Table 1: Baseline Descriptive Statistics							
	Total (N=44)		Exper (N=24)		Control (N=20)		p-value*
Age*:	19.34 (1.446)		18.96 (1.268)		19.80 (1.54)		0.053
Gender:							
male	17	38.6%	7	29.2%	10	50.0%	0.158
female	27	61.4%	17	70.8%	10	50.0%	
Baseline Survey Questions							
Exposure to Spanish:							
lived in multilingual household/community Spanish-speaking friend/acquaintance/coworker	4	9.1%	3	12.5%	1	5.0%	p=.74
Participated in language camp	0	0.0%	0	0.0%	0	0.0%	
Took a class	33	75.0%	18	75.0%	15	75.0%	
Other	4	9.1%	2	8.3%	2	10.0%	
Cumulative time spent in Spanish-speaking countries:							
none	24	54.5%	11	45.8%	13	65.0%	p=.409
0-2 weeks	14	31.8%	9	37.5%	5	25.0%	
2-8 weeks	4	9.1%	3	12.5%	1	5.0%	
8-16 weeks	1	2.3%	1	4.2%	0	0.0%	
16+ weeks	1	2.3%	0	0.0%	1	5.0%	
Amount of time Spanish was spoken in previous classes:							
0-25%	2	4.5%	0	0.0%	2	10.0%	p=.225
25-50%	19	43.2%	13	54.2%	6	30.0%	
50-75%	14	31.8%	7	29.2%	7	35.0%	
75-100%	9	20.5%	4	16.7%	5	25.0%	
Activities experienced in previous Spanish classes:							
Participated in group	42	95.5%	23	95.8%	19	95.0%	p=.895

activities							
Watched videos	43	97.7%	24	100.0%	19	95.0%	p=.268
Participated in group projects	29	65.9%	20	83.3%	9	45.0%	p=.008
Learned and practiced rhymes	11	25.0%	5	20.8%	6	30.0%	p=.484
Explored art, music, and/or dance	32	72.7%	17	70.8%	15	75.0%	p=.757
Discussed and described pictures	39	88.6%	21	87.5%	18	90.0%	p=.795
Read poems, plays, and/or stories	27	61.4%	16	66.7%	11	55.0%	p=.429
Interacted with native speakers	12	27.3%	4	16.7%	8	40.0%	p=.084
Experience outside the classroom	9	20.5%	4	16.7%	5	25.0%	p=.495
Baseline Assessment							
Score*:	44	.71 (.232)		.76 (.195)		.65 (.262)	p=.116

*mean(std)

**p-values calculated from Pearson chi-squared tests in all cases except age and score when the p-values are calculated from independent samples t-test

Table 2

Table 2: Final Assessment Raw Output and Scores*						
	Experiment		Control		p-value (t- test**)	
	N	mean (std)	N	mean (std)		
Part a: Listening						
question 1	24	.88 (.34)	20	.95 (.22)	0.401	
question 2	24	.92 (.28)	16	.8 (.41)	0.29	
question 3	24	1.0 (0)	19	.95 (.22)	0.33	
question 4	24	.88 (.34)	17	.85 (.37)	0.815	
question 5	24	.96 (.20)	17	.85 (.37)	0.248	
Part b: Syntactic Placement						
question 1	23	.91 (.29)	20	.95 (.22)	0.645	
question 2	23	1.0 (0)	20	.9 (.31)	0.163	
question 3	23	1.0 (0)	20	1.0 (0)	1	
question 4	23	.96 (.21)	20	.9 (.31)	0.48	
question 5	23	.96 (.21)	20	.95 (.22)	0.922	
Part c: Reference assignment/syntactic placement						
question 1- ref	22	.73 (.46)	19	.58 (.51)	0.33	
question 1- syn	22	1.86 (.35)	19	1.84 (.38)	0.85	
question 2- ref	21	.90 (.30)	19	.63 (.5)	0.046	
question 2- syn	21	2.0 (0)	19	1.74 (.56)	0.056	
question 3- ref	20	.8 (.41)	18	.72 (.46)	0.585	
question 3- syn	20	1.95 (.22)	18	1.83 (.38)	0.269	
question 4- ref	20	.75 (.44)	18	.78 (.43)	0.846	
question 4- syn	20	1.9 (.31)	18	1.83 (.38)	0.556	
Raw Scores						
1. Overall	N=24	.9204 (.107)	N=20	.864 (.166)	p=.182	
2. Part A- Listening Questions	N=24	.925 (.142)	N=20	.88 (.199)	p=.403	
3. Part B- Syntactic Placement	N=23	.965 (.078)	N=20	.94 (.147)	p=.476	
4. Part C- Overall	N=22	.8902 (.195)	N=19	.816 (.258)	p=.301	
5. Part C- Reference Assignment	N=22	.773 (.369)	N=19	.658 (.435)	p=.366	
6. Part C- Syntactic Placement	N=22	.949 (.126)	N=19	.895 (.209)	p=.334	
7. Overall Syntactic Placement	N=23	.961 (.08)	N=20	.912 (.167)	p=.241	

*Scores calculated as the total number of points earned divided by the total possible number of points

**p-values for output calculated by independent samples t-test

Table 3

Table 3: Regression Output*				
	Estimate	Std. Error	t-value	p-value
Overall	0.032	0.04	0.799	0.429
part a- Listening Questions	0.028	0.053	0.538	0.594
part b- Syntactic Placement	0.009	0.036	0.265	0.792
part c- Overall	0.029	0.073	0.398	0.693
part c- Reference Assignment	0.047	0.131	0.362	0.719
part c- Syntactic Placement	0.02	0.055	0.363	0.719
Overall Syntactic Placement	0.03	0.039	0.754	0.455

*Output controlling for baseline only

Table 4

Table 4: Final Survey					
	Experiment		Control		p-value
	N	mean (std)	N	mean (std)	(t-test)
How effectively did the lesson present the topic	24	2.88 (.741)	20	3.05 (.945)	0.495
Did the lesson provide sufficient examples	24	3.38 (.647)	20	3.2 (.768)	0.416
To what extent do you feel the lesson prepared you for the activities that followed	24	2.96 (.908)	20	3.1 (1.021)	0.629
To what extent do you feel the activities prepared you for the quiz	24	3.04 (.955)	20	3.0 (1.076)	0.892
How do you rate...					
The overall effectiveness of the lesson	19	4.05 (.848)	14	3.93 (.917)	0.691
The clarity of the materials you received	19	3.89 (.875)	14	3.86 (.949)	0.907
Your level of understanding of the topic prior to the lesson	19	3.16 (1.167)	14	2.71 (1.069)	0.272
Your level of understanding of the topic following the lesson	19	4.26 (.872)	14	3.86 (.864)	0.194

Figure 1

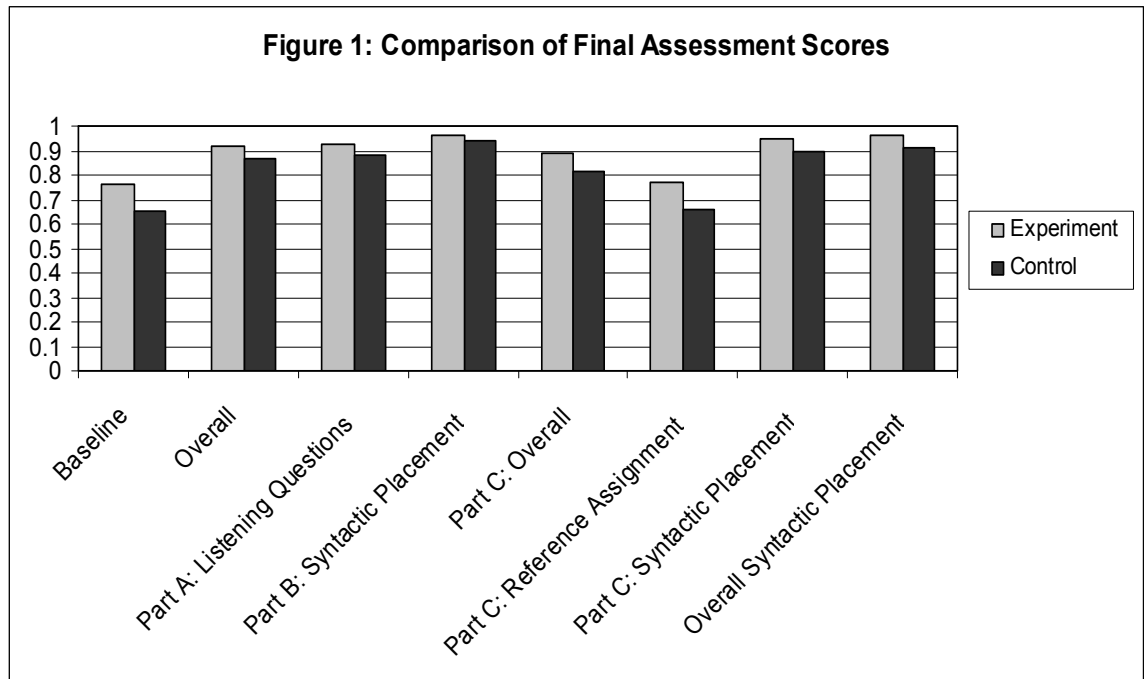
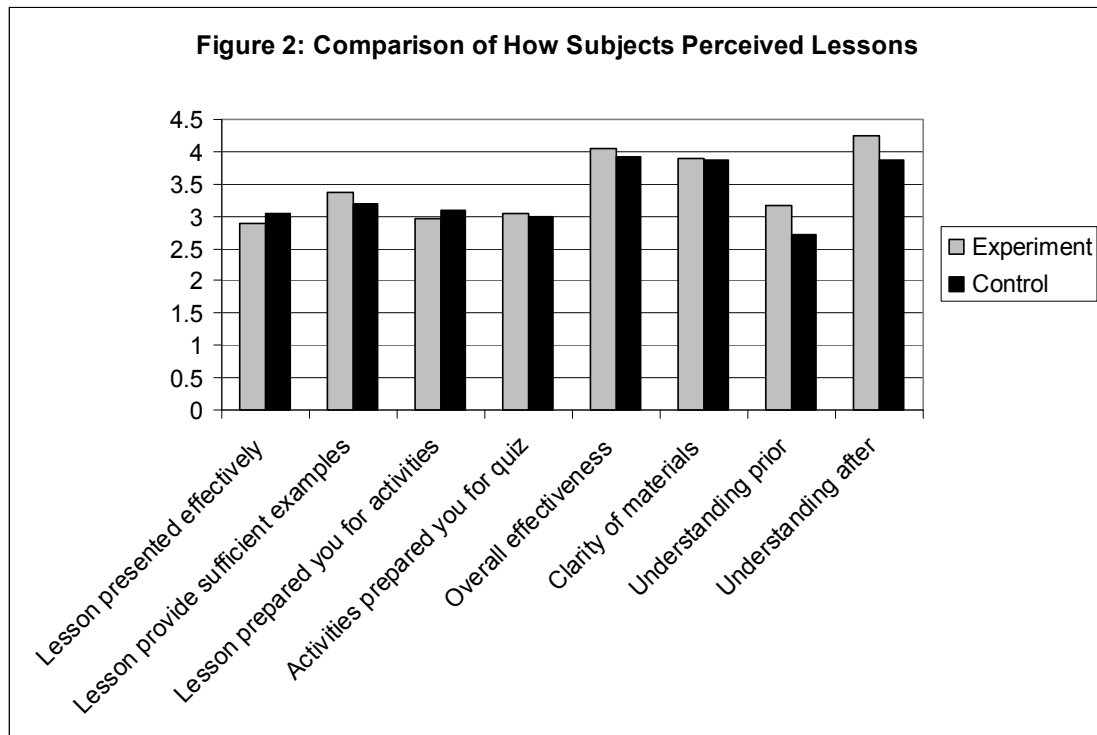


Figure 2



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