

**GROUP DYNAMIC ASSESSMENT IN AN EARLY FOREIGN LANGUAGE
LEARNING PROGRAM: TRACKING MOVEMENT THROUGH THE ZONE OF
PROXIMAL DEVELOPMENT**

by

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Kristin Johnson Davin, PhD

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Although researchers have begun to explore the implementation of dynamic assessment (DA) with foreign language learners, few of these studies have occurred in the language classroom. Whereas DA is typically implemented in dyads, promising research in the field of foreign language learning suggests that DA may promote development with groups of students as well. The present study explored the implementation of group DA in a combined fourth and fifth grade elementary Spanish classroom as students studied interrogative use and formation. After a pre-test determined no student could use and form interrogatives independently, a DA program was designed to provide mediation attuned the zone of proximal development of the group of students as a whole. During this ten day DA program, the development of nine focal students was tracked as they participated in large group and small group instruction. Drawing on sociocultural theory, mediation provided by the teacher and by peers was transcribed and analyzed, as well as students' responses to that mediation. Development was further examined based on students' scores on a post-test, near transcendence task and far transcendence task. Findings suggest that while some students moved from assisted to unassisted performance during large group DA, other students required peer mediation provided during small group work to

develop interrogative use and formation. Those students who could perform independently during large group DA acted as mediators during small group work for those who still required mediation. Still other students were never able to use and form questions independently, indicating that interrogative use and formation was not within their zone of proximal development. It was concluded that DA can be integrated into the language curriculum of early language learning programs without the sacrifice of effective language pedagogy. To that end, small group work is an essential complement to large group DA in that it provides students with the opportunity to request mediation, verbalize their thoughts, and provide mediation to their peers.

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PREFACE

I would like to express my gratitude to the Spanish teacher described in this study who so kindly invited me into her classroom. Despite her hectic schedule, she was excited to learn about DA and worked with me tirelessly.

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This dissertation would not have been possible without the brilliance of my advisor, Richard Donato, who taught me how to conduct research and how to write effectively. His expertise and knowledge will leave its mark on my work for years to come.

Finally, I must thank my husband for the sacrifices that he has made in my pursuit of this accomplishment.

1.0 INTRODUCTION

As school budgets continue to shrink, foreign language programs often lose essential resources such as teachers and materials. In the last decade, foreign language programs at the elementary school level have been the ones to suffer most. Whereas 31% of elementary schools offered foreign language classes in 1997, only 25% offered programs in 2008 (Rhodes & Pufahl, 2010). In many of the Foreign Language at the Elementary School (FLES) programs that do still exist, one teacher is responsible for teaching upwards of 150 students. Based on a 2010 survey, Rhodes and Pufahl report that 51% of elementary schools have only one elementary foreign language teacher. They also report that sixty-one percent of elementary school foreign language programs in the United States provide less than 120 minutes of foreign language instruction per week and 36% of programs provide less than sixty minutes per week. Perhaps related to the high number of students and short amount of time allocated to foreign language, assessment at this level is often neglected.

This study presents dynamic assessment (DA) as a technique that can be implemented in early language learning programs to strengthen instruction and assessment. In a classroom in which the teacher implements DA, instruction and assessment occur simultaneously. Instead of instruction on a topic for ten days followed by a test or quiz on day eleven, instruction and assessment are implemented concurrently during every class period. While the teacher teaches new vocabulary, he or she also assesses students' progress. While the teacher assesses students'

knowledge of new vocabulary, he or she also offers instruction to help the child grasp new content. This integration of instruction and assessment promotes development in children by revealing deficiencies in understanding while also providing the teacher with a clear picture of a students' development (Campione & Brown, 1987). As a result, the teacher can refine and focus instruction on areas of misunderstanding. Similarly, as Campione and Brown (1987) write, "Some children may not have acquired the information or skills being assessed, but nonetheless may be able to do so quite readily if given the opportunity" (p.82). By offering mediation during assessment, a teacher does not miss any opportunity to further a child's development, affording him or her more opportunities to succeed.

The present study examines the implementation of DA in an early foreign language learning program setting like the one described above. While the present study is similar to others in that it follows a test-train-retest format (Feuerstein, Rand and Hoffman, 1980; Budoff, 1987; Campione & Brown, 1987) and is based on the concepts of the zone of proximal development (ZPD) (Vygotsky, 1978) as described below, it differs in that the researcher implements DA with a group of twenty students simultaneously in a Spanish class.

1.1 SOCIOCULTURAL THEORY

DA is based on the belief that assessment of a child's present knowledge is not nearly as revealing as an assessment of that child's potential. Vygotsky writes:

Suppose I investigate two children upon entrance into school, both of whom are ten years old chronologically and eight years old in terms of mental development. Can I say that they are the same age mentally? Of course. What does this mean? It

means that they can independently deal with tasks up to the degree of difficulty that has been standardized for the eight year old level... These children seem to be capable of handling problems up to an eight year old's level, but not beyond that. Suppose that I show them different ways of dealing with the problem. Different experimenters might employ different modes of demonstration in different cases: some might run through an entire demonstration and ask the children to repeat it, others might initiate the solution and ask the child to finish it, or offer leading questions. In short, in some way or another, I propose that the children solve the problem with my assistance. Under these circumstances, it turns out that the first child can deal with problems up to a twelve year old's level, the second up to a nine year olds. Now, are these children mentally the same? (p. 85-86)

Vygotsky believed that an examination of what a child could do with assistance was more informative than an examination of what he could do alone. When implementing a dynamic assessment, an examiner interacts with a child and provides assistance to capture learning potential and to promote development. Vygotsky (1978) distinguishes between learning and development: while learning is the ability to perform under the guidance of a more skilled person, development is the ability to perform alone when guidance is removed. Therefore, learning and development cannot be separated or examined in isolation. Vygotsky (1978) writes:

learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the child's independent developmental achievement. (p.90)

According to this theory, learning precedes development, and development cannot occur without learning.

1.2 ZONE OF PROXIMAL DEVELOPMENT

In order for DA to be successful in bringing about development, learning must be “properly organized” (Vygotsky, 1978, p. 90). A child cannot learn a concept for which he does not have available the necessary maturing psychological functions. For example, a five year old child cannot learn algebra because he or she is not yet capable of abstract thinking. Algebra is not within that child’s ZPD. Not until those necessary maturing psychological functions are available does the concept move to within the child’s ZPD. Vygotsky (1978) defines the ZPD as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p.86). According to this definition, the person providing guidance (the mediator) must be aware of a learner’s actual developmental level (ADL). Vygotsky defines the “actual developmental level” as problem solving completed without assistance, or “the level of development of a child’s mental functions that has been established as a result of certain already completed developmental cycles (p. 85).” Learning, or the ability to perform under another’s guidance, creates the ZPD. As Vygotsky writes, “learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment (p. 90)”. Until a child begins to collaborate with a more competent individual, these developmental processes are not active or available. Functions that are in the process of maturation cannot emerge without mediation; they can only

begin to take form during a social interaction. Thus, learning through the assistance of a more capable other must come before the development of higher psychological functions. Higher psychological functions are mental processes that are not "direct, innate, natural forms", but instead are "mediated, artificial, mental functions that develop in the process of cultural development" (Vygotsky, 1998, p. 168).

A child's actual developmental level and the ZPD are always changing. This change occurs as a child's psychological functions mature and the child can complete tasks independently that before could only be completed with assistance. According to this concept, when a child no longer needs assistance or guidance to solve a problem, internalization has occurred and what was within the child's ZPD is now their ADL. According to sociocultural theory, social interaction informs the development of mental processes, cultural tools mediate psychological functioning, and development advances through the ZPD (Lantolf & Thorne, 2006).

1.3 DYNAMIC ASSESSMENT: ORIGINS AND CHARACTERISTICS

DA has emerged from the work of Vygotsky in the Soviet Union and Feuerstein in Israel. Two distinct traditions exist in the research today, both based on the belief that one's ability to profit from mediation is more revealing than solitary performance. Vygotsky's approach is a way to measure the ZPD of a child and his or her ability to profit from the guidance of a more experienced other. The more that a child can profit from mediation, the greater the ZPD is. Similarly, Feuerstein's approach is also used to measure an individual's ability to profit from mediation. In each approach, one's responses to mediation are the unit of measurement.

Feuerstein uses different terminology and refers to his assessment technique as a Mediated Learning Experience (MLE) (Feuerstein, Rand & Hoffman, 1980).

DA can take different forms and have varying goals, but in each form aid is given in some way to the learner. Carlson and Wiedl (1978, 1979) modify the format in which the test is administered, Budoff (1974) provides direct instruction in methods of problem solving and Feuerstein et al. (1980) directly evaluates a set of mental processes. The goal of DA can be to help a learner reach peak performance, to measure a learner's responses to mediation, or to focus on how efficiently a learner can complete a task (Campione & Brown, 1987).

The present study is motivated by the work of researchers such as Lantolf, Poehner, Antón and Ableeva who, in the last decade, have implemented DA in foreign language education settings. Poehner (2008a) dynamically assessed university students' ability to correctly decide between and conjugate the imparfait and passé composé in French when narrating a movie. He offered mediation tailored to the needs of his students in both a near and far transcendence task and found that using DA gave him insight into the source of students' errors. He also concluded that the mediation resulted in improved understanding of these two tenses and aspect for the students. Antón (2009) also examined the usefulness of DA with university students. She implemented DA with third year Spanish majors on the speaking and writing portions of a diagnostic test. Similar to Poehner (2008a), she also concluded that DA led to a deeper understanding of students' abilities. A third researcher Ableeva (2008) also used DA with university students studying French. She used DA to promote development of listening comprehension skills. Ableeva found that the differences in learners' difficulties on an assessment revealed their unique ZPDs, a difference not revealed on the non-dynamic pre-test.

The majority of DA studies in foreign language education have focused on university students. At this time, only one study has examined the implementation of DA with a group of students in a foreign language classroom. Before Lantolf and Poehner (2011), DA was mostly used in dyads with one mediator and one learner. Their study, which is described more thoroughly in Chapter 2, examined how a K-5 Spanish teacher implemented DA with a large group of students simultaneously. DA was incorporated into daily lessons without changing instructional objectives or curricular goals by teaching within the ZPD of students to promote development of subject/adjective agreement in Spanish. Poehner (2009) concludes that “organizing classroom activity in this way enables teachers to explore and promote the group’s ZPD while also supporting the development of individual learners” (p.471).

1.4 PURPOSE AND METHODS OF PRESENT STUDY

The purpose of the present study was twofold: to explore a technique that could improve assessment for early language learners and to determine the efficacy of DA in an early language learning program. This study is unique in that it tracked the development of nine individual students as they participated in group DA. Unlike previous research (Campion & Brown, 1987, Feuerstein et al., 1980, Poehner, 2008), the baseline assessments and transcendence tasks in the present study were non-dynamic. While this aspect of the study at first seemed to contradict the underlying assumptions of DA, it was the best method to avoid conflating the results of group DA with individual DA that would have otherwise been provided on these tasks.

In this study, the teacher taught within the students’ ZPDs by focusing on the syntactic and functional development of WH- questions in Spanish. WH- questions are questions that, in

English, ask *who, what, when, where, why, how, and how many*. According to the ACTFL proficiency guidelines for speaking (1999), students at the intermediate low level are “able to ask a few appropriate questions”. Likewise, based on the ACTFL proficiency guidelines for writing (2001), intermediate low writers can “formulate questions based on familiar material.” The inability to ask questions on the Oral Proficiency Interview (OPI) can prevent Spanish language learners from receiving an intermediate low rating. Students may be rated as novice high speakers or writers because they fail to form and use questions correctly.

Asking WH- questions in Spanish can be difficult for foreign language learners. Difficulty can arise when the word order in Spanish questions is different from the word order in English questions. In Spanish, the adjective often follows the noun, as opposed to the reverse in English. Montrul, Foote and Perpiñán (2008) have found that students with low proficiency in a second language (L2) are more likely to transcend knowledge about their first language to the L2.

Another common problem when forming questions in Spanish is that Spanish questions do not require an auxiliary verb, as illustrated in examples *a* and *b*.

- a. ¿Dónde te gusta comer?
- b. Where do you like to eat?

Students studying Spanish are often confused that they do not need a word for “do” when forming a question in Spanish.

Therefore, to examine the implementation of DA with 4th and 5th grade students studying interrogative use and formation in Spanish, the—following research questions guided this investigation:

Research Question 1: What characterizes large group dynamic assessment focused on the formation and use of Spanish interrogative structures? What are the students' responses during large group dynamic assessment of Spanish interrogative structures?

Research Question 2: How do students assist each other on the formation and use of Spanish interrogative structures during small group work following large group dynamic assessment?

Research Question 3: What similarities and/or differences are observed in the way students assist each other on the formation and use of Spanish interrogative structures during small group work following large group dynamic assessment?

Research Question 4: To what extent are students able to use Spanish interrogative structures in new contexts after the initial large group dynamic assessment?

Research Question 5: What syntactic and functional development of Spanish interrogative structures is observed in individual students while participating in dynamic assessment focused on this structure?

To answer these research questions, qualitative and quantitative data were collected and analyzed. After developing the curriculum and DA procedures with the Spanish teacher, the study occurred over a twenty three day period in which the teacher altered her methods to incorporate DA. All classes during this period were recorded and transcribed. Nine focal students were chosen to track movement from assisted to unassisted performance during the DA program. To address the suggestion of Lantolf and Thorne (2006) that “peer interaction should be included among participant structures conducive to learning through the ZPD” (p.288), four focal groups consisting of the nine focal students were observed and recorded during all classroom activities.

In small groups, peer interactions were videotaped, transcribed and coded. To determine how students used and formed interrogative structures after DA, a pre-test was compared to a post-test as well as to a near and far transcendence task. Scores across these four tasks were tabulated and compared based on pre-determined criteria as described in Chapter 3.

1.5 CONCLUSION

This study contributes to a deeper understanding of the features of group DA in an elementary school Spanish classroom. The syntactic and functional development of interrogative use and formation by nine focal students was tracked using observations, a post-test and transcendence tasks. The present study highlights the usefulness of DA as an alternative to the exclusive use of summative assessments in elementary language programs. By combining instruction and assessment, teachers are able to cover more of their curricular goals while also gaining a clearer picture of students' development. Mearig (1987) writes that for primary-age children, the goal of DA should be "to discover what can be learned with good teaching" (p. 237). She further states that "dynamic assessment techniques would be most effective in the hands of teachers who could provide continuity and individualized instruction based on assessment findings" (p.238). The present study highlights the feasibility of DA as well as the positive outcomes.

2.0 LITERATURE REVIEW

This literature review synthesizes research on dynamic assessment (DA), both within and outside the field of foreign language education. In this review, literature on DA is divided into the following sections: (a) components of DA, (b) approaches to DA, (c) DA in a the foreign language setting, (d) DA in a group setting, (e) peer mediation and (f) Spanish interrogative use and formation. After synthesizing the research in these areas, limitations of the research on DA are identified and a trajectory for further research is suggested. This synthesis reveals the lack of research on DA in elementary school language programs, as well as the need for more research on DA in group settings. After discussing previous research and uncovering the limitations, this chapter concludes with a discussion of the functional and syntactic formation of Spanish interrogatives.

2.1 VARYING DEFINITIONS OF DYNAMIC ASSESSMENT

No agreed upon definition of DA exists and many different terms often refer to similar concepts. While some researchers write about dynamic testing (Sternberg & Grigorenko, 2002), others write about learning tests (Guthke, 1992) or about interactive assessment (Haywood & Tzuriel, 1992) and still others about mediated learning (Feuerstein et al., 1987). Each of these methods of assessment has similar and different characteristics. The DA website,

www.dynamicassessment.com, defines DA as “an interactive approach to conducting assessments within the domains of psychology, speech/language, or education that focuses on the ability of the learner to respond to intervention.” This definition emphasizes the learner and his or her responses, but is not clear about what the interactive approach looks like. Lidz’ (1987) definition is more specific and places more emphasis on the interactive aspect. She writes that DA is “an interaction between an examiner-as-intervener and a learner-as-active participant, which seeks to estimate the degree of modifiability of the learner and the means by which positive changes in cognitive functioning can be induced and maintained” (Lidz, 1987, p.4). While this definition focuses more on how the learner responds to mediation, it does not make mention of the ZPD. The definition that guides the present study is one proposed by Lantolf and Poehner (2004). They write that DA is a procedure that:

Integrates assessment and instruction into a seamless, unified activity aimed at promoting learner development through appropriate forms of mediation that are sensitive to the individual’s (or in some cases a group’s) current abilities. In essence, DA is a procedure for simultaneously assessing and promoting development that takes account of the individual’s (or groups’s) zone of proximal development (p.50).

While this statement most closely defines DA for the present study, there is a slight departure that will be discussed at the end of this chapter in Section 2.8.

Perhaps as a result of the varying definitions, methods in DA studies vary significantly. Each research team has their own unique approach to assessing learners dynamically. In Section 2.3, several of these approaches will be discussed. The following section discusses components of DA as they are conceptualized for the present study.

2.2 COMPONENTS OF DA

DA is different from most formal large-scale tests in that dynamic assessments serve different purposes and seek to measure different abilities. The purpose of many large-scale tests is to measure previous development. In contrast, the purpose of DA is twofold: to promote development and to measure developmental potential. In DA, an examiner interacts with a student to determine how he learns instead of how much he already knows (Sternberg & Grigorenko, 2002). Lidz (1991) writes, “To merely describe the child’s performance does not allow us to draw conclusions or to derive recommendations” (p. 24). An important use of DA is to make recommendations based on developmental potential not revealed by traditional non-dynamic tests.

2.2.1 Mediation

All DA procedures involve mediation and the person who provides this mediation is often referred to as the mediator. Vygotsky (1978) refers to the mediator as someone who provides “adult guidance” or a “more capable peer” (p.86). A mediator probes, questions and provides hints to help a learner perform a task that is within his or her ZPD, but which or he she cannot complete alone (Poehner, 2008). With DA, a mediator gains a more nuanced understanding of a child’s potential abilities than with a non-dynamic test, and the mediator is also able to promote development in the child by instructing at the same time as assessing (Feuerstein et al., 1978).

Mediation can be standardized or non-standardized, depending on the researcher’s interpretation of DA. When mediation is standardized, all learners receive the same assisting prompts during an assessment. This approach to DA produces quantitative results and allows

researchers to better assess the psychometric properties of the assessment. When mediation is not standardized, a mediator can create assisting prompts based on his or her assessment of the learner's needs. Most likely, no two learners will receive the same quality and quantity of assistance. As a result, it is not possible to assess psychometric properties such as validity and reliability in the traditional manner (Poehner, 2008a). Results of non-standardized dynamic assessments are qualitative and entail a detailed description of the learner. Lantolf and Poehner (2004) propose the terms *interventionist* and *interactionist* to describe these two approaches to DA. As Lantolf and Poehner (2006) write, with *interactionist* DA, mediation is emergent and the forms of mediation "emerge from the cooperative dialoguing between the mediator and the learner" (p.46).

Each of these two approaches to DA has both strengths and weaknesses. Researchers who implement standardized assistance cite validity issues with those who implement the qualitative approach. Haywood and Lidz write that "much of the interpretation of DA data depends on the skill and experience of the examiner" (p.3). Without standardization, the mediator is tasked with correctly interpreting a learner's need for assistance instantaneously. The mediator has less than a second to decide on how much mediation to give and what type of assistance to provide (Haywood & Lidz, 2007). Those who implement qualitative DA argue that the quantitative approach overlooks important aspects of learners by reducing their performance to a numerical score. Researchers such as Minick (1987) feel that interventionists have misinterpreted the work of Vygotsky. Minick (1987) writes:

Thus, despite its historical connections with the work of Brown, Campione, and Budoff, Vygotsky's concept of the ZPD, and the system of theory and research of which it is part, have more direct implications for the kinds of assessment

problems that have been addressed in the work of Feuerstein and his colleagues than they have for the task of producing quantitative measures of a child's learning efficiency or learning potential. (p.119)

Another important aspect of DA studies is whether a 'sandwich' or 'cake' format of mediation is used. Sternberg and Grigorenko (2002) describe intermittent mediation as 'sandwich' because it occurs between a pre- and post-test. They define the 'cake' format as ongoing because mediation occurs throughout and assistance is layered with instruction.

2.2.2 Internalization and Transcendence

As mentioned in Chapter 1, when a child no longer requires assistance or guidance to complete a task, internalization has occurred and what was within the child's ZPD is now their actual developmental level (ADL). Internalization is a core concept proposed by Vygotsky and described as the "mechanism through which control of our natural mental endowments is established" (Lantolf & Thorne, 2006, p. 153). Initially, a person can only complete tasks that lie within their ZPD with the assistance of a more competent peer. As a result of interaction with this peer, and as long as the task was within the learner's ZPD, he or she should be able to eventually internalize the assistance and complete the task alone. This concept emerges from Vygotsky's theory that every psychological function appears twice, first on the interpsychological plane through interaction with mediating artifacts and second on the intrapsychological plane within the mind of the individual. Internalization is the development of the ability to carry out on the mental plane activities that before could only be carried out interpsychologically (Gal'perin, 1992).

A second important component of DA is transcendence, which Feuerstein addresses in his approach to DA, the Mediated Learning Experience (MLE). Feuerstein uses this term to refer to the concept that an interaction has a purpose beyond the immediate need that elicited the interaction. The goal of a MLE interaction is to produce long-term effects that result in higher levels of thinking (Feuerstein, Rand & Rynders, 1988). Therefore, in Feuerstein's approach to DA, after the initial training phase, additional tasks are given that become progressively more difficult and require the transcendence of previous learning.

Campione and Brown (1987) include a similar component in their approach to DA, but they use the term 'transfer'. They cite Gagné's (1970) statement that transfer is "the question of how much appears to be a matter of how broadly the individual can generalize what he has learned to a new situation" (p. 95). Campione and Brown (1987) incorporate a near transfer task, a far transfer task and a very far transfer task. Near transfer tasks are tasks that involve the same principles learned during training but in different combinations. Far transfer tasks involve the application of a novel pattern or relationship. Very far transfer tasks involve the use of new principles in a new context.

2.2.3 Reciprocity

Not only is it important to record mediational moves during DA, but it is also important to note how learners respond to mediation. Lidz (1987) stresses the importance of learner reciprocity, realizing the active role that learners can take in DA interactions. Before her research, focus had mostly centered on the quality of mediation. Lidz points out that different learners respond to identical mediation prompts in varying ways, in varying quantities and in varying qualities. A learner's feelings toward a mediator can affect the learner's responsiveness and performance.

Van Der Aalsvoort and Lidz (2002) developed a scale to capture these dimensions. The scale includes aspects such as responsiveness to the mediator, self-regulation of attention and impulses, comprehension of activity demands, and reaction to challenge. When using a qualitative approach, the mediator often includes observations and commentary on these dimensions to create a more complete picture of the learner.

Poehner (2008b) elaborates upon the work of Van Der Aalsvoort and Lidz (2002) and focuses his analysis on five forms of reciprocity: negotiating mediation, use of mediator as a resource, creating opportunities to develop, seeking mediator approval and rejecting mediation. He writes that "the signification of a given reciprocating act such as requesting mediator assistance can only be appropriately interpreted by contextualizing it within the mediator-learner dialog" (p.53). Recording the context in which a learner rejects the assisting prompt of a mediator reveals much more than simply stating that the learner rejected mediation on two occasions. In his work, Poehner (2008a) includes excerpts from DA interactions so that readers can contextualize reciprocating acts within the dialogue.

2.3 APPROACHES TO DA

Because Vygotsky died at such a young age and had only recently introduced the ZPD, he was unable to fully develop this construct. As a result, researchers and theorists such as Lantolf, Poehner, Wertsch, and Chaiklin have continued to define and explain the ZPD. The approach one takes to DA is often based on that person's interpretation of the ZPD. While researchers such as Campione and Brown and Budoff take a quantitative approach to DA, others such as Lantolf and Poehner adopt a qualitative approach. Luria, a student of Vygotsky who continued

his work after his death, also took a quantitative approach. He compared pre-tests to post-tests to analyze development.

Table 1 was developed by Sternberg and Grigorenko (2002, pp.24-25) and was modified and elaborated for the purposes of this chapter. This table provides an overview of the most well-known approaches to DA and their characteristics.

Table 1. Dynamic Testing Approaches

Approach and Developer	Method	Target Population	Format	Context	Outcome
Structural Cognitive Modifiability (Feuerstein)	Learning Potential Assessment Device (LPAD)	All individuals needing modification	Test-train-test	Outside of school	Structural cognitive changes
Learning Potential Testing (Budoff)	Test-centered coaching	Low-achieving students	Pre-test-standardized training-post-test	Outside of school	Improved test performance
Graduated Prompt Approach (Campione & Brown)	Hinting procedure	Low-achieving students	Pre-test-mediated learning-static testing and transfer testing-mediated maintenance and transfer	Specific domains/subjects	Measure of ZPD
Lerntest approach (Guthke)	German learning potential tests	Mentally disabled individuals	Pre-test-training-post-test	Psychometric tests within specific domains	Records of learning gain
Testing-the-limits (Carlson & Wiedl)	Teach-to-the-limit approach	All individuals	Various verbalization and feedback	Specific domains	Improved test performance
Lantolf and Poehner	Interactionist approach	Language learners	Non-standardized mediation during post-tests and transfer tasks	Language learners; individual or group	Development of concept; Diagnosis of misconceptions

2.3.1 Quantitative Approaches to DA

Like Feuerstein, Budoff (1987) also believed that many low-achieving students have more learning potential than revealed by static tests. Yet, he felt that Feuerstein's approach did not involve enough standardization. To resolve this conflict, Budoff created standardized, valid, reliable dynamic versions of well-known tests such as Kohs Learning Potential Task, Raven Learning Potential Test and Picture Word Game. For this reason, Budoff's approach to DA is the approach most similar to other large scale non-dynamic assessments. In his dynamic versions of these tests, a learner takes a pre-test followed by a training session in which he or she is taught to master all actions necessary to correctly complete all tasks. Upon completion of the training, the tasks given at the pre-test are presented twice more, usually one day after the training and again one month after the training. Budoff (1987) explains that, "The intent of learning potential assessment is to obtain an estimate of general ability derived from reasoning problems of suitable difficulty, which the child has had an opportunity to learn how to solve, and which permit a comparison with the low scholastic aptitude score" (p.55). Mediation in learning potential assessment is standardized and never altered. Results are reported as a numerical score and no attention is given to reciprocity.

Campione and Brown's (1987) approach to DA incorporates Vygotsky's view of learning and development and his notion of the ZPD. Like Vygotsky, they follow an assessment process in which an initial assessment of a child's competence is followed by instruction on target tasks. The measure of gain from the pre-test to the post-test is believed to better predict future performance than the initial non-dynamic assessment alone (Campione & Brown, 1987). In this approach to DA, standardized prompts and hints move from general to concrete and the minimum amount of helped needed by a child to solve a problem is given.

The metric of learning used by Campione and Brown is different from that of most DA researchers. While Budoff (1987) calculates how much improvement a learner shows from pre-test to post-test, Campione and Brown measure development by the number of hints required for attainment of the learning criterion. According to them, “the metric of learning or transfer efficiency is the amount of help needed for a student to acquire a rule or procedure” (Lidz, 1987, p. 89). As a result of this difference, Campione and Brown can offer mediation on each of the transfer tasks without skewing results.

Guthke and colleagues have developed DA procedures which they refer to as the *Lerntest*. The *Lerntest* builds off of the work of Budoff in that mediation is standardized, but it also emphasizes Vygotsky’s work. Guthke (1992) disagrees with researchers such as Lantolf and Poehner when he writes, “Vygotsky (1935) never categorically condemned the experimental or the psychometric approach, that is to say, the test. Quite on the contrary, he called for a standardized, psychometric, experimental approach for psychodiagnosis” (p.139). Unlike Budoff who sandwiches mediation between a pre- and post-test, Guthke uses the cake format and provides instruction during assessments.

Also unlike the DA researchers mentioned above, Guthke has developed DA procedures for language aptitude. Examinees are shown an invented language and asked to figure out the pattern. Mediation is standardized and consists of prompts such as “That’s not correct. Please think about it once again.” Results on the *Lerntest* include a score based on the number of prompts needed and the amount of time spent on the test as well as a learner profile that analyzes the types of errors made and the learner’s responsiveness to mediation (Poehner, 2008a).

Carlson and Wiedl’s (1992) approach to DA also has underpinnings in the work of Vygotsky, but unlike the approaches mentioned above, it is connected to information-processing

theory. Their DA procedures do not require a pre-test or a post-test. According to Carlson and Wiedl (1992), a learner's performance on a test is a result of the interaction of the individual, the testing materials, and the testing situation. Using tasks such as Raven matrices, Carlson and Wiedl (1979) use standardized interventions to find the right match of type of manipulation of the test situation for each student to result in optimum performance. Examples of manipulations include verbalization after solution, simple feedback and elaborate feedback plus verbalization during and after solution.

2.3.2 Qualitative Approaches to DA

Reuven Feuerstein has developed what some consider the most comprehensive approach to DA, though his work is not based on Vygotsky or the ZPD (Poehner, 2008a). During his graduate work, Feuerstein worked for an agency testing Jewish children for placement in the Israeli educational system. He wrote that “clinical observations strongly suggested that a substantial reservoir of abilities was being left untapped by the measuring instruments we employed (Feuerstein, 1980, p.viii).” Feuerstein believed that the non-dynamic tests used to assess the intelligence of these students were not capturing an accurate picture of the child's abilities. Influenced by these experiences, Feuerstein developed the Learning Potential Assessment Device (LPAD). The LPAD examines how a child learns and solves problems, and examines their learning capacity or “peak performance” (ix). The LPAD follows a test-train-test format in which an examiner assists the learner to reach his or her peak performance in a Mediated Learning Experience (MLE). Feuerstein defines MLE as “the way in which stimuli emitted by the environment are transformed by a ‘mediating’ agent, usually a parent, sibling, or other caregiver” (pp. 15-16). In Feuerstein's DA procedures, the mediator offers assistance tailored to

each individual student's needs. Lidz (1991) writes that Feuerstein's approach is the most "learner-responsive" (p.21) approach to DA because the mediator can provide whatever prompts or assistance he or she feels necessary on any ability he or she feels needs to be targeted. The result is not a quantitative score, but instead a rich description of the learner's performance.

In Feuerstein's approach to DA, the dynamic construct is structural rather than functional. Feuerstein's approach is based on the belief that one can intervene in the development of human cognitive abilities (Feuerstein et al., 1987). When the dynamic construct is structural, one searches "for changes in the very structural nature of the cognitive processes that directly determine cognitive functioning in more than one area of mental activity" (Feuerstein, Rand, Jensen, Kaniel & Tzuriel, 1987, p. 43). Many different areas of mental functioning can be targeted, such as motivation or attention. In contrast, when the dynamic construct is functional, only a limited aspect of an individual's functioning is targeted. Feuerstein et al. (1987) describe functional DA as the "enhancement of the individual's functioning as it relates to interaction with the specific psychometric test" (p. 42). Structural DA is based on the concept of structural cognitive modifiability (SCM) in which the goal is to change the "very structural nature of the cognitive processes that directly determine cognitive functioning" (p.42).

While Feuerstein's approach to DA and those approaches based on Vygotsky's concept of the ZPD seem quite similar, Minick (1987) argues that a major weakness of Feuerstein's approach is his unclearness on the mechanism of change. Minick writes that Vygotsky's work "provides a powerful theoretical framework for understanding the mechanisms in socially organized forms of interaction and activity that can lead to change in the child's psychological functions" (p.138).

2.4 DA IN THE FOREIGN LANGUAGE SETTING

Within the last decade, several researchers have begun to implement DA with foreign language learners (Kozulin & Garb, 2002; Ableeva, 2008; Poehner, 2009; Antón, 2009). In the foreign language setting, DA can serve multiple purposes such as determining program placement for language learners, assisting an examiner in the diagnosis of the source of a learner's misconceptions, and promoting student proficiency in the target language.

2.4.1 DA for Placement

Antón (2009) conducted a study in which she implemented DA with five incoming Spanish majors at the university level. After completing a non-dynamic entry exam that assessed grammar and vocabulary, listening comprehension, reading comprehension, writing and speaking, students took part in a mediated learning experience focused on the written and spoken portions of the test. During the mediated learning experience, students were asked to write about their experience with their language and their plans after graduation. The mediation protocol was non-standardized; students were allowed to consult a dictionary and a grammar manual, as well as to ask the examiner questions. The dynamic writing assessment was followed by a dynamic speaking assessment in which the students interacted with the examiner. Antón (2009) writes that “the mediator responds to learners’ discourse by adjusting intervention to what is needed in each individual case in order to complete the task and show the full potential of the learners’ ability” (p.592). In this study, the form of evidence was response to mediation. Based on students’ responses to mediation during the dynamic speaking test, Antón gained a clearer picture of students’ abilities.

2.4.2 DA with Foreign Language Listening Comprehension

Ableeva (2008) implemented DA in a large university setting with six students studying French. Her study included three stages: (1) a non-dynamic pre-test, (2) a mediation process stage and (3) a dynamic re-test. During the non-dynamic pre-test, the six participants listened to an authentic radio announcement twice and answered corresponding questions in writing. After they completed the non-dynamic pre-test, the mediation process began. During this stage, students listened to the broadcast as many times as needed, which ranged from three to five repetitions. Students were offered non-standardized mediation that included leading questions, hints and prompts. The mediator also offered linguistic and cultural explanations when needed. Ableeva writes that this interaction revealed the learners' problem areas which centered on the inability to recognize known words, and the inability to determine the meaning of new lexical items. She concluded, "it should be emphasized that the problem areas were revealed only on the basis of participants' performance throughout the DA stage, during which a flexible mediator-learner interaction was involved" (p.73).

During the re-test stage, the mediator provided leading questions and prompts as students orally summarized the audio text. A validity issue with this study is that while the students answered in written format for the pre-test, they answered orally for the retest. Ableeva writes, "It should be noted that participants experienced significant difficulties summarizing the text in French" (p. 77). In addition to assessing listening comprehension, Ableeva was also inadvertently assessing oral communication. It is possible that the students understood the text better than they could orally communicate.

The design of this study limited the breadth of conclusions that could be drawn. Based on this data, Ableeva concluded that the difference in learners' difficulties showed that they had

unique ZPDs, despite similarities in pre-test performance. Because the retest was designed more like a transfer task than a post-test, further conclusions could not be drawn.

2.4.3 DA with EFL Students

Whereas Antón used student's responses to mediation as her form of evidence, Kozulin and Garb (2002) used change over time. Kozulin and Garb (2002) implemented DA with English language learners. Their design followed a test-teach-test format to assess 23 academically at-risk students who failed to pass the high school English exam. Results showed that while some students were able to greatly improve their performance on the post-test, others did not show much development at all. They concluded that "A dynamic assessment of EFL text comprehension should therefore assess the student's ability to learn, activate and use effective strategies for text comprehension" (p.199).

2.5 DYNAMIC ASSESSMENT IN A FOREIGN LANGUAGE CLASSROOM

The present study differs from those described above in that DA is implemented in a classroom; therefore, the teacher must work within the ZPD of all students in the large group. Chaiklin's (2003) distinction of the objective and subjective zones of proximal development is useful in conceptualizing DA and classroom teaching. According to this distinction, the subjective use of the ZPD must be individually determined for every child, but the objective ZPD can be generalized across a homogenous population, such as fifth graders in the United States. Chaiklin (2003) describes the objective use of the ZPD as the socioculturally developed expectation of

what a child should be able to do at a certain age level. Therefore, while a child in the United States should be able to read simple sentences in the first grade, a child in another culture might not be expected to do this at such an early age. In that culture, reading is not within the objective ZPD of a first grader. This conceptualization is useful for understanding how a teacher can determine a cognitive process that lies within the ZPD of all of her students.

Tzuriel and Feuerstein (1992) have experimented with group DA of cognitive modifiability. They write that group DA “can provide preliminary indications about children’s learning potential and specific difficulties that necessitate later in-depth individual assessment, and it is more economical” (p.188). In their study, Tzuriel and Feuerstein used two tests from the LPAD to assess 689 Israeli boys and 705 Israeli girls in grades four through nine. These students were from thirty classes at fourteen schools labeled as serving ‘culturally deprived’ students. Students were divided into three experimental conditions, high teaching (HT), low teaching (LT) and no teaching (NT). Students in the HT group received a set of five exemplar problems and were taught extensively how to solve these. Students in the LT group received only one exemplar problem, while the students in the NT group did not receive any instruction. Students were initially given Raven’s Standard Progressive Matrices (RSPM; Raven, 1947) which assesses reasoning ability. Based on the results of this test, students were divided into three performance level groups (low, medium, high) to assess the different teaching conditions for students at differing ability levels. Tzuriel and Feuerstein found that children in the HT condition performed better than children exposed to the LT and NT condition. They found that teaching effects were especially large for the low ability group. This group benefited more than the medium and high ability groups from the HT condition.

2.5.1 Group Dynamic Assessment in the Foreign Language Classroom

Lantolf and Poehner (2011) examined the implementation of DA in a combined fourth and fifth grade Spanish classroom. In this study, the classroom teacher used standardized mediation prompts to dynamically assess noun/adjective agreement in Spanish. Based partially on data from this study, Poehner (2009) makes a distinction between the cumulative and concurrent approaches to group DA. In the cumulative approach, the students “take turns engaging directly as primary interactants with the teacher, with the understanding that each subsequent one-on-one exchange will have the advantage of building on earlier interactions that the class witnessed” (Poehner, 2009, p. 478). When a student provides an incorrect answer, the teacher provides that same student with mediation prompts until he or she reaches the correct answer, as is illustrated below.

1. St 1: ¿Qué las personas comen en Argentina?*
- What the people do they eat in Argentina?

2. Teacher: ¿Qué *las personas* comen?*
- What the people do eat?

3. S1: ¿Qué comen las personas?
- What do the people eat?

4. T: Sí, excelente. ¿Qué comen las personas? ¿El pan? ¿El pollo?
- Yes, excellent. What do people eat? Bread? Chicken?

In contrast, the large group concurrent approach occurs when the student experiencing difficulty is not given the chance to correct his or her statement. Rather, the teacher provides mediation and then calls on a different student, other than the student who initiated the interaction, to reformulate the response (Poehner, 2009).

5. S1: ¿Qué las personas comen en Argentina?*
- What the people do they eat in Argentina?

6. T: Clase, ¿Qué *las personas* comen? *
Class, what the people do eat?
7. (S2 raises hand and teacher calls on student)
8. T: Sí, ¿Juan?
Yes, Juan?
9. S2: It should be ¿Qué *comen* las personas?
What do the people eat?
10. T: Sí. ¿Qué comen las personas? ¿El pan? ¿El pollo?
Yes, excellent. What do people eat? Bread? Chicken?

In this latter approach, the concurrent approach, a student is not given the opportunity to reformulate his or her statement. The teacher indicates that the response is incorrect and provides assistance, but then calls on a different student to reformulate the response. It seems that this one-on-one interaction with a single student would cause less anxiety than the concurrent approach in which the teacher dialogues with the entire group. Concurrent DA seems to lower the confidence of a student who does not get the opportunity to offer a second response, therefore ignoring the resulting interaction and never knowing what the correct answer was. While the concurrent approach does involve more students, Lantolf and Poehner (2011) note that with the cumulative approach, students other than the primary interactant seem actively engaged, and many times, are waving their hands in the air to volunteer the answer.

2.6 PEER MEDIATION

Vygotsky wrote that learning takes place through interaction with more competent persons, regardless of whether these persons are adults or peers. In the classroom, students can learn

through interaction with their teacher, but also through interaction with their classmates. Within small group work, students often take responsibility for assisting each other (Curtain and Dahlberg, 2010). Several studies have elucidated the impact that peer mediation can have on a student's learning.

Ohta (2005) studied two students enrolled in a college level Japanese class and how their levels of participation varied based on whether interaction was teacher-fronted or in pairs. Based on a one-hundred minute video recording, Ohta found that each student experimented more with the language in pair work than in large group instruction. During group instruction, the students did not want to risk embarrassment in front of their classmates. In pairs, they were more willing to practice strategies such as correction, repetition or clarification requests. As Curtain and Dahlberg (2010) write, small group activities led to more student talk and provided "a 'safe' environment for communication, more like one-on-one conversation" (p.98).

Peer mediation can also play an important role with elementary school students if the classroom culture is supportive. Takahashi (1998) conducted a longitudinal study in which she studied protocols taken from a combined kindergarten and first grade class and a combined first and second grade class at three points in time, with nine months separating each point in time. She found that as the proficiency levels of the students' improved, their ability to scaffold the learning of their classmates improved. She also found that "through social interaction the students can gain mastery in how to mediate their own and each other's learning" (p.402).

A third study specifically examined peer mediation after training students to use DA. Tzuriel and Shamir (2007) conducted a study with 178 students, half of whom were third graders and designated as mediators in the study, and half of whom were first grade students and designated as learners. Each group was divided into high and low cognitive levels, and a

mediator was paired with a learner in a counterbalanced design. These pairs were divided into a control group and an experimental group. Mediators in the experimental group participated in a Peer Mediation with Young Children (PMYC) program. The PMYC program was based on the sociocultural theory of Vygotsky and the Mediated Learning Experience theory (Feuerstein, Rand & Hoffman, 1980). Tzuriel and Shamir (2007) write “The objectives of the PMYC programme are to enhance a mediating teaching style among young children and to develop learning skills and propensity for cognitive modifiability in both mediators and learners” (p.146). During this program, children in the experimental group learned the mediated learning experience principles¹ as outlined by Feuerstein et al. (1980) as well as basic communication skills. Mediators in the control group participated in a substitute program that emphasized general conditions of peer interactions. Tzuriel and Shamir (2007) found that both the mediators and learners in the experimental group showed higher improvement than those in the control group. They also found that when the mediator and learner’s cognitive levels were matched (low-low or high-high), the differences between the experimental and control groups were insignificant. This finding lends support to Vygotsky’s (1978) assertion that mediation should be provided by a “more capable peer” (p.86).

2.7 FORMATION AND USE OF SPANISH INTERROGATIVES

The present study examined the implementation of DA focused on the formation and use of Spanish interrogatives. The decision to focus on question formation in Spanish was motivated by

¹ MLE principles included were (1) Intentionality and Reciprocity, (2) Transcendence, (3) Meaning, (4) Feelings of competence, and (5) Regulation of behavior.

previous research. In the spring of 2010, an Integrated Performance Assessment (IPA) conducted with the 4th and 5th grade students at this same school revealed their inability to use and form questions in Spanish. The IPA consists of an interpretive, interpersonal and presentational communication task that assesses a learner's proficiency in each of these three modes of communication. In the interpersonal task, two students converse spontaneously about a given topic. An important communication and clarification strategy in this assessment is asking questions (Adair-Hauck, Glisan, Koda, Swender, & Sandrock, 2006). On written surveys and in focus groups, students reported that they struggled with the interpersonal task because they did not know how to ask questions in Spanish.² Question formation is also a skill that students need to reach an intermediate low level of proficiency (ACTFL, 1996).

There are several reasons that native English speakers struggle with question formation in Spanish. Forward transfer from a student's native language can affect how he or she interprets a new language (MacWhinney & Bates, 1989). For native English speakers, the Spanish question words *¿qué?* (what), *¿cuál?* (which) and *¿cómo?* (how) can cause confusion. This is illustrated in the examples below.

11. *¿Cuál es su nombre?*
What is your name?

12. *¿Qué es su nombre?**
What is your name?

13. *¿Cómo te llamas?*
What is your name?

² Students were successful at asking yes/no and either/or questions such as “¿Te gusta la playa?” (Do you like the beach?) and “¿Es rojo o azul?” (Is it red or blue?). Many students also successfully asked questions using the word “¿Cuántos?” (How many?), but no one used any other WH- question words.

Lines 11 and 13 illustrate the appropriate formation of a question inquiring about someone's name. The question in line 11 uses the question word that means *which* (cuál) instead of the question word that means *what* (qué). If the question word *¿qué?* were used as in line 12, a speaker would be asking about the definition of the word *name*, not about what a person is called. If the grammatical question in line 13 were translated literally to English, it would state, *How are you called?* In this case, students are inclined to use the question word *¿qué?* (what), which is ungrammatical (Whitley & González, 2000).

Another source of confusion for native English speakers is that many information questions in English require the use of the auxiliary verb *do* as in the examples in lines 14-16.

14. When do you want to go?

15. Where do you like to eat?

16. Why do you run?

In Spanish, this auxiliary verb is not present, as in lines 17, 18, and 19.

17. ¿Cuándo quiere ir?

18. ¿Dónde le gusta comer?

19. ¿Por qué corre Ud?

2.8 SUMMARY

This chapter summarizes the components of DA, current approaches, and the work that has been done with DA in the field of foreign language education as well as in the classroom setting. It outlines literature on peer mediation and the motivation for targeting Spanish interrogative formation for the present study. The current literature reveals a need for more research focused

on the implementation of DA in the group foreign language setting. Specifically, a need exists to track individual student's development as they participate in group DA. Literature on peer mediation highlights the potential of children to dynamically assess their peers. The present study attempts to unite each of these needs.

Similar to Feuerstein, Budoff and Guthke, this study incorporates a test-train-test format. Based on the work of Campione and Brown and Poehner, the present study also incorporates transfer tasks, referred to as transcendence tasks. While the decision to use standardized or non-standardized mediation was a difficult one, standardized assistance was used because the target of mediation is so narrow. Instead of targeting a student's speaking proficiency in general as does Antón (2009), the present study targets wh- question formation. Therefore, it was much easier to predict likely errors and create standardized prompts that address these errors. These prompts are further discussed in Chapter 3.

Another point of departure of the current study from the research of Antón (2009), Ableeva (2008) and Poehner (2008a) is that the post-test and the transcendence tasks are non-dynamic. While this aspect of the study runs contrary to the belief that instruction and assessment should be unified, it was necessary in order to interpret results. Dynamically assessing the effectiveness of group DA would likely conflate results. If the post-test was given dynamically, then the researcher would not be able to ascertain whether results on the near transcendence task were based on the group DA sessions or the individual mediation given during the post-test.

One last area for concern comes from Chaiklin (2003) assertion that "it seems more appropriate to use the term ZPD to refer to the phenomenon that Vygotsky was writing about and find other terms (for example, assisted instruction, scaffolding) to refer to practice such as

teaching a specific subject matter concept, skill and so forth" (p. 15). The present study targeted the development in students of a specific subject matter concept. While the relationship of this subject matter concept to development was beyond the scope of this study, self-regulated use of questions for specific purposes was evidence of communicative development.

3.0 METHODOLOGY

The present study focused on dynamic assessment (DA) in a combined fourth and fifth grade Spanish classroom at a laboratory school in western Pennsylvania. In this chapter, reasons for choosing this site are outlined and the program in place at this school is described. The nine focal students are then identified, as well as the methods used for choosing these participants. The five questions that guided this research are listed, followed by the data collection methods used to answer each question. Data included classroom observations, group work observations and written assessments. Written assessments included a pre-test, a post-test (identical to the pre-test), a near transcendence task (NTT) and a far transcendence task (FTT). The chapter concludes with a discussion of data analysis.

3.1 CONTEXT

In order for DA to be practical for foreign language classrooms, it must be integrated into the curriculum. The DA program in the present study was part of a semester long thematic unit on Argentina in which students took an imaginary trip to three different regions of Argentina: Las Pampas, Mesopotamia and Patagonia. Students studied the geography and climate, visited key landmarks, and talked about popular activities. The unit began in September of 2010, and after a thirty day period, the Spanish teacher administered the pre-test. The following day, the ten day

DA program began. The teacher remained true to the objectives outlined in the thematic unit, but her methods of instruction and assessment changed. Instead of separating the two, instruction and assessment were combined as described in Section 3.6.

3.1.1 Rationale

This research took place at a K-8 private laboratory school in Western Pennsylvania. Approximately three hundred students attend this school, and the school continues to expand enrollments each year. The population resembles that of the surrounding areas, with approximately 10% of students being minorities. It is unique in that about 45% of the students' parents work at the local public university. This school served as an ideal research site for this study for several reasons. First, a strong elementary Spanish program is well established in grades K-8. While the program in grades 6-8 has existed for many years, the K-5 Spanish program began in the fall of 2006. By the start of the 2010-2011 school year, the fifth graders who had been at this school throughout the Spanish program had studied Spanish for four years. During these four years, students had Spanish instruction for fifteen minutes daily.

The second reason for choosing this laboratory school was based on the school's mission: To provide students with a progressive education based on current research. Their charter agreement states their desire to

establish a school that promoted progressive methods of teaching children that could be observed and studied by those who wished to pursue teaching as a vocation; and the University of Pittsburgh wished to establish and maintain an elementary demonstration school that was progressive and experimental and that would become an integral part of its educational mission.

Faculty members generally embrace new methods and appreciate innovative approaches to instruction. In this intellectual climate and laboratory school environment, students and their parents are accustomed to participating in research.

The third reason for selecting this school for the study was that, in the 2009-2010 academic year, an Integrated Performance Assessment (IPA) was conducted with the fourth and fifth grade students. The IPA is a classroom-based proficiency assessment that assesses the three modes of communication: the interpretive, interpersonal and presentational (Glisan, Adair-Hauck, Koda, Sandrock & Swender, 2003). This assessment identified student proficiency levels that were used in determining the participants for this study. Results from the interpersonal task of the IPA and student surveys revealed the need for instruction on question formation.

Finally, this school was an ideal site for the present study because of the researcher's intimate knowledge of the standards-based curriculum developed during her three-year tenure as the elementary school Spanish teacher. This knowledge of the curriculum allowed for the integration of this research without interruption of daily classroom procedures. Additionally, the foreign language education program at the University of Pittsburgh has a close working relationship with the current teacher who was a recent graduate of the MAT program.

3.1.2 Program Description

The Spanish curriculum is composed of standards-based thematic units that take place over the course of a semester. These units, written by the Spanish teacher throughout the summer, are often based on the Spanish teacher's school-funded summer studies abroad. A recent unit taught by this teacher was based on her experiences studying abroad in Perú. Teaching within this theme, she provided countless opportunities for the students to work within each mode of

Communication, while meeting the other four goal areas of the National Standards for Foreign Language Learning: Cultures, Connections, Comparisons, and Communities (ACTFL, 1996). Each of the teacher's thematic units integrates the five goals of foreign language education while focusing on a single theme.

The Spanish program at this school was designed by following many of the recommendations of Curtain and Dahlberg (2010). Instruction was almost always in Spanish, with English used only for classroom management. The teacher followed the typical lesson plan format of *warm-up*, *input*, *guided practice*, *independent practice*, and *closure*. Because she only had fifteen minutes of instruction with each class, these components were often spread out over consecutive days, with each class containing *warm-up* and *closure*. Therefore, one day might focus mainly on *input*, while the following day might focus mainly on *guided practice*.

In the context of the present study, this format did not change. Even during the DA program, class always began with a *warm-up* and ended with *closure*. While the first two days were mainly *input*, the following three days were primarily *guided practice*. The four days of small group work were *the independent practice* portion of the lesson plan format. DA was not disruptive to the typical format of the Spanish program.

3.2 PARTICIPANTS

Participants in the present study were twenty students in a combined fourth and fifth grade classroom. While all of the students participated in this research, nine students were chosen as focal students. A sample size of nine was chosen so that extensive qualitative and quantitative data for each student could be collected and analyzed. Data from the Integrated Performance

Assessment (IPA) study conducted in the spring of 2010 lists the proficiency levels of students in third through fifth grade. Data from this previous study revealed that while some students were approaching intermediate low proficiency, no students were above this level (Appendix A).

3.2.1 Participant Selection

In order to answer these five research questions, a stratified purposeful sample composed of nine students from the class was used. Proficiency level was chosen as one learner characteristic in order to determine whether DA was useful for students at varying ability levels. As Vygotsky (1978) has pointed out, the size of a child's ZPD, calculated by the amount of expert assistance the child needs compared to their peers, can be more revealing than that child's actual development level (ADL).

A second identifying learner characteristic, voluntary oral participation, was also chosen. Participating orally during class allows learners to practice new vocabulary and grammar in context. Shrum and Glisan (2010) write that "Learners must be active conversational participants who interact and negotiate with the type of input they receive in order to acquire language" (p.21). Students who participated orally during class received more direct assistance on question formation than those who did not.

To identify levels of participation, an observation chart was used throughout a week of instruction before the DA program began in order to track the number of times each student participated orally during large group instruction (Appendix B). Each time that a child volunteered to answer a question orally during class, a tally mark was made by the student's name on the chart. This observation chart was shown to the classroom teacher to ascertain that the results reflected students' typical participation behavior. In order to operationalize

participation levels into the categories of frequent, occasional and rare, a cutoff number demarcating each category was determined from the data. Participation data was then matched with proficiency level data to choose the nine focal students. Table 2 illustrates the characteristics of these nine students.

Table 2. Description of Participants

Proficiency Level	Oral Participation during Large Group Instruction
Novice high	Frequent
Novice high	Occasional
Novice high	Rare
Novice mid	Occasional
Novice mid	Occasional
Novice mid	Rare
Novice low	Occasional
Novice low	Occasional
Novice low	Rare

While a sample that included a student who participated frequently, occasionally and rarely for each level of proficiency would have been ideal, this was not possible due to the characteristics of the pool of students determined by informed consent letters. While not truly representative or generalizable, this sample allowed for comparison between different levels of student achievement and quantity of class participation. Although the sample size in this study was too small to make generalizations, it allowed for a detailed, nuanced description of the nine focal students. As Allwright and Bailey (1991) write,

Instead of claiming that whatever has been discovered must be true of people in general, a naturalistic enquirer will claim that whatever understanding has been gained by an in-depth study of a real-life classroom may illuminate issues for other people. (p.51)

The present study contributes to the literature on DA and provides evidence of its applicability to foreign language classrooms, although it cannot be said that all students will respond in the same way as students in this study.

3.2.2 Grouping Configurations

To answer research questions two and three, students worked in small groups for four days throughout the DA program. Group work is a common configuration in foreign language classrooms because it allows all students the opportunity to speak (Curtain & Dahlberg, 2010). Groups of three were chosen by the teacher. The nine focal students in this study were divided into four groups. Development of three additional focal students was tracked to account for possible absences or attrition. Therefore, three students, Annie, Wayne and Alex are included below but will not be described in detail in Chapter 4. Table 3 represents the four groupings.

Table 3. Grouping Configurations

Group 1 (Thad, Elena and Takuya, respectively)	Novice high/rare participation Novice mid/rare participation Novice low/rare participation
Group 2 (Tom, Annie and Ivan, respectively)	Novice mid/occasional participation Novice mid/occasional participation Novice low/occasional participation
Group 3 (Sara, Mary and Jamal, respectively)	Novice high/occasional participation Novice mid/occasional participation Novice low/occasional participation

Group 4 (Roxanne, Wayne and Alex, respectively)	Novice high/high participation Novice high/high participation Novice high/high participation
----------------------------------------------------	----------------------------------------------------------------------------------------------------

As evident by this table, students were grouped based on participation levels as opposed to proficiency levels. This was done to ensure that students who frequently participated did not silence those students who rarely participated. For example, Elena, Thad and Takuya were three students who rarely spoke during Spanish class. By grouping them together, they were forced to become more vocal and all participated almost equally during group work.

3.3 RESEARCH QUESTIONS

This study was guided by the following five research questions:

Research Question 1: What characterizes large group dynamic assessment focused on the formation and use of Spanish interrogative structures? What are the students' responses during large group dynamic assessment of Spanish interrogative structures?

Research Question 2: How do students assist each other on the formation and use of Spanish interrogative structures during small group work following large group dynamic assessment?

Research Question 3: What similarities and/or differences are observed in the way students assist each other on the formation and use of Spanish interrogative structures during small group work following large group dynamic assessment?

Research Question 4: To what extent are students able to use Spanish interrogative structures in new contexts after the initial large group dynamic assessment?

Research Question 5: What syntactic and functional development of Spanish interrogative structures is observed in individual students while participating in dynamic assessment focused on this structure?

3.3.1 Alignment of Data Sources and Research Questions

The following sections of this chapter discuss the various ways that data were collected. Table 4 shows which data sources correspond to each research question.

Table 4. Alignment of Data Sources and Research Questions

	RQ1	RQ2	RQ3	RQ4	RQ5
Large Group Observations	X				X
Small Group Observations		X	X		X
Pre-test and Post-test				X	X
Transcendence Tasks				X	X

3.4 WRITTEN ASSESSMENTS

Each assessment task within the DA program imitated an authentic situation in which people must ask questions. Curtain and Dahlberg (2010) write that young students “are not able to focus on grammatical rules and reading and writing activities based solely on grammar” and that they need “reading and writing experiences that are connected to their lives in a natural way” (p.146). While these students practiced the use of grammatical rules and communicated through writing, they did this within authentic contexts. Students’ efforts did not explicitly center on how to form

a question in Spanish, but instead on tasks such as how to ask questions about Argentina. Therefore, mediation was provided on both the use and form of Spanish interrogatives.

3.4.1 Non-Dynamic Pre-test

The week before the DA program began, students were given a non-dynamic pre-test to determine their ability to form and use questions in Spanish. The purpose of the non-dynamic pre-test was to reveal the independent performance of the students, or their ADL. During this assessment, the teacher did not provide any assistance to the students and students were not allowed to consult classmates or any materials. At the end of class, these assessments were collected and scored, but were not returned to students. The pre-test, as well as the other assessments, were scored using the rubric found in Appendix C and further discussed in Section 3.4.5. The score on this assessment was compared to scores on the post-test and transcendence tasks to reveal development that occurred during the DA program.

Before the time at which the pre-test was given, students had not received direct instruction on the following question words in Spanish: *Qué* (what), *Cómo* (how) *Cuántos* (how many), *Quién* (who), *Cuándo* (when), *Dónde* (where), *Por qué* (why), nor had they received explicit instruction on how to form questions. The pre-test was intended to reveal the ADL of the students and any prior knowledge of interrogative use and formation so that development during the DA program could be tracked. Insight gained from this assessment helped to calibrate the DA program to the ZPD of the students by focusing on problem areas and misconceptions. On the pre-test, students were asked to list questions to answer the following prompt:

In two weeks, we will have a guest from Argentina visit our class. During this time, you will be given the opportunity to ask her any questions that you have

about Argentina. Please write as many questions as possible using only Spanish that you would like to ask. You might want to ask about the weather, the food, the people, different activities, landmarks or geography in Argentina. Only questions which use the words *who*, *what*, *when*, *where*, *why*, *how*, and *how many* will be scored.

3.4.2 Post-test

The teacher repeated this same assessment after the ten day DA program. In order to capture students' independent progress and to answer Research Question 4, mediation was not provided during the assessment. The post-test was scored using the same rubric as was used to score the pre-test, which can be found in Appendix C. The purpose of the non-dynamic post-test was to track students' development of Spanish interrogative use and formation by comparing scores on the post-test to those of the pre-test.

3.4.3 Near Transcendence Task

On Days 13-16, students continued to learn more about Argentina, but instruction did not address interrogative formation. The NTT then occurred on Day 17, five days after the end of the post-test. The NTT was a presentational task in which students were asked to design the question and answer (Q&A) section of a travel magazine about Argentina. The task read:

Viajar, a very popular travel magazine written in Spanish, has asked you to design a Q&A article about Argentina for the December issue. For this article, they would like for you to ask as many questions as possible about Argentina and

provide the answers to them. These questions should be designed to give the reader useful information about traveling to Argentina. Today your task is to develop the questions. Only questions which use the words *who*, *what*, *when*, *where*, *why*, *how*, and *how many* will be scored.

The purpose of the NTT was to examine whether students could extend their knowledge of Spanish interrogatives to a new context. While this task was similar to the pre-test and post-test, it differed in two significant ways. First, the context was different in that students were writing for a magazine instead of composing questions for a guest. In this scenario, students posed as the experts themselves, instead of as the curious travelers. In educational settings, students must be able to apply knowledge learned in one context to new, future contexts.

The NTT was scored using the same rubric as the pre-test, post-test and FTT. Using the same rubric for all four tasks allowed for comparison among scores and individual rubric categories, as further explained in Section 3.4.5.

3.4.4 Far Transcendence Task

On Day 23, students were given a FTT to assess whether their learning would transcend to a new modality, speaking. This task was to pose as a study abroad director and interview a classmate posing as an interested student. The individual task read:

You are the director of a study abroad program that is planning a trip for students to Argentina. You can only take ten students, but fifteen have applied. Therefore, you must conduct interviews to determine which students you will take. Please interview your classmate to determine if he or she is someone you would like to

take on your trip. Only questions which use the words *who*, *what*, *when*, *where*, *why*, *how*, and *how many* will be scored.

The purpose of the FTT was to determine whether students could extend their knowledge to even further contexts. While the FTT still centered on the theme of the thematic unit, Argentina, it differed in several important ways from the previous tasks. In this case, the context no longer involved asking about Argentina. Instead, the context involved eliciting personal information in the form of an interview. The students were asked to play the role of an interviewer and orally ask their partner questions. The inclusion of oral, spontaneous communication served to probe students on how far their learning would transcend.

3.4.5 Scoring Rubric

The pre-test, post-test, NTT and FTT were all graded using the same rubric which can be found in Appendix C. Students had an opportunity to review and discuss this rubric before the assessment tasks. The rubric focused on both usage and form and incorporated five criteria: *language function*, *language control*, *vocabulary*, *impact*, and *comprehensibility*. *Language function* referred to question use, whether the question was appropriate for the context. *Language control* referred to whether the word order in the question was correct. *Vocabulary* referred to whether the correct WH- question word was used. *Impact* referred to how many questions the student was able to write. Finally, *comprehensibility* referred to whether the questions were comprehensible to “those accustomed to interacting with language learners” (ACTFL, 2006). These categories were drawn from the ACTFL rubric for novice level presentational communication, although one category from that rubric was omitted. *Text type* was omitted

because writing questions does not require including “strings of sentences” or using “cohesive devices”.

In several circumstances, it was difficult to decide whether a student chose the correct question word (*vocabulary*) because multiple question words were grammatical in the same sentence, as in the example below:

20. ¿Cuándo come el almuerzo?

When do you eat breakfast?

21. ¿Dónde come el almuerzo?

Where do you eat breakfast?

When this occurred, as long as the question had meaning, the student received full points for *Vocabulary*.

3.5 OBSERVATION DATA

3.5.1 Classroom Observations

Each class period was observed using an observation protocol in order to record students’ attempts at asking questions, mediation provided by the teacher or peers in response, and students’ responses to this mediation. The observation protocol in Appendix D was used to record and code this data.

3.5.2 Small Group Observations

In order to answer research questions two and three, the four groups composed of nine focal students were observed. Each of these small groups was videotaped and all dialogue was transcribed to capture peer mediation. Because it was not expected that students would follow the mediation prompts outlined in Appendix E, a pre-determined observation protocol was not used. Section 3.8.1 describes how mediation offered by group members was coded and categorized.

3.6 DYNAMIC ASSESSMENT PROGRAM

3.6.1 Teacher Preparation for DA

To prepare the Spanish teacher to dynamically assess her students, the researcher met with her on multiple occasions to explain the technique and answer questions. This teacher had read about DA in the assessment course during her MAT program the year before, but had no experience with implementation. Therefore, on two occasions, the researcher met with the teacher and explained the goals and technique of DA. During these meetings, they also collaborated to create the standardized prompts that would be used during the DA program. They discussed the importance of providing mediation arranged from implicit to explicit. They also determined what aspects of question use and formation should be targeted. Once the DA program began, the researcher was present during class each day to observe progress and answer any questions from the teacher.

3.6.2 Description of Mediation

Appendix F shows an outline of the focus of instruction on each day of data collection, as well as where each written assessment task fit into the DA program. The DA program, during which observations were conducted, continued for ten days. The DA program differed from the teacher's normal instruction in that standardized mediation prompts focused on question formation were provided to students when required. As the teacher instructed students on how to form interrogatives, she also assessed their progress and provided mediation. When a student asked a grammatically inaccurate question, the teacher provided a series of graduated prompts, arranged from implicit to explicit, to help the student re-formulate the question correctly. The mediation prompts used are provided in Table 5.

Table 5. Mediation Prompts Provided by Teacher

Level of Explicitness	Mediation Move
Prompt 1	Pause with skeptical look
Prompt 2	Repetition of entire phrase by teacher
Prompt 3	Repetition of specific site of error
Prompt 4	Forced choice option
Prompt 5	Correct response and explanation provided

A typical exchange might unfold in the following way:

1. S: ¿Cómo le gusta hacer en Buenos Aires?*
- How do you like to do in Buenos Aires?
2. T: (pauses and looks quizzically at student)
3. S: ¿Cómo...
- How...
4. T: ¿Cómo le gusta hacer en Buenos Aires?*
- How do you like to do in Buenos Aires?

5. S: ¿*Dónde*?
Where?
6. T: ¿*Cómo* le gusta?
How do you like?
7. S: (silence)
8. T: ¿*Cómo* o *qué*?
How or what?
9. S: ¿*Qué* le gusta hacer?
What do you like to do?
10. T: Sí, ¿*Qué* significa *qué* en inglés?
Yes, what does *qué* mean in English?

During the DA program, mediation prompts were arranged from implicit to explicit. While students further along in their ZPD might be able to formulate the correct phrase after line 23 in which the teacher pauses and gives the student a moment to think, others might require the more explicit prompt in line 29 in which a forced choice question is given. In other cases, the teacher might reach Prompt 5 in which she tells the student the correct answer and provides an explanation. With each interaction, mediation moves provided by the teacher were recorded in order to track each student's development. Mediation is defined as assisting prompts arranged from implicit to explicit that are intended to promote development.

In this study, assistance was focused on WH-questions only. Three aspects of question formation were addressed: (1) Choice of the correct question word; (2) Correct word order; and (3) Inclusion of all necessary components (verb, possessive pronoun, etc). Any other errors, such as incorrect conjugations of the verb or incorrect article, were ignored. Mediation prompts were provided only for aspects of the language that students were studying.

Throughout the ten day DA program, the 'cake' format of DA was implemented. During class, when students formed WH- questions inaccurately, the teacher provided immediate

mediation. With this format, the teacher was able to immediately indicate errors to the students. Mediation was provided until the student formulated the question correctly, at which point the next question was asked (Sternberg & Grigorenko, 2002).

One last important distinction to clarify is the choice between the concurrent or cumulative approach to group DA as discussed in Chapter 2. In this DA program during large group work, the teacher used the cumulative approach. Therefore, the teacher provided mediation to the student who initially formulated the question incorrectly until he or she was able to formulate the question correctly.

3.7 SPANISH INTERROGATIVE FORMATION

Questioning is an important concept in developing foreign language proficiency as it is one key feature that distinguishes novice level speakers from intermediate level speakers (ACTFL, 1999). After the IPA study the previous year had identified the need to teach students how to form questions in Spanish, a specific type of question was chosen to target in this study. While these students were able to correctly form basic yes/no questions such as *¿Te gusta jugar tenis?* (Do you like to play tennis?) as well as basic either/or questions such as *¿Es rojo o verde?* (Is it red or green?), they had no knowledge of WH- question formation. Many of the students did not know how to say the words *who, what, when, why, where, how* and *how many* in Spanish.

3.8 ANALYSIS

3.8.1 Coding Observational Data

All observation protocols were compiled for each of the nine focal students. The quantity of mediation prompts required by the focal students throughout the ten day DA program was recorded to track movement from assisted to unassisted performance.

For all small group activities, only the mediation provided in the four focal groups was transcribed and coded. Grounded theory was used to code this mediation and students' reciprocal moves as these could not be anticipated. All mediating moves were coded and categories were created based on these moves.

3.8.2 Data Analysis

Descriptive statistics were used to analyze quantitative data. Once all mediating prompts required by the nine focal students were coded, they were tallied and recorded in a spreadsheet to indicate the amount of mediation required by each student throughout the ten day DA program. Frequency counts illustrated how the amount of mediation needed changed throughout the program. The mode was used to illustrate how the explicitness of the mediation changed throughout the program.

The scores on each of the four assessments were tabulated in a spreadsheet and compared for each focal student to track development that occurred throughout the present study, or movement through the ZPD. Scores on *Language Function*, *Language Control*, *Vocabulary Impact*, and *Comprehensibility* for each of the four tasks were compared for each student. This

comparison allowed for analyses such as whether *Impact* decreased as the context changed or whether *Vocabulary* scores remained consistent across assessments.

3.9 CONCLUSION

This study followed the development of nine fourth and fifth grade students as they studied the syntax and functions of questions. This study is unique in that mediation was offered in a classroom setting and was integrated into the existing Spanish curriculum. After a pre-test, students participated in a ten day DA program in which the teacher focused on the formation of Spanish WH- interrogatives. During this program, mediation was offered during large group work as well as during small group work. After ten days of DA, students repeated the non-dynamic pre-test and then completed non-dynamic near and far transcendence tasks.

In order to track mediation and development, nine focal students were selected. All mediation provided to these students throughout the DA program by both the teacher and their peers was recorded. Scores from their four assessments were also tabulated and analyzed.

4.0 FINDINGS

This chapter details the findings in regard to each of the five research questions that guided this study. Each major section of the chapter reviews a research question, data collection methods and the findings for that research question. As described in Chapter 3, data collection occurred over a period of twenty three Spanish classes. Before the dynamic assessment (DA) program began, the researcher met with the classroom teacher to discuss when and how mediation would be provided during the DA program. Together, the researcher and teacher developed pre-determined mediation prompts that would be followed when students required mediation to correctly form a question (see Appendix E). These prompts were not used before the DA program; therefore they represented a departure in practice for the teacher. To assure fidelity of implementation, as well as to track the development of students, the researcher was present during each of these twenty three Spanish classes. When questions arose from the Spanish teacher about DA procedures, she and the researcher would discuss them.

4.1 CHARACTERISTICS OF GROUP DYNAMIC ASSESSMENT

In this section, the findings on the teacher's approach to DA and the students' responses are addressed to answer the questions, *What characterizes large group dynamic assessment focused on the formation and use of Spanish interrogative structures? What are the students'*

responses during large group dynamic assessment of Spanish interrogative structures? This section will focus on the mediation required by students in the large group setting, as opposed to when students worked in small groups. Large group setting refers to the configuration in which instruction was teacher-fronted. Patterns in student responses will also be examined.

4.1.1 Context

The first five days of the DA program consisted of large group instruction and the next four days consisted of small group work. The DA program ended on Day 10, when students reconvened into a large group in order to share the questions that they had created in groups. This section will focus on the mediation required by students to correctly form questions during large group instruction, Days 1-5 and Day 10. Days 6-9 will be discussed in Section 4.3.

As detailed in Chapter 3, five standardized mediation prompts were provided to students by the teacher throughout the DA program. When a student formed a question incorrectly, the teacher began by offering the most implicit prompt and then gradually gave more explicit prompts until the student was able to form the question correctly. Students were only held accountable for aspects of question formation that they had studied. These included: (1) Choice of the correct question word (ie. *dónde, qué*, etc); (2) Correct word order; and (3) Inclusion of all necessary components (i.e. verb, possessive pronoun). All other errors were ignored and not mediated by the teacher.

4.1.2 Mediation Prompts

Mediation prompts were arranged from most implicit to most explicit. The first and most implicit prompt (Prompt 1) was a pause accompanied by a skeptical look from the teacher. If the student did not correct the error, the teacher would provide the second prompt (Prompt 2), repetition of the entire question. If the the third prompt (Prompt 3) was required by the student, the teacher would repeat only the part of the question that contained the error. If necessary, this prompt was then followed by an even more explicit prompt (Prompt 4) in which the teacher provided the student with a forced choice either/or option. For the fifth prompt (Prompt 5), the teacher would correctly form the question for the student and explain the student's error. Throughout the five days of large group instruction, the number of prompts required by each student and by the class as a whole was recorded.

4.1.3 Change in Mediation Required

The number of mediation prompts required by the class as a whole generally decreased throughout the DA program. Students required fewer prompts, and therefore less explicit prompts, on each subsequent day of the DA program, with the exception of Day 4. Figure 1 shows the decrease in mediation that occurred.

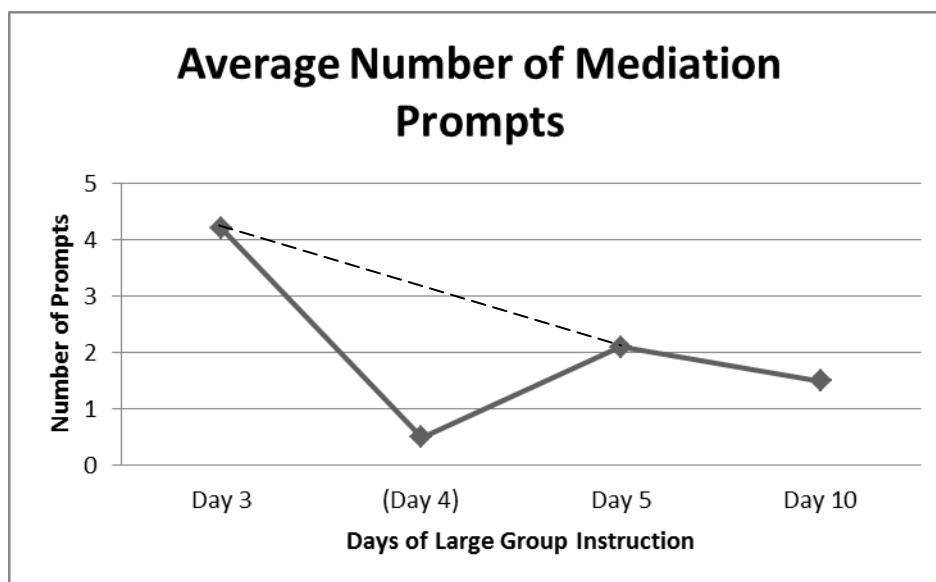


Figure 1. Decrease in Mediation

To calculate the average number of prompts required on each day of large group instruction, the total number of prompts required for that day was divided by the total number of interactions that occurred. An interaction consisted of a student asking a question orally and the teacher providing mediation until the question was correctly formed.

Figure 1 depicts the decrease in mediation that occurred throughout the DA program. On the first day of question formation (Day 3 of the DA program), an average of 4.2 mediation prompts were provided for every question formed. To correctly form a question, the majority of students required at least Prompt 4, a forced choice option. Day 4 is placed in parentheses and omitted from discussion as only two interactions occurred on this day. The following day, Day 5, the average number of mediation prompts required was 2.1. The amount of prompts required by students to correctly form a question decreased by 50%. These initial days were followed by four days of small group work, after which students reconvened in the the large group setting (Day 10) to share the questions formed during group work. On Day 10, the average number of mediation prompts decreased even further to 1.5. Days 1 and 2 of the DA program were omitted because students were learning WH- question words on those days, therefore they had not yet

begun to form questions. The following section will describe in more detail the mediation required by students on each of the four days of large group instruction. For each day of large group instruction, the context of the lesson and a table detailing the amount of mediation required is provided.

4.1.4 Mediation Required on Day 3

Day 3 of the DA program was the first day in which students began to form questions. Class began with students playing a game in which they rolled a paper cube. On each side of the cube a different question word was written. Students were asked to define the question word that landed on top when the cube was rolled. After reviewing question words, the teacher asked students to form a question with whichever WH- word was visible on the top of the cube. Students raised their hands to volunteer and the teacher wrote their questions on the board. When a student formed a question incorrectly, the teacher offered the necessary prompts as described above until the student correctly formed the question. If the student could not form the question, the teacher explained the error and provided the correct formation.

Table 6 shows the number of interactions that occurred on Day 3, the number of mediation prompts required for each interaction, the question that the student was attempting to ask, and the source of the student's error. The column, *Number of Mediation Prompts*, also represents the quality of mediation required in that prompts were provided only when necessary, and were arranged from most implicit to most explicit. For example, when the number five appears, the student required the most explicit prompt, Prompt 5.

Table 6. Mediation on Day 3

Interactions	Number of Mediation Prompts	Question Asked	Source of Error
Interaction 1	0	¿Dónde está la capital de Argentina? (Where is the capital of Argentina?)	No Error
Interaction 2	5	Qué significa what. (Qué means what.)	Question Word
Interaction 3	5	¿Qué es tu equipo de fútbol favorito? (What is your favorite soccer team?)	Question Word; Word Order
Interaction 4	3	¿Dónde está River Plate? (Where is River Plate?)	Word Omission (verb)
Interaction 5	4	¿Qué es tu actividad favorita? (What is your favorite activity?)	Word Order
Interaction 6	4	¿Qué es tu equipo favorito? (What is your favorite team?)	Word Order

Number of Mediation Prompts: 0=no mediation; 1=pause; 2=repeat question; 3= repeat incorrect part of question; 4= either/or option; 5=provide correct answer.

Table 6 reveals that each participant with the exception of the student in Interaction 1 needed at least three mediation prompts in order to form a question correctly. When looking at the prompts required on Day 3 in isolation, it is not possible to see a reduction in the amount of mediation required.

4.1.5 Mediation Required on Day 4

On Day 4, the majority of class was devoted to the explanation of verbs. This explanation was triggered by the teacher's realization that many students did not know that all questions required a verb. After this explanation, there was only time for two students to ask questions. As a result, the average number of mediation prompts required on Day 4 was only 0.5. Table 7 illustrates the mediation required on Day 4.

Table 7. Mediation on Day 4

Interactions	Number of Mediation Prompts	Question Asked	Source of Error
Interaction 1	1	¿Cómo esquías? (How do you ski?)	Word Omission (verb)
Interaction 2	0	¿Qué es tu equipo favorito? (What is your favorite team?)	No Error

Because so few interactions occurred on Day 4, no usable data on mediation were found.

4.1.6 Mediation Required on Day 5

On Day 5, the teacher posted large pieces of butcher block paper to the board and asked students to state questions in Spanish that they would like to ask the guest from Argentina. On Day 5, ten interactions occurred during the 15 minute Spanish class. The average number of mediation prompts required was 2.1. Table 8 shows the mediation that occurred on Day 5.

Table 8. Mediation on Day 5

Interactions	Number of Mediation Prompts	Question Asked	Source of Error
Interaction 1	2	¿Qué come? (What do you eat?)	Word Omission (verb)
Interaction 2	0	¿Quién es tu cantante favorita? (Who is your favorite singer?)	No Error
Interaction 3	4 (either/or) (but repeated 3 times)	¿Dónde esta el estadio de River Plate? (Where is the River Plate stadium?)	Word Order
Interaction 4	1	¿Cómo estás? (How are you?)	Word Omission (verb)

Interaction 5	0	¿Qué es actividad favorito? ³ (What is favorite activity?)	No Error
Interaction 6	2	¿Dónde está tu lugar favorito? (Where is your favorite place?)	Word Order/ Word Omission (tu)
Interaction 7	2	¿Qué es tu deporte favorito? (What is your favorite sport?)	Word Order
Interaction 8	4	¿Qué tiempo hace? (What is the weather like?)	Word Omission (verb)
Interaction 9	2	¿Qué es tu baila favorita? (What is your favorite dance?)	Word Order
Interaction 10	4	¿Dónde es baile favorito? ⁴ (Where is your favorite dance?)	Question Word

Table 8 illustrates the large variety of questions that students were able to ask. On this day, students began to experiment more with the language and ask less formulaic questions. Students created their own questions such as *¿Dónde está tu lugar favorito?* (Where is your favorite place?) Despite this creativity, mediation on Day 5 decreased from Day 3.

4.1.7 Mediation Required on Day 10

The first five days of large group instruction were followed by four days of group work, after which the students returned to the large group setting for one final day of mediation. On this day, Day 10, students were asked to share the questions that their group had written for the guest speaker from Argentina. They were not given the paper on which they had written their questions and therefore had to recall their questions from memory. As individual students shared questions, the teacher wrote these questions on the board and again used the same five mediation prompts

³ Omission of possessive pronoun, tu, was overlooked by teacher.

⁴ Omission of possessive pronoun, tu, was overlooked by teacher.

described above. On Day 10, thirteen interactions occurred during the class period. Table 9 shows the interactions that took place.

Table 9. Mediation on Day 10

Interactions	Number of Mediation Prompts	Question Asked	Source of Error
Interaction 1	2	¿Quién es tu cantante favorita? (Who is your favorite singer?)	Question Word
Interaction 2	0	¿Dónde vives? (Where do you live?)	No Error
Interaction 3	0	¿Cómo estás? (How are you?)	No Error
Interaction 4	0	¿Cuándo es tu cumpleaños? (When is your birthday?)	No Error
Interaction 5	2	¿Cuándo es el baile? (When is the dance?)	Word Omission (subject)
Interaction 6	4	¿Dónde vives? (Where do you live?)	Word Omission (verb)
Interaction 7	0	¿Qué es tu comida favorita? (What is your favorite food?)	No Error
Interaction 8	0	¿Cómo es Argentina? (What is Argentina like?)	No Error
Interaction 9	4	¿Qué es la capital de Argentina? (What is the capital of Argentina?)	Word Omission (article)
Interaction 10	0	¿Qué es tu actividad favorita? (What is your favorite activity?)	No Error
Interaction 11	3	¿Qué es tu región favorito? (What is your favorite region?)	Word Order
Interaction 12	3	¿Quién es tu actor favorito? (Who is your favorite actor?)	Question Word; Word Order

According to this table, six questions were formed correctly and did not require any mediation. In none of the interactions on Day 10 was the teacher required to use the fifth mediation prompt in which she corrected the error for students. In only two cases was the fourth mediation prompt required in which she provided an either/or option.

4.1.8 Source of Errors

The primary source of students' errors changed throughout the DA program, as illustrated by Figure 2. On Day 3 of the DA program, students mostly struggled with choosing the correct question word and placing their words in the correct order. Errors with word order almost always dealt with the placement of the adjective with the noun that it modified. By Day 5, students struggled less with the question word and most with word order and word omission. By Day 10, the majority of questions formed by students contained no error. The most common errors on Day 10 were word omission errors in which students failed to include a verb or the possessive pronoun *tu*.

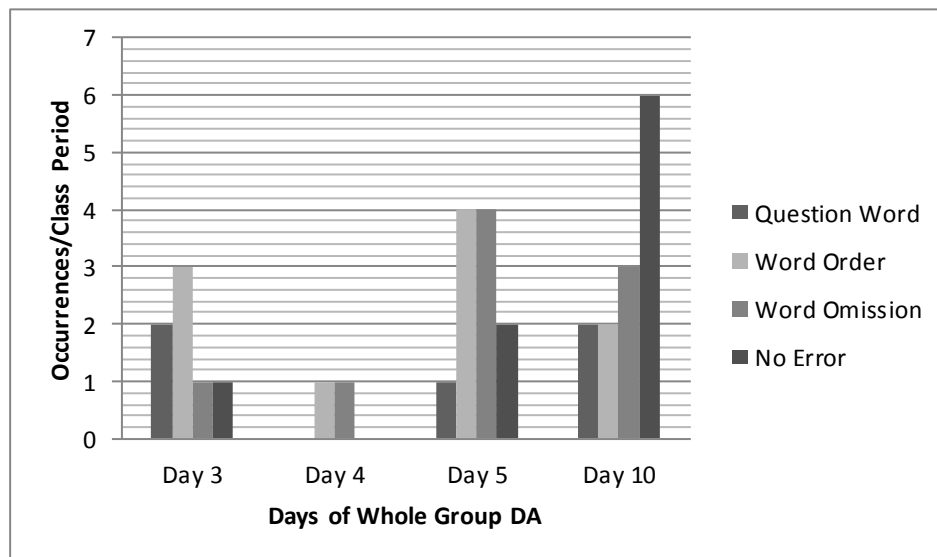


Figure 2. Source of Errors

4.1.9 Summary

By viewing the mediation that occurred on each of these four days of the DA program, a clear decrease in the amount of mediation can be seen. This decrease in mediation indicates that

question use and formation was moving from the group's ZPD to their Actual Development Level (ADL) where they could perform without mediation. While the prompts provided on each individual day do not show a decrease in mediation, this is due to the function of the task rather than the internalization of the assistance. This observation suggests that the effects of DA in a large group setting must be viewed longitudinally, as opposed to viewing snapshots of the progression of mediation in a single class session. By viewing this data longitudinally, a trend in the type of errors that occurred can be seen. While students initially struggled with identifying the correct question word, they gradually began to internalize this vocabulary. By Day 10 of the DA program, most of their errors dealt with word omission or word order and not the selection of the WH- word for their questions.

4.2 PEER MEDIATION

In order to answer the research question, *How do students assist each other on the formation and use of Spanish interrogative structures during small group work following large group dynamic assessment?*, focal students were arranged in four groups of three and their interactions were audio and video recorded. These recordings were then transcribed and coded. All instances of peer mediation were examined and categorized. It must be noted that the term *mediation* is used loosely in this context. Whether the assistance that occurred during small group work was actually mediation or simply help will be discussed further in Section 5.2.1.

4.2.1 Context

Students worked in groups for four days, Days 6-9, after the first five days of the DA program. During the first two days of group work, students worked in groups of three to write questions for the guest speaker from Argentina that would soon visit their classroom. On the third day of group work, each group traded their questions for questions created by another group. They were given the fifteen minute class period to review these questions and circle any errors. On Day 9, the fourth day of group work, students received their questions from the group who had circled their errors. They were then given the class period to correct these errors as a group. Groups that finished early were asked to write additional questions.

Students were not taught to mediate their peers for the present study. The peer mediation that occurred during group work was unsolicited by the teacher or researcher. While it was expected that students might naturally mediate their peers, they were not asked to do so.

4.2.2 Peer Mediation Moves

Analysis of group work transcriptions revealed many instances of peer mediation. There were eleven peer mediation moves that occurred at least three times during the four days of group work. These eleven peer mediation moves are listed in Table 10.

Table 10. Peer Mediation Moves

Peer Mediation Moves	Number of Occurrences
English translation	16
Spanish translation	11
Correction of classmate	10
Critical assessment (e.g., “that’s not a good one”, “that’s so stupid”)	9
Request to stay on task	8
Takes paper and assists	8
Assistance with spelling	5
Help with punctuation	4
Prodding classmate to think	4
Repeat as a question (e.g., “¿dónde?”)	3
Positive feedback (e.g., “that’s an interesting one” or “that’s right”)	3

Examples of the five most common peer mediation moves are provided below: English translation, Spanish translation, correction of classmate, critical assessment and request to stay on task. The most common form of mediation provided by students was English translation. In sixteen interactions, students translated a word in Spanish to English for a group member. In many cases, a classmate requested this translation as in lines 33 and 34:

33. St 1: *Cómo*...what’s *cómo* mean?

34. St 2: I’m going to close the door all the way. *Cómo* is like..*Cómo* is like how or something.

The second most common form of peer mediation was Spanish translation. Eleven instances occurred in which a student provided a necessary word in Spanish. For example, a classmate often requested this word by asking a question such as “How do you say *where*?”

35. St 1: How do you do... what’s where?

36. St 2: Oh, *dónde*. Where is *dónde*.

The third most common form of peer mediation was correction of a classmate. With this form of peer mediation, one group member would make a statement and another group member would refute that statement, as in lines 37-39.

37. S1: *Quién* is when

38. S2: No, *quién* isn't when

39. S1: *Cuándo* is when, right?

In this example, Student 1 states that *quién* means 'when'. It actually means *who*, as Student 2 seems to realize when she says "*quién* isn't when".

The fourth most common form of peer mediation was providing a critical assessment. Mediation during group work was not positive in every instance. On nine occasions, students made comments such as "that's not a good one" or "that's so stupid". Lines 40 through 43 illustrate one example.

40. S1: How do you cook your dinner?

41. S2: (laughing) How do you cook your dinner?!? That's so stupid!

42. S3: Qué es...

43. S1: Stop laughing!

In this example, one group member ridicules another for her idea and provides a critical assessment of her contribution. As a result, the group skips this question and moves on to a different question, leaving Student 1 embarrassed.

The fifth most common peer mediation move was a request for group members to stay on task. This was quite common in all of the groups. The following lines illustrate a typical example of this mediation prompt.

44. S1 and S2: (chatting about Halloween)
45. S3: Okay, let's go...let's go!
46. S1: Where do you live? Where do you live?

In this example, like many others, two of the group members got off task and began to talk about Halloween. The third group member brought them back on task by emphatically stating, "let's go!" The group then returned to forming questions.

4.2.3 Collective Scaffolding

In many cases, students collaborated as a group to form a question. The following example shows the group process of forming a question.

47. St 1: Okay, so let's break it down.
48. St 1: Qué
What
49. St 2: (shakes her head) What...
50. St 1: Qué es
What is
51. St 2: Qué es tu
What is your
52. St 1: Qué es tu
What is your
53. Chorus of St 1, St 2 and St 3: Qué es tu
What is your
54. St 3: favorito
favorite
55. St 1: favorito
favorite

56. St 2: favorito doesn't come first
57. St 1: Oh yeah
58. St 2: Qué es tu fútbol
What is your soccer
59. St 1: No, there's something...team
60. St 2: equipo!
team
61. St 1: Oh, equipo yeah
62. St 2: equipo favorite
favorite team
63. St 2: How do you spell equipo?
- (St 1 takes the notebook and writes out equipo)
64. St 1: something like that, right?
65. St 2: (nods) yeah.

In this excerpt, all three members of the group helped to form the question *What is your favorite soccer team?* This was a difficult question that none of the group members could form alone. The question was within the ZPD of the group, but not within the ADL of any of the individual group members. Because each member offered mediation, the group was able to correctly write the question. This excerpt highlights the collective scaffolding that occurred regularly during group work. Students mediated each other's performance by breaking the task down into manageable parts.

4.2.4 Comparison of Peer Mediation to Teacher Mediation

The second research question that focused on peer mediation asked, *What similarities and/or differences are observed in the way students assist each other on the formation and use of Spanish interrogative structures during small group work following large group dynamic assessment?* To answer this question, the peer mediation moves outlined in Section 4.2.2 were compared to the mediation protocol followed by the teacher. While there was a slight overlap in the mediation moves used by the teacher and the students, in general, students mediated their peers in different ways.

4.2.4.1 Similarities of Peer and Teacher Mediation

On several occasions, students' mediation moves mirrored those of their teacher. On three occasions, students repeated a question or word that a classmate had uttered as a question, similar to Prompts 2 and 3 provided by the teacher, as in lines 66 through 70.

66. S1: ¿Cuándo es ummm ...cumpleaños?
When is ummm...birthday?

67. S2: cumpleaños...¿cuándo es?
birthday....when is?

68. S3: ¿Cuándo es?
When is?

69. S1: ¿Cuándo es?
When is?

70. S2: (sounding out) cum-ple-añ-os
birthday

In this excerpt, each of the three students in the group worked together to write a question. The phrase *¿Cuándo es?* (When is?) was repeated by all students in the group as they formed this question. It is not clear whether students repeated this phrase to express doubt or whether it was repeated simply to assist the person in the group transcribing the questions. In either case, it was a form of mediation that occurred during group work that mirrored mediation provided by the teacher.

A second way in which students appropriated the mediation of their teacher occurred in their attempts to keep each other on task, as in the following lines.

71. (Student 2 leans out the door and says to other student, ‘You guys are not recorded!)
72. St 1: S2, S2 (hands him the paper) you know we are being video- recorded. We are getting off task, so, just...Go, S2...Cómo
73. S2: Cómo...what’s cómo mean?
74. S1: I’m going to close the door all the way. Cómo is like...Cómo is like how or something.
75. S3: How?

In lines 71-75, Student 1 recognized that the group was getting off task when one group member began to taunt a member of another group. Not only did Student 1 scold the group members, but she also closed the door of the office where they were working to block out any distractions. Her attempts to keep her peers on task were similar to those of the Spanish teacher. On many occasions, the Spanish teacher made similar requests of students. On Day 5 of the DA program, she scolded the class by saying, “This group over here already has a lot of their questions done. In the other groups, I hear a lot of talking and laughing and it’s not related to

what we are talking about!” Although requesting that students stay on task was not one of the mediation prompts in the DA mediation protocol, it was a form of mediation appropriated by students.

4.2.4.2 Differences in Peer and Teacher Mediation

The students largely used explicit forms of mediation such as ‘English translation’, ‘Providing word’ and ‘Correction of classmate’, as opposed to mirroring the teacher’s use of graduated hints. For example, lines 76-78 are an excerpt from Day 10 of the DA program in which the teacher mediated a student.

76. S1: ¿Qué es tu cantante favorito?
What is your favorite singer?
77. T: (pauses and looks skeptically at student)
78. S1: Oh! ¿Quién es tu cantante favorito?
Oh! Who is your favorite singer?

In this example, the student required only the most implicit prompt, Prompt 1 to correct her error. The following lines are an example from group work in which a similar error was made.

79. S1: Dónde
Where
80. S2: Dónde está
Where is
81. S3: Dónde...dooooonde...Dónde is where...where is...your
82. S2: nombre...what is your name?
83. S1: Don’t do nombre! Where is your name!?
84. S2: Dónde es tu...
Where is your...
85. S3: You said ‘dónde es tu nombre?’

86. S1: Where is your name!

87. (laughing by all group members)

In this example, similar to lines 76-78, an incorrect question word was used. The mediation provided by the group members was much more explicit than the mediation that the teacher would have provided. The students in this group translated the question to English for Student 2 in lines 83 and 86, revealing how odd this question would be in English. All group members then laughed about the funny question that they had created. The teacher, following the DA protocol, would have looked skeptically at the student or repeated the question. Instead of providing a more implicit prompt, or a series of prompts, the students immediately provided the most explicit prompt.

4.2.5 Summary

During group work, students provided mediation to their peers in order to correctly form interrogative sentences. Most questions were formed collectively by the group members, as opposed to individual students forming questions for the group. The most common forms of mediation were 'English translation', 'Spanish translation', 'correcting classmates' and 'requests to stay on task'. In the case of English and Spanish translation, this assistance was often requested by a group member. While some students did mirror a few mediation prompts that the teacher used such as repetition or a forced choice option, the mediation that students provided was generally more explicit. A discussion of this finding is found in the next chapter.

4.3 TRANSCENDENCE TASKS

The fourth research question in the present study asked, *To what extent are students able to use Spanish interrogative structures in new contexts after the initial large group dynamic assessment?* To answer this question, four assessments were administered to students. Each assessment was scored using the same rubric, modeled after the novice level rubrics provided in the Integrated Performance Manual distributed by the American Council on the Teaching of Foreign Languages (ACTFL, 2006). Scores on each assessment were tracked for each student and averages were calculated.

4.3.1 Context

A pre-test was given the day before the DA program began. On this assessment, students were asked to write questions that they would like to ask a visitor from Argentina. They were told to write as many questions in Spanish as possible during the 15 minute period. After the ten day DA program, this exact assessment was administered on Day 11 as a post-test. Six days later, a near transcendence task (NTT) was given on Day 17. On this assessment, students were asked to create a Question and Answer (Q&A) column about Argentina for a travel magazine. They were given the 15 minute class period to prepare the questions that they would include. A far transcendence task (FTT) was given on Days 23, 24, 25 and 26. Because Spanish class was only fifteen minutes per day and the FTT required pairs of students to be assessed individually, four days were required for this assessment. Due to time constraints, the FTT was only administered to twelve students: the nine focal students and three additional students. On the FTT, students were told that they were in charge of taking ten students on a study abroad trip to Argentina.

Because fifteen wanted to go, they had to interview a classmate to determine if they wanted to take that student. As discussed in Chapter 3, the NTT required students to apply their knowledge of question formation in a new context. The FTT required students to apply their knowledge in an even further context, in this case, in an oral assessment.

4.3.2 Trends in Performance

Table 11 shows the scores of the focal students on the pre-test, post-test, NTT and FTT. These scores will be discussed in further detail in Section 4.4. The highest possible score on each of the assessments was 20 points.

Table 11. Performance Across Assessments

Students	Pre-test	Post-test	NTT	FTT
Annie	5	17	5	16
Alex	10	19	20	20
Jamal	5	17	5	11
Elena	8	20	17	20
Ivan	5	20	19	16
Mary	5	20	11	18
Roxanne	5	20	18	20
Sara	5	20	18	20
Takuya	5	18	16	18
Thad	5	20	15	19
Wayne	15	20	19	19
Tom	8	19	18	20
Total	6.75	19.17	15.08	18.08

In this table, we see that all focal students scored 8 or less out of 20 on the pre-test. Only Elena and Tom achieved the score of 8, with the other seven students receiving a five. A five was the

lowest score possible because the scoring rubric did not have a column labeled zero. Therefore, if a student received the lowest possible score across the five categories, he or she received a five. Scores on the post-test ranged from 17 to 20, with the average score being a 19.17. The range of scores on the NTT was much larger, from the lowest possible score of 5 to the highest possible score of 20. This large variation in scores indicates that while some students were able to transcend their knowledge to the new task, other students had not developed interrogative use and formation well enough for application in a new context. The average score on the NTT was 15.08. Scores on the FTT improved, however, and ranged from 11 to 20, with the average score being 18.08. Possible explanations for this increase will be discussed in Chapter 5.

Every student scored better on the post-test than the pre-test. Based on the Wilcoxon signed-rank test, this finding was statistically significant at the $p < .01$ value. A comparison of the post-test to the NTT reveals that the score of one student increased and the score of nine students decreased. This decrease in performance was also statistically significant at the $p < .01$ value. Comparison of the NTT to the FTT shows that nine students' scores increased, two students' scores remained the same, and only one student's score decreased. This change was statistically significant the $p < 0.05$ value.

4.3.3 Performance Across Rubric Categories

As detailed in Chapter 3, the scoring rubric for these assessments consisted of five categories: language function, language control, vocabulary, impact and comprehensibility. The category language function scored the appropriateness of the question for the context. Language control scored the word order. Vocabulary scored whether the correct question word was chosen. Impact scored the number of questions written in the fifteen minute class period. Comprehensibility

scored whether the questions could be understood by a sympathetic reader/listener. Figure 3 highlights the performance across the assessments on each of these five categories.

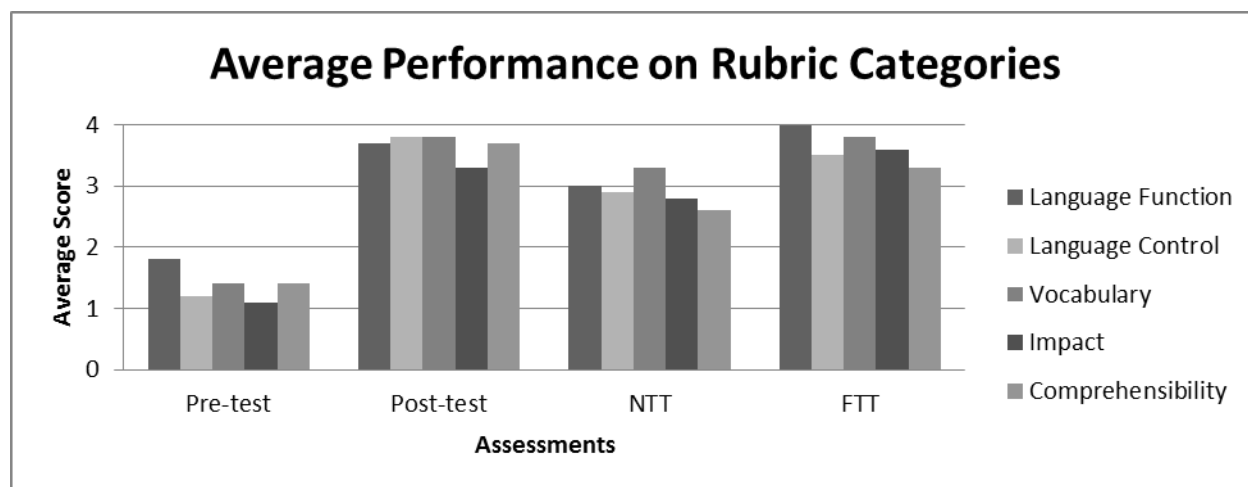


Figure 3. Performance on Rubric Categories

Several observations can be made based on these findings. In the first category, language function, students scored the highest on the FTT. Despite the fact that they had no experience interviewing classmates in Spanish, they were still able to ask appropriate questions for this task. They struggled the most with language function on the NTT. Although they were shown examples of Q&A columns in magazines, many students were not familiar with the type of questions that might be appropriate. In the second category, language control, the same trend occurred. Students' language control decreased from the post-test to the NTT, but then showed a marked increase on the FTT. Students' highest average score for both the post-test and the NTT occurred in the third category, vocabulary. This overall high rating was most likely due to the fact that on these assessments, students' vocabulary ratings were largely due to the selection of the correct question word, a major objective of this DA unit and new language material for the students. Although students scored the highest on language function on the FTT, they scored the second highest on vocabulary. These findings reveal that students generally had a strong grasp of

the question words. In the fourth category, impact, students had the most difficulty with the NTT. Students wrote few questions for the Q&A magazine article. Students scored the lowest on impact on the post-test. Finally, in the fifth category, comprehensibility, students scored the lowest on the NTT and FTT. As the context of interrogative use changed, students became less comprehensible. This is not surprising as students had not received mediation on any of the questions that they were asked write on the NTT and FTT.

4.4 MOVEMENT THROUGH THE ZPD OF FOCAL STUDENTS

The fifth research question asked, *What syntactic and functional development of Spanish interrogative structures is observed in individual students while participating in dynamic assessment focused on this structure?* To answer this question, all utterances during large group and small group work were recorded, transcribed and coded for each of the nine focal students. These utterances were coded for the question asked, the amount of mediation required, and the source of the error. This coding was done to track students' movement from assisted to unassisted performance throughout the DA program, as well as to track recurring errors. Assessment scores for each of the nine students were also compiled and compared.

4.4.1 Context

Table 12 includes information pertinent to this study about each focal student. This information includes the child's grade level, the grade in which he or she began to study Spanish, his or her level of proficiency and his or her level of participation. As discussed in Chapter 3, students'

proficiency ratings were based on an Integrated Performance Assessment implemented the semester before this study took place. Students' participation levels were based on four days of observation before the DA program began.

Table 12. Description of Focal Students

Name	Grade	Began Study of Spanish	Proficiency Level	Oral Participation during Large Group Instruction
Elena	4th grade	1st grade	novice mid	rare
Ivan	4th grade	1st grade	novice low	occasional
Jamal	4th grade	Kindergarten	novice low	occasional
Mary	4th grade	1st grade	novice mid	occasional
Roxanne	5th grade	2nd grade	novice high	frequent
Sara	4th grade	Kindergarten	novice high	occasional
Takuya	4th grade	1st grade	novice low	rare
Thad	5th grade	1st grade	novice high	rare
Tom	5th grade	1st grade	novice mid	occasional

Three novice low, three novice mid, and three novice high students were chosen as focal students. Only one of the nine focal students was rated as participating frequently during large group instruction. Five were rated as participating occasionally and three as rarely participating. Three of the nine students were fifth graders and the other six were fourth graders. The only non-native English speaker was a student with the pseudonym, Takuya, who spoke Japanese at home. None of the focal students were native Spanish speakers. All students were in the same Spanish class which met for fifteen minutes each day.

The following section describes the movement of each focal student from assisted to unassisted performance. Student profiles will be ordered from the student who moved through her ZPD most quickly to the student who never fully developed interrogative formation. Three aspects of each focal student will be discussed: (1) performance on each day of large group DA; (2) performance during small group work; and (3) performance on assessments and in comparison to that of the other focal students.

4.4.2 Roxanne

Roxanne is a novice high Spanish speaker who participated frequently during class. The same was true during the DA program. Of the nine focal students in this study, Roxanne seemed to develop interrogative use and formation most rapidly. As Table 13 shows, she required little assistance even at the beginning of the DA program.

Table 13. Roxanne’s Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	0	Cuándo significa how.	No Error
Day 2	0	Qué significa what.	No Error
Day 5	0	¿Quién es tu cantante favorita?	No Error
Day 5	4	¿Qué tiempo hace?	Word Omission (verb)
Day 10	2	¿Quién es tu cantante favorita?	Question Word
Day 10	0	¿Dónde vives?	No Error

Table 13 illustrates that Roxanne formed four questions orally during large group instruction during the ten day DA program. Two of these questions were the same. On Day 5, Roxanne asked *¿Quién es tu cantante favorita?* (Who is your favorite singer?) without requiring any mediation. On Day 10, she repeated this question but required two mediation prompts to choose

the correct question word. Aside from this question, Roxanne only required mediation for the question *¿Qué tiempo hace?* This is a difficult question in Spanish for novice level learners because *hacer* is typically translated as *to do* or *to make*.

4.4.2.1 Group Work - Roxanne

During group work, Roxanne worked with Alex and Wayne. Alex and Wayne were two other novice high students who also participated frequently during class, but who were not focal students in this study. On the first day of group work, Roxanne acted as the primary mediator in the group. She often provided necessary vocabulary for her group members, repeated incorrect answers as questions, and provided supportive comments such as “That’s an interesting one”. On the first day of group work, Roxanne discovered through a conversation with the teacher that the auxiliary verb ‘do’ does not exist in Spanish. This knowledge carried over into her post-test with the question *¿Dónde vives?* (Where do you live?)

4.4.2.2 Assessments - Roxanne

Figure 4 illustrates Roxanne’s performance on the four assessments.

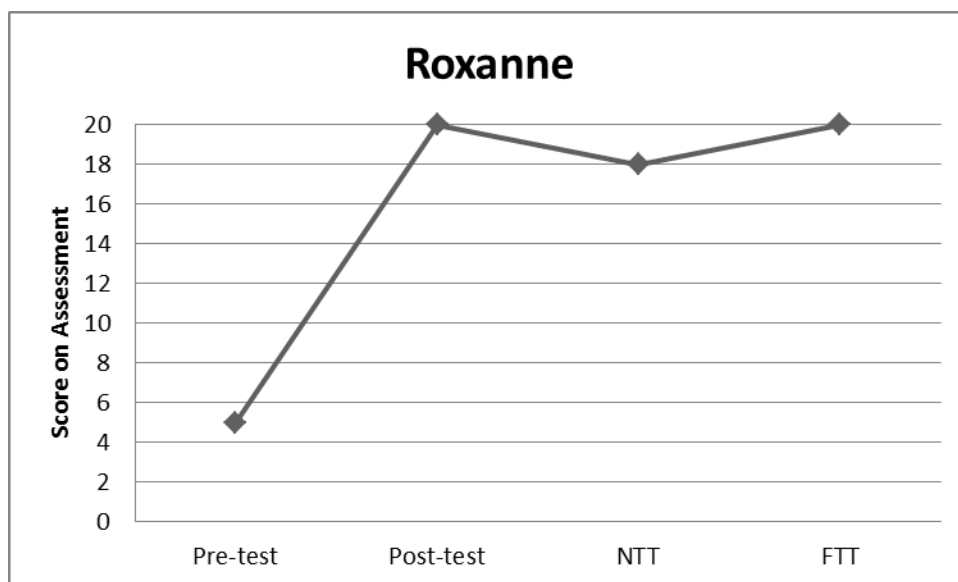


Figure 4. Roxanne’s Performance

Similar to all of the focal students, Roxanne’s score increased dramatically from the pre-test to the post-test. She received a perfect score of 20 out of 20 on her post-test and FTT. On the NTT, Roxanne received a score of 18 out of 20. On the NTT, she lost one point for language control and one point for comprehensibility.

Roxanne was able to form a variety of questions throughout the final three assessments. She wrote eighteen questions for her post-test, more than any other student in the class. On this post-test, she wrote questions that began with six different question words. Her questions on the post-test, created in preparation for the guest speaker from Argentina, used question words such as *qué, cómo, quién, cuándo, dónde* and *cuántos*. The only question word that she did not use was *por qué*. Roxanne also formed many original questions on the NTT and FTT. On the NTT, when creating the Q&A article for a magazine, she wrote nine questions employing three different question words. She wrote questions such as *¿Dónde está⁵ frío en Argentina?* (Where is

⁵ In order to be grammatically correct, “está” should be “hace”. This is different from English though and difficult for students to grasp. The point here is that Roxanne is clearly inventing with the language.

it cold in Argentina?) and *¿Cuántos ríos en Argentina?*⁶ (How many rivers in Argentina?) Although these sentences were not grammatically accurate, they showed that Roxanne was inventing with the language, more so than the other focal students. These questions had never been asked during this Spanish class and were therefore innovative. On the FTT, Roxanne asked six questions and again employed three question words.

4.4.3 Sara

Sara, like Roxanne, was rated as a novice high speaker of Spanish. She occasionally raised her hand to answer questions orally during class. During the DA program, Sara offered oral responses during large class instruction on five occasions. Table 14 shows Sara’s oral participation.

Table 14. Sara’s Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	0	Dónde significa where.	No Error
Day 1	0	¿Dónde está la presidente de Argentina?	No Error
Day 2	0	Qué significa what.	No Error
Day 3	0	¿Dónde está la capital de Argentina?	No Error

As this table illustrates, Sara required no mediation during the large group DA program, despite scoring only a five on her pre-test. She formed an original question on the first day *¿Dónde está la presidente de Argentina?* (Where is Argentina’s president?) when asked to roll a cube and form a question with the word *dónde*.

⁶ This question lacks the verb “hay” (are there)

4.4.3.1 Group Work - Sara

During group work, Sara worked with Mary and Jamal. Similar to Roxanne, she acted primarily as a mediator by often assisting her group members with vocabulary and word placement. As was the case with another focal student, Mary, Sara paid particular attention to language function. She was concerned with whether the questions her group created were appropriate for the visitor. On several occasions, she made comments such as “[that question] is too personal” and “Do we really need to know that?”

4.4.3.2 Assessments - Sara

Figure 5 illustrates Sara’s performance across the pre-test, post-test, NTT and FTT.

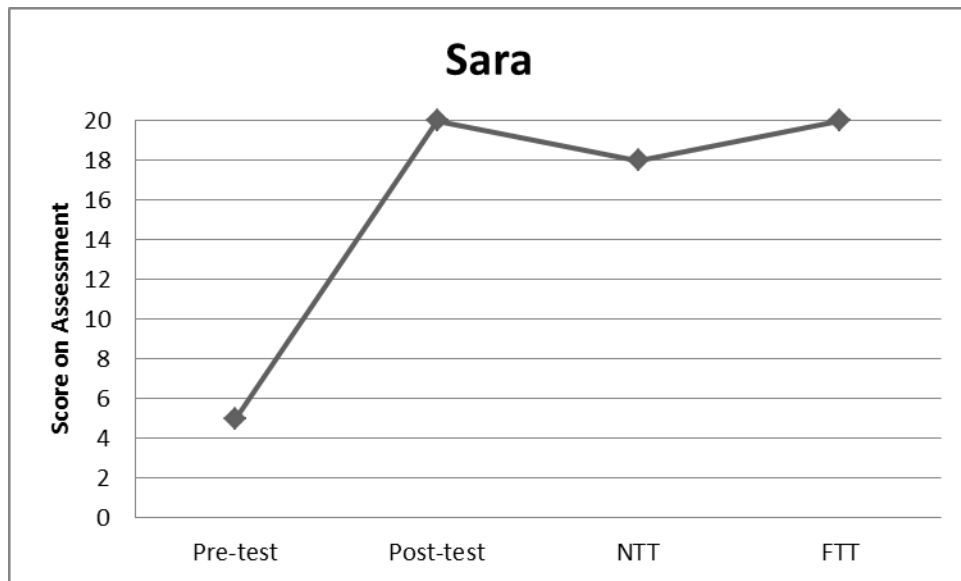


Figure 5. Sara’s Performance

Sara’s scores were identical to those of Roxanne on every assessment. She received 20 out of 20 on both her post-test and her FTT. Her score decreased from the post-test to the NTT, on which she scored 18 out of 20. Similar to Roxanne, Sara lost one point for language control and one point for comprehensibility.

Also like Roxanne, Sara was able to use a variety of question words on her assessments. She used five different question words on her post-test in which she formed ten questions total. This was only one question word less than Roxanne and was the second highest number of questions formed on this assessment after Roxanne. On her NTT, she used three different question words in nine questions. Sara and Roxanne were the only students to write this many questions on the NTT. On the FTT, Sara asked six questions and was only able to use two question words.

4.4.4 Elena

Elena is a novice mid Spanish speaker and rarely raises her hand to volunteer during Spanish class. She also remained quiet but attentive during the DA program. Like Roxanne and Sara, Elena also moved from assisted to unassisted performance during the ten day DA program. On Day 1, Elena provided the English translation of *cómo* (how) with the assistance of four mediation prompts. On Day 2, she provided the English translation of *quién* (who) without any mediation prompts. After the initial two days when the focus of instruction shifted from word identification to question formation, Elena refrained from oral participation. She did not volunteer any answers on Days 3, 4, 5 or 10 of the DA program. Table 15 outlines Elena's oral participation.

Table 15. Elena's Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	4	Cómo significa how.	Question Word
Day 2	0	Quién significa who.	No Error

4.4.4.1 Group Work - Elena

Despite her reticence during large group instruction, Elena was quite vocal during small group work. She worked in a group with Takuya and Thad, two other students who rarely participated orally during large group instruction. Each group configuration was carefully considered to encourage equal participation by all members. During group work, Elena alternated from acting as a mediator to acting as a member requiring mediation. She often provided mediation to Takuya, but would refer to Thad for affirmation or support. On the first day of group work, with the help of Takuya and Thad, Elena wrote the question *¿Qué tu favorito actividad?* (What your favorite activity?) Thad pointed out that *favorito*⁷ comes after *actividad* and the teacher pointed out that the question lacked a verb. Minutes later, Elena formed the question *¿Cuándo es tu cumpleaños?* (When is your birthday?), suggesting that she was beginning to internalize the idea that all questions require a verb.

⁷ Noun/Adjective agreement was not targeted in this DA program.

4.4.4.2 Assessments - Elena

Figure 6 illustrates Elena's performance across the four assessments.

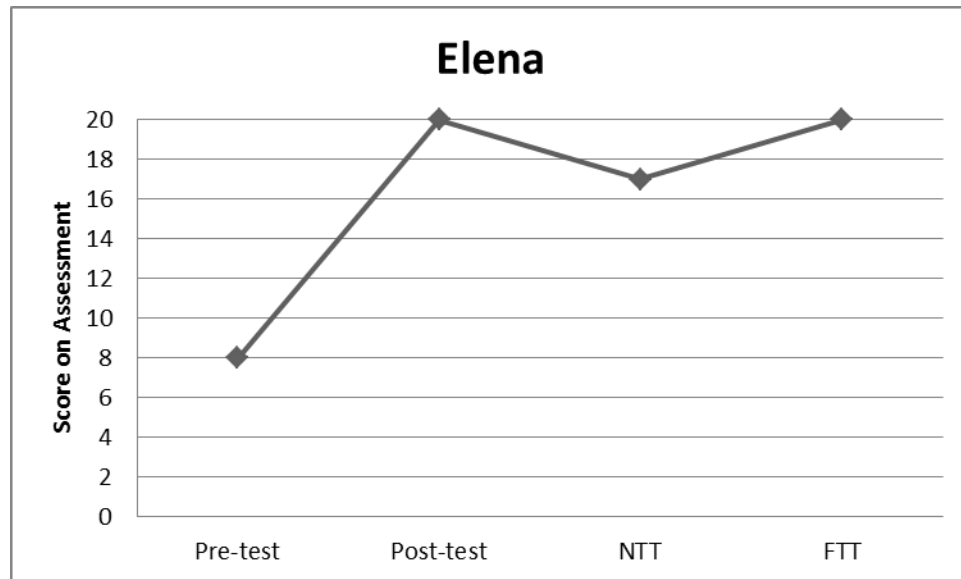


Figure 6. Elena's Performance

Despite her lack of oral participation during the DA program, Elena scored perfectly on the post-test. Similar to both Roxanne and Sara, she scored 20 out of 20 on the post-test and the FTT. Her score was slightly lower than the scores of Roxanne and Sara on the NTT, on which she received a 17 out of 20. On the NTT, Elena lost one point for language function and two points for comprehensibility.

On the post-test, Elena wrote seven questions, all of which began with *Qué* (what) except for one⁸. On the NTT, Elena wrote six questions, all of which began with *Qué* except for one in which she wrote *¿Cómo es tu español?* (How is your Spanish?). Similarly, six of the seven questions that she asked during the mock interview of the FTT began with *Qué*. Despite her

⁸ The rubric did not account for variation of question word use, which will be addressed in Chapter 5 in the section on limitations of the study.

inability to form questions with multiple question words as Roxanne and Sara had been able to do, Elena included a verb in every question on each assessment. By transcribing Elena's participation in small group work, it becomes obvious that peer mediation, as well as mediation provided by the teacher, helped Elena to internalize the knowledge that all questions require a verb. Although Elena's group used a variety of questions during group work, she did not internalize the use of the majority of the WH- question words.

4.4.5 Thad

Thad is an intriguing case because he was the only student in the class who received a novice high proficiency rating but rarely participated orally. During the DA program, Thad never orally participated during large group instruction and therefore has no interaction data reported. He always seemed attentive and engaged in the lesson, but he never raised his hand.

4.4.5.1 Group Work - Thad

Despite his lack of participation during large group instruction, like Elena, Thad was very participatory during small group work. During these four days, Elena and Takuya consistently turned to Thad for assistance. He acted as the primary mediator in this group and rarely requested mediation from his peers. Thad was the clear leader in this group, despite the fact that he and Elena received the same score on the post-test and that Elena scored higher on both the NTT and FTT. He encouraged his group members to form questions with each of the question words.

4.4.5.2 Assessments - Thad

Figure 7 illustrates Thad's performance across the four assessments.

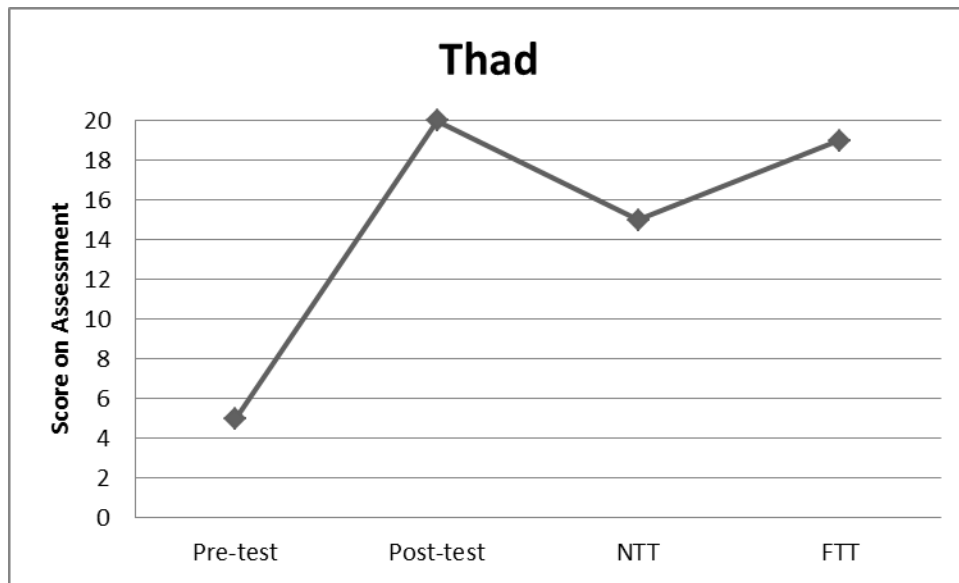


Figure 7. Thad's Performance

Although Thad never volunteered orally during class and wrote only one question (in English) on his pre-test, he did quite well on the post-test, NTT and FTT. On the post-test, like Roxanne and Sara, Thad scored a perfect score of 20 and wrote six questions. On the NTT, he scored 15 out of 20 and again wrote six questions. On the NTT, Thad lost two points for language control, one point for vocabulary and two points for comprehensibility. On the FTT, Thad was able to ask seven questions and received a score of 19 out of 20. He lost only one point for comprehensibility.

Similar to Roxanne, Thad's questions revealed an attempt to be creative with the language, which perhaps led to the lost point for comprehensibility. Thad wrote, *¿Qué es region es la cataratas?* (What is region is the waterfalls?) and *¿Dónde la vacunas de Argentina?* (Where the vacunas of Argentina?) Each of these questions had not been previously mediated during large group instruction. Despite his commitment to creating questions with all question

words during group work, Thad used only three question words on the post-test and NTT (*qué*, *cómo*, and *dónde*) and only two on the FTT (*qué* and *dónde*). Similar to Elena and Sara, it seemed that Thad had not internalized the use of all of the question words.

4.4.6 Ivan

Ivan was rated at the novice low level of proficiency and occasionally raised his hand to volunteer during Spanish class. He participated orally throughout the DA program. Table 16 shows Ivan's oral participation.

Table 16. Ivan's Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	0	¿Cómo se dice how?	No Error
Day 2	5	¿Cómo se dice when?	Question Word
Day 3	4	¿Qué es tu actividad favorita?	Word Order
Day 5	0	¿Qué es actividad favorito?	No Error
Day 10	0	¿Qué es tu actividad favorita?	No Error

On Day 3 of the DA program, Ivan required four mediation prompts in order to form the question *¿Qué es tu actividad favorita?* (What is your favorite activity?) He began by saying *¿Qué es favorito actividades?* As the teacher provided the pre-determined mediation prompts, he eventually switched the order of the noun and adjective. This was done only after the teacher provided an either/or option to assist. Interestingly, he raised his hand to ask the same question on the following day. On this day, he asked *¿Qué es actividad favorito?* Without explanation, the teacher praised this question and continued without pointing out the need for a possessive pronoun.

4.4.6.1 Group Work - Ivan

During group work, Ivan worked with Tom and Annie. It is difficult to classify Ivan as a mediator or person who received mediation because he was absent so frequently. After the first day of group work, Ivan broke his leg and missed Days 2 and 3 of group work. On Day 4 of group work, he spent most of the class in the restroom and did not contribute to group work at all. On the days in which he was present, Ivan was often distracted during group work. He was a very social student and had difficulty focusing his attention on the task at hand. He seemed to excel with close supervision from the teacher as opposed to working with classmates.

4.4.6.2 Assessments - Ivan

Figure 8 illustrates Ivan's performance across the four assessments.

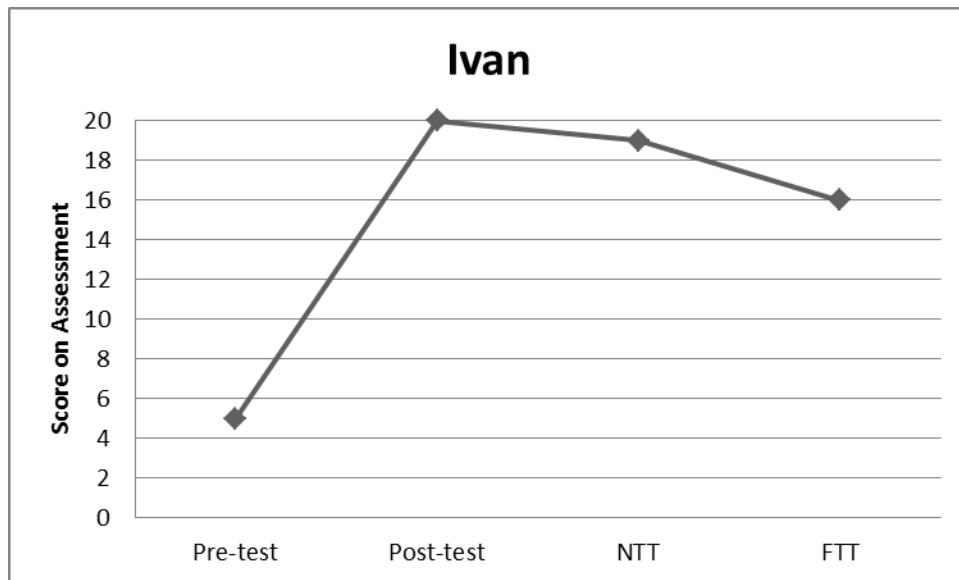


Figure 8. Ivan's Performance

Although Ivan was rated as a novice low speaker of Spanish, he performed better on these assessments than two of the students who were initially rated novice mid speakers. Ivan scored a perfect 20 out of the 20 on the post-test. On the NTT, Ivan received 19 out of 20, losing one

point for language function. On the FTT, Ivan received 16 out of 20, losing one point for language control, one for vocabulary and two for comprehensibility.

Examination of the post-test, NTT, and FTT, revealed that Ivan created seventeen different questions. Ivan was able to form many questions with *qué, dónde, cómo* and *cuándo*, but did not form any questions with *porqué, cuántos* or *quién*. Similar to Roxanne, Ivan was able to use at least three different question words on all of his assessments. He wrote seven questions on the post-test and six on the NTT. He was also able to ask seven questions on the FTT. Despite his absences and lack of participation during group work, Ivan seemed to have internalized the use of a wider variety of WH- question words than most of the students described above.

4.4.7 Tom

Tom was rated a novice mid level speaker of Spanish and demonstrated a medium level of participation. While he typically missed a lot of Spanish classes due to absences and music lessons, he was present for all ten days of the DA program. Table 17 shows the mediation required by Tom throughout the DA program.

Table 17. Tom’s Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	0	Cuándo significa when.	Question Word
Day 1	1	Quién significa who.	Question Word
Day 2	3	Cuándo significa when.	Question Word
Day 5	2	¿Qué es tu deporte favorito?	Word Error
Day 10	0	¿Qué es tu comida favorita?	No Error

On Day 5, Tom needed two mediation prompts to correctly form the question *¿Qué es tu deporte favorito?* (What is your favorite sport?). He initially said, *¿Qué es tu deporte es favorito?* After

the teacher repeated the phrase, Tom was able to correct his question. On Day 10, he formed the parallel question *¿Qué es tu comida favorita?* without repeating his previous mistake.

4.4.7.1 Group Work - Tom

As mentioned above, Tom worked in a group with Ivan and Annie. Tom was primarily a mediator in this group and the clear group leader. He told the group what questions to write and what questions they should not include. Whenever Tom had a question, he would not ask his group members but would instead raise his hand and wait for the teacher. It is quite possible that Ivan did not participate much during group work due to these actions.

Similar to Mary, Tom was also concerned with language function. During the first day of group work, Ivan proposed the question *¿Qué es tu océano favorito?* (What is your favorite ocean?) to which Tom responded “What does that mean? No, that’s not a good question. We aren’t doing that.” He was aware that this was not a question that one would normally ask a guest speaker.

4.4.7.2 Assessments - Tom

Figure 9 illustrates Tom’s performance across the four assessments.

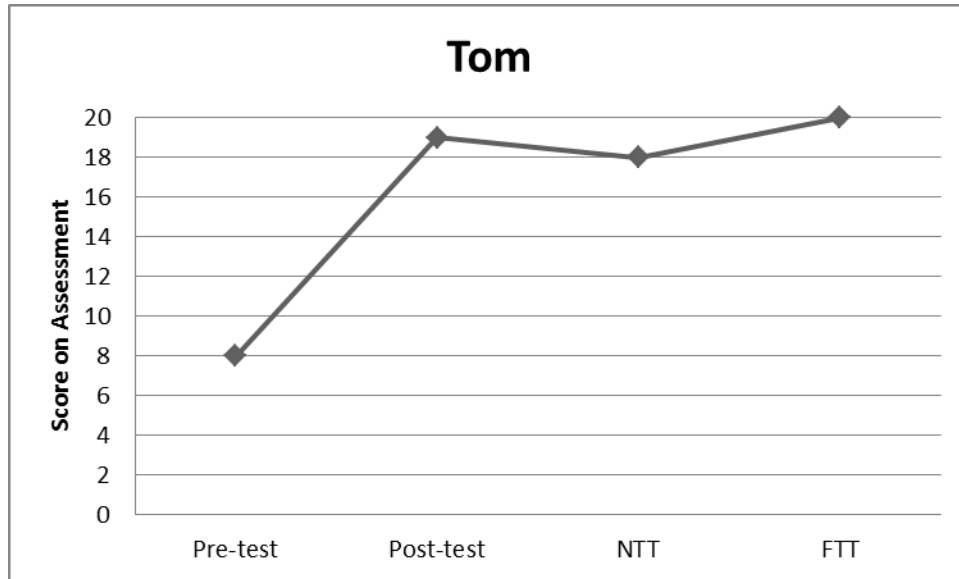


Figure 9. Tom's Performance

Tom scored well on the post-test, NTT and FTT, indicating that he could form questions independently. His main difficulty on these assessments was quantity. Tom scored 19 out of 20 on the post-test, losing one point for impact. On the NTT, Tom scored 18 out of 20, losing two points for impact. Similar to all of the focal students aside from Ivan, Tom's performance improved from the NTT to the FTT in which he asked eight questions and scored a perfect 20 out of 20. Tom was the only student who scored higher on the FTT than the post-test.

Tom was also able to use a variety of question words. He used more question words on the FTT than any of the focal students described up to this point. He wrote questions with two question words on the post-test, three on the NTT and four on the FTT. It is interesting that he was able to use more question words on each consecutive assessment.

4.4.8 Mary

Mary was rated at the novice mid level of proficiency and orally participated occasionally during class. On the first day of the DA program, Mary needed five mediation prompts to define *quién*. She did not participate again until Day 10. Table 18 shows Mary's oral participation.

Table 18. Mary's Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	5	Quién significa who.	Question Word
Day 10	3	¿Qué es tu región favorito?	Word Order

On Day 10, Mary volunteered the question *¿Qué es tu favorito región?* (What is your favorite región?) After the first three mediation prompts, she was able to change the word order to ask *¿Qué es tu región favorita?* After this interaction, Mary seemed to internalize the syntactic knowledge that adjectives often follow nouns in questions. On the FTT, she asked *¿Qué es tu actividad favorito?*⁹ (What is your favorite activity?) and *¿Qué es tu color favorito?* (What is your favorite color?), placing the adjective after the noun in each case.

4.4.8.1 Group Work - Mary

Mary worked in a group with Sara and Jamal. Like Elena, Mary alternated between acting as a mediator for the group and acting as a person who required mediation. She provided mediation to both Sara and Jamal, but she often deferred to Sara when making decisions about what questions they should ask as well as about word choice. Like Thad, Mary was insistent upon creating

questions with each of the question words. She made comments such as “so, let’s try to use all the things [question words]”.

4.4.8.2 Assessments - Mary

Figure 10 illustrates Mary’s performance across the four assessments.

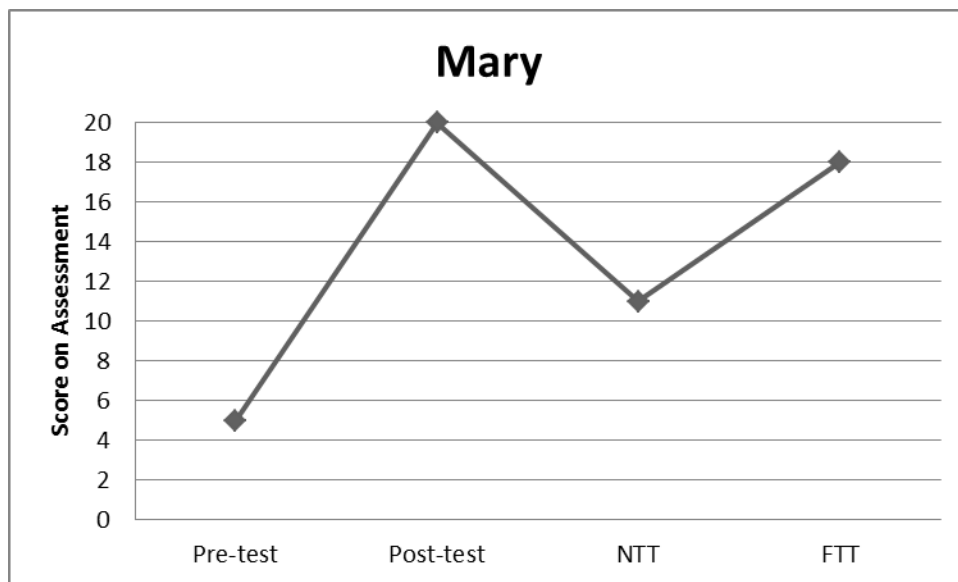


Figure 10. Mary’s Performance

Mary scored a perfect 20 out of 20 on the post-test. Her score decreased drastically to 11 out of 20 on the NTT. On this assessment, Mary lost one point for language control, three points for vocabulary, two points for impact and three points for comprehensibility. Her score then increased on the FTT, on which she received 18 out of 20 points. On the FTT, Mary lost one point for language control and one point for comprehensibility.

Perhaps as a result of her commitment to forming questions with all of the question words, Mary repeated the use of only one question word, *cómo*, on her post-test. She was able to form six questions with a variety of WH- words such as *qué*, *cuándo*, *dónde* and *quién*. Oddly, this ability to employ so many of the question words did not transcend to the NTT or the FTT.

On the FTT, like both Sara and Elena, Mary was only able to use two question words. Of the nine questions created by Mary on her transcendence tasks, three on the NTT and six on the FTT, only two began with words other than *qué*. It is possible that Mary forgot the other question words due to the time between assessments, or that she had not fully internalized these words. On the post-test, Mary asked *¿Quién es la presidenta [sic] de Argentina?* (Who is the president of Argentina?) On the NTT that occurred seven days later (partially due to school holidays), Mary wrote, *¿Qué es el presidente de Argentina?** (What is the president of Argentina?) This error may indicate that Mary was still attempting to form a variety of questions, but could no longer recall the word for *who*.

4.4.9 Takuya

Takuya is an English Language Learner who speaks Japanese at home. He is a novice low Spanish speaker and rarely participates orally during large group instruction. It was surprising that he participated on five occasions during the 10 day DA program. Table 19 shows Takuya's interactions with the teacher.

Table 19. Takuya's Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 4	3	Cómo significa how.	Question Word
Day 4	1	¿Cómo esquías?	Word Omission (verb)
Day 10	0	¿Cómo estás?	No Error
Day 10	4	¿Quién es tu actor favorito?	Question Word; Word Order

On Day 4 of the DA program, Takuya asked the question *¿Cómo esquías?* (How do you ski?) with one mediation prompt required and on Day 10, *¿Cómo estás?* (How are you?) without any

mediation required. On this same day, he also asked *¿Qué es favorito actor?** (What is favorite actor?) In order to identify the appropriate question word and to place the adjective after the noun, Takuya required four mediation prompts.

4.4.9.1 Group Work - Takuya

Takuya was an active participant in his group composed of Elena and Thad. He mostly relied on mediation from Elena and Thad and rarely provided mediation. On the first day of small group work, Takuya began as the writer for the group, but then gave the paper and pencil to Elena and stated, “I don’t want to write it. I don’t want to misspell it.” He began the group work by suggesting that they write the question *¿Cómo estás?* Interestingly, toward the end of the first day of group work, Takuya returned to this question and asked his group members what it meant in English. He included this question on his post-test and FTT.

By examining transcripts from small group work, Takuya’s development can be tracked. During the DA program, Takuya received mediation from his group members and from the teacher on possessive pronouns and word order. This can be seen on the post-test in which Takuya correctly wrote, *¿Qué tu actividad favorito?** (What your favorite activity?) and *¿Qué tu actores favorito?* (What your favorite actors?). In these two questions, Takuya did not include a verb, but he did correctly use a possessive pronoun and his adjectives were correctly placed. During small group work, the teacher called Takuya’s attention to the fact that the question *¿Qué tu actividad favorito?* (What your favorite activity?) had no verb. The group repaired this question and included a verb in the rest of their questions. It seems that Takuya still required mediation on this grammatical point as he omitted verbs repeatedly on each assessment.

4.4.9.2 Assessments - Takuya

Figure 11 illustrates Takuya's performance across the four assessments.

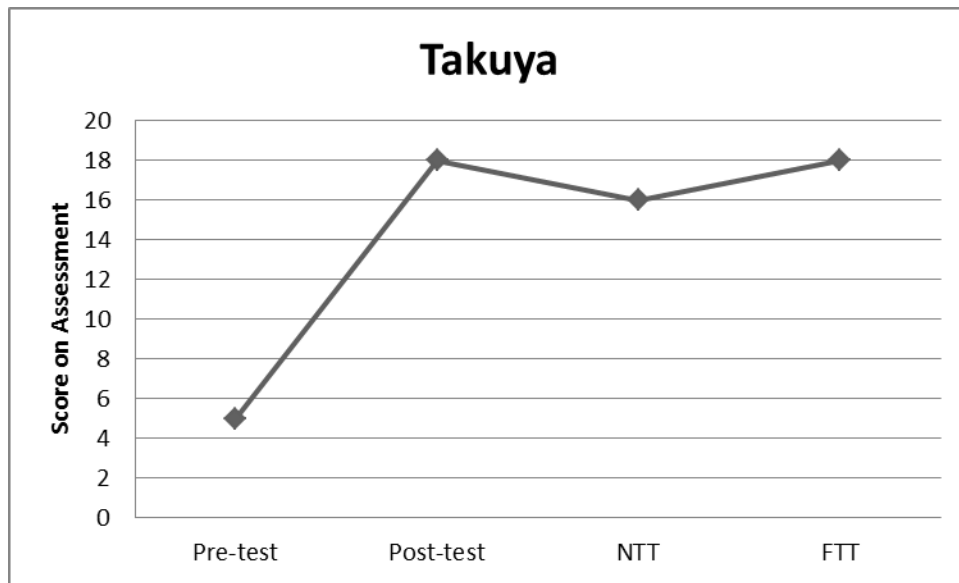


Figure 11. Takuya's Performance

Although ranked eight out of the nine focal students in the present study, Takuya still scored well on all four assessments. He received 18 out of 20 points on the post-test, losing one point for language function and one point for impact. His score decreased to 16 out of 20 on the NTT, on which he lost two points for language control and two points for impact. His score then improved on the FTT to 18 out of 20. On the FTT, Takuya lost one point for language control and one point for comprehensibility.

Takuya asked few questions on each of the assessments. He wrote only four questions on the post-test, three questions on the NTT and six questions on the FTT. Similar to Tom, Takuya produced the most questions on the FTT. Besides Tom, Takuya was the only other focal student who was able to write questions with four different question words on the FTT. He was able to use three question words on the post-test, two on the NTT and four on the FTT.

4.4.10 Jamal

Jamal has a proficiency rating of novice low based on the IPA and he occasionally participated during large group instruction. Of the focal students, Jamal scored the lowest on the post-test, NTT and FTT. Throughout the DA program, Jamal did not show much development. Table 20 shows Jamal’s oral participation and corresponding mediation

Table 20. Jamal’s Interactions with Teacher

	Number of Prompts Required	Answer Given	Source of Error
Day 1	0	Qué significa what.	Question Word
Day 2	5	Cómo significa how.	Question Word
Day 10	4	¿Dónde vives?	Word Omission (verb)

On Day 2 of the DA program, Jamal required all five mediation prompts to produce the Spanish word for *how*. On Day 10 of the DA program, he needed four mediation prompts to ask the question “¿Dónde vives?” (Where do you live?) He began by stating the question “Where do you live?” in English. He was given an either/or option for the word *dónde*. Next, he was given the option of *¿Dónde estás?* or *¿Dónde vives?*, which he answered correctly. Jamal did not orally participate in class on Days 3, 4 or 5 of the DA program.

4.4.10.1 Group Work - Jamal

During group work, Jamal provided little mediation to his group members. On the first day of group work, Jamal mostly contributed by offering questions in English. He suggested that Sara and Mary write, “What’s your favorite soccer team?” Sara and Mary then conversed for approximately sixty seconds on how to form this question. Jamal was silent during this discussion. Jamal next suggested that they ask the guest speaker if they are a boy or a girl. Sara

responded “but you are going to know that when you see her”. This question indicated some difficulty with the appropriate use of questions. Other than these contributions, Jamal also made funny faces at the camera during group work and stated that he was bored.

Jamal participated in the third day of group work after an absence on the second day. His contribution to group work on this day was bragging that he did not have to write any questions down, indicating that his group mates wrote everything down for him. The rest of Jamal’s attention on Day 3 revolved around his dislike of a fellow classmate. On the final day of group work, Jamal only spoke three times throughout the class period. These were not substantial contributions and the rest of the group work was controlled by Mary and Sara.

4.4.10.2 Assessments - Jamal

Figure 12 illustrates Jamal’s performance across the four assessments.

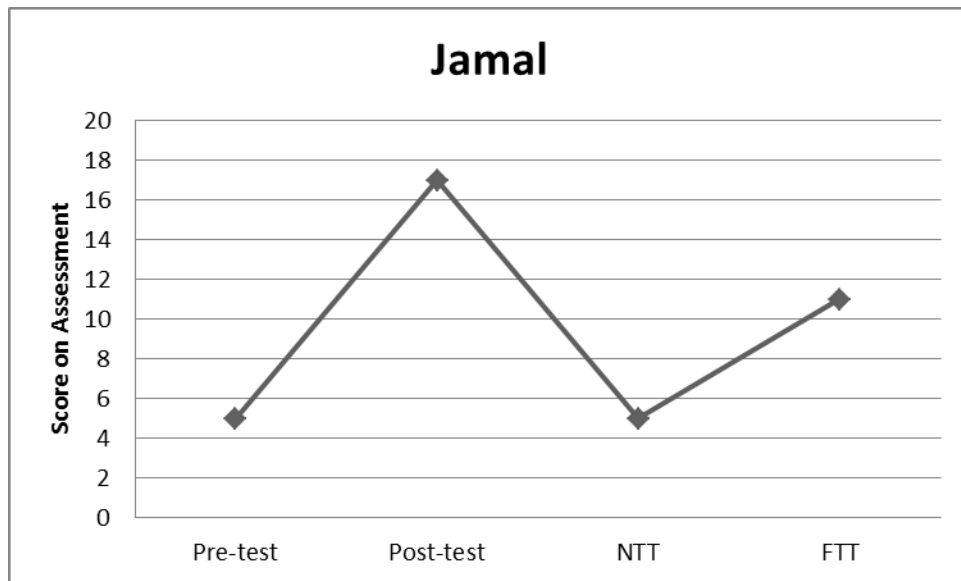


Figure 12. Jamal’s Performance

On the post-test, Jamal formed only one question. Due to the nature of the scoring rubric, this afforded Jamal 17 out of 20 because the one question was well-formed. As a result, he only lost points in the *Impact* category which scored the number of questions formed by the student. This

was a clear weakness of the scoring rubric. A student could write one question that was accurate, comprehensible, used the correct vocabulary and was appropriate for the situation and receive a 16. Those four categories did not address the number of questions written. Only *Impact* dealt with this aspect. Therefore, by forming one question, Jamal received a 17 out of 20. Limitations of the rubric will be further discussed in Chapter 5.

Jamal's score on the NTT decreased drastically to 5 out of 20. He received the lowest possible score of 1 out of 4 for each of the five categories on the rubric. On the NTT, he wrote five questions. None of these questions began with the appropriate question word or were comprehensible. They consisted of more English words than Spanish words. During this assessment, Jamal became very frustrated and began to cry. He stated that he "just couldn't do it".

Jamal scored higher on the FTT, receiving 11 out of 20 points. He lost two points for language control, vocabulary and comprehensibility and one point for impact. For this assessment, he was able to ask *¿Cómo estás?* (How are you?) He also asked, *¿Cómo está y regentos?* (How are you and regions?) in an attempt to ask how many regions there are in Argentina. Although this performance was still quite low, it was better than the NTT.

4.4.11 Summary

Despite differing proficiency levels and oral participation levels, most of the focal students showed some language development on question formation during the DA program. While some students were quite vocal during large group instruction, others such as Elena and Thad remained mostly silent. Interestingly, these two students were quite vocal during small group work. During group work, Sara, Thad, Tom and Roxanne acted primarily as mediators. Elena and Macy

alternated roles, sometimes acting as mediators and other times requesting mediation. In general, Takuya and Jamal requested mediation from their peers and rarely offered it themselves. Ivan was largely unparticipatory during group work and therefore could not be classified as a mediator or a student requiring mediation.

In this section, students were presented in the order of strongest to weakest performance on the three assessments following the DA program. While Roxanne and Sara were able to write the most questions on each assessment, Ivan, Tom and Takuya, ranked numbers five, six and eight in this order, were consistently able to use more question words than their peers on the transcendence tasks. The scores of the focal students on each assessment are summarized in Table 21. Students' internalization of question words will be discussed further in Chapter 5.

Table 21. Scores of Focal Students on Assessments

	Pre-test	Post-test	NTT	FTT
Roxanne	5	20	18	20
Sara	5	20	18	20
Elena	8	20	17	20
Thad	5	20	15	19
Ivan	5	20	19	16
Tom	8	19	18	20
Mary	5	20	11	18
Takuya	5	18	16	18
Jamal	5	17	5	11

4.5 SUMMARY

This chapter presents the findings to research questions one through five. From these findings, it becomes clear that the DA program impacted students' ability to use and form WH- questions in Spanish. Throughout the ten day DA program, the quality and quantity of mediation required by students decreased. Although this could not be seen by looking at individual days, it was quite clear when examining the DA program longitudinally.

After the first five days of large group DA, peer mediation was observed during small group work. In these small groups, students called upon their classmates for assistance and their classmates provided that assistance. In several cases, students mirrored the mediation prompts provided by their teacher by repeating incorrect questions or offering forced choice options. More commonly, mediation took more explicit forms such as translation or direct correction.

Based on scores on the NTT and FTT, most students' knowledge seemed to transcend the change of context. While the average score on the post-test decreased by 4.09 to 15.08 on the NTT, the average score on the post-test only decreased 1.09 points to the FTT. One would expect students to score lower on the FTT than the NTT. Possible reasons for this finding will be discussed in Chapter 5.

Although no student could form questions before the DA program, almost all students were able to after the program. Students moved from assisted to unassisted performance at varying speeds. Students such as Roxanne and Sara could form questions independently by Day 3 of the DA program. Other students such as Tom and Takuya required more mediation, but could also form many questions without mediation by the end of the DA program. One student, Jamal, still required mediation to form a question after the ten day DA program.

There was a lot of variation among how many questions students could write and how many question words they could employ. While students such as Elena and Tom only used two question words on their post-test, other students such as Sara and Roxanne used at least five. While the number of question words employed by most students decreased from the post-test to the NTT to the FTT, this number improved for one student Takuya. After only employing two question words on the NTT, Takuya utilized four on the FTT.

The next chapter will explore possible explanations for the findings presented above. Four discussion points will be addressed. First, this chapter will discuss the feasibility of DA in an early foreign language program. Second, the mediation that occurred during small group work will be discussed. Findings that suggest the necessity of small group work as a complement to large group DA will be further explored. Third, the varying levels of development that occurred for the nine focal students will be examined, along with possible explanations for this variation. Finally, the increase in scores from the NTT to the FTT will be explored.

5.0 DISCUSSION

In this chapter, four major aspects of the findings will be discussed and elaborated upon: (1) the feasibility of large group dynamic assessment (DA); (2) peer mediation; (3) the varying levels of development; and (4) transcendence of knowledge. Limitations of this study will also be explored. Finally, implications and areas in need of future research will be addressed.

5.1 FEASIBILITY OF LARGE GROUP DA IN THE FOREIGN LANGUAGE CLASSROOM

Very few studies have examined the feasibility of large group DA in the foreign language classroom (Lantolf & Poehner, 2011; Poehner, 2009). Large group DA requires that an assessor work within the zone of proximal development (ZPD) of the group as a whole, and that the assessor provide mediation calibrated to that group ZPD. As Haywood and Lidz (2007) write, an assessor must (1) determine whether the learner has the knowledge to proceed with the task; and, if not, (2) develop appropriate mediation for that learner for the task. This type of DA can be difficult with only one student, and even more difficult with a large group of students. Poehner (2009) argues that in order for large group DA to be effective, one must engage “learners in tasks that are challenging to all and [provide] support to benefit all” (p. 477). By engaging a group of students in a task that no individual student can complete alone but that all students are capable

of completing with mediation, an assessor, or in this case a teacher, can work within the ZPD of the group as a whole.

The present study found that DA was feasible in the large group setting and did provide “support to benefit all”. Based on pre-test scores in which no student scored higher than 8 out of 20, it was determined that no individual student could use and form interrogatives independently. Five mediation prompts, arranged from implicit to explicit, were developed to address three aspects of question formation: question word, word order, and inclusion of necessary components. Using these prompts, the teacher was able to dynamically assess her students within the limitations of time and within the constraints of her curriculum. Sections 5.1.1 and 5.1.2 will further discuss these findings.

5.1.1 Time Constraints

The thought of providing five mediation prompts to every student who asked a grammatically inaccurate question was initially quite daunting. Many teachers might dismiss this approach with the claim that limited class time would not allow for extended and extensive mediation. The present study found that, when viewed longitudinally, DA took no longer than typical teacher-fronted non-interactive instruction.

Figure 13 illustrates the inverse relationship between the number of interactions that occurred per class and the number of mediation prompts provided.

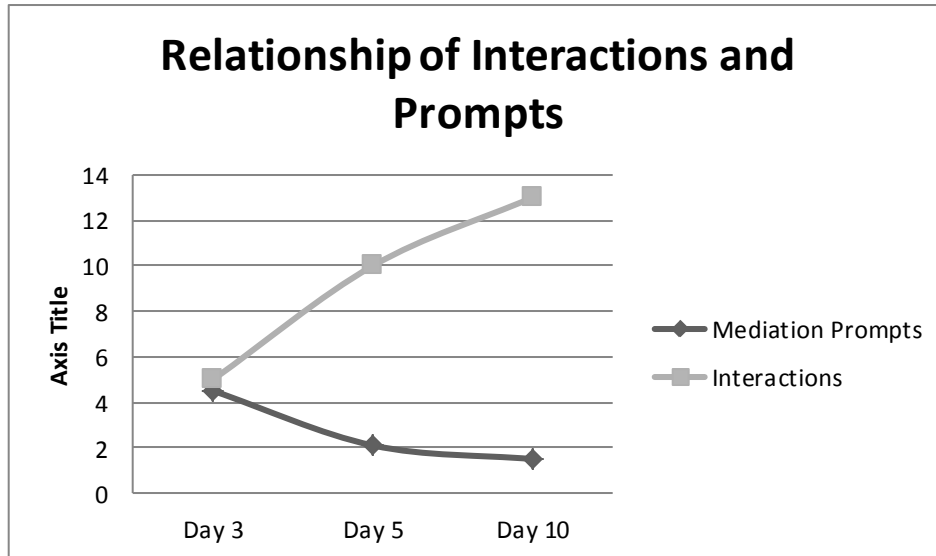


Figure 13. Relationship of Interactions and Mediation Prompts

Due to the sharp decrease in the number of mediation prompts required on each subsequent day of the DA program, increasingly fewer minutes were devoted to providing mediation. On the first day of question formation, only five interactions took place. Because students required an average of 4.5 mediation prompts per interaction, only five students had the opportunity to actively participate. On the second full day¹⁰ of question formation, ten interactions took place. Because the average number of mediation prompts required was only 2.1, less time was spent mediating each student and more students had the opportunity to participate. On the third full day of question formation, thirteen interactions occurred. On this day, students required, on average, only 1.5 mediation prompts, allowing more students to participate. As the number of required mediation prompts decreased, the number of interactions that occurred increased.

Similar to the findings of Poehner (2009), although only five students actively participated on Day 3, the other students in the class seemed to benefit from those interactions. On Day 3, Alex required four mediation prompts to correctly ask *¿Qué es tu equipo favorito?*

¹⁰ Day 4 is omitted from this discussion since the majority of class time on that day was not devoted to question formation.

(What is your favorite team?). The following day, Sam required zero prompts to ask the same question, suggesting that he had internalized the mediation offered to Alex. Although each interaction occurred between the teacher and one student, other students likely internalized the mediation provided to the student actively participating. Echoing the findings of Donato (1994), “the independent use of collaboratively constructed utterances is not limited solely to the individual who initially requested the help during the planning session” (p.51).

Although the amount of mediation prompts required on each full day of question formation decreased, different students participated on each day. For example, while five students formed questions on the first day, only three of those students formed questions on the second day. An additional seven students who had not formerly participated asked questions on the second day. Despite all of these new participants, the quality and quantity of mediation required still decreased. Echoing the findings of Lantolf and Poehner (2011), DA may require more time initially, but, in the end, it seems to save class time.

5.1.2 Marriage of DA and Language Pedagogy

The present study attempted to reconcile DA and effective language pedagogy. In previous research, DA has been primarily implemented outside of the classroom in dyads (Feuerstein, Rand & Hoffman, 1980; Peña & Gilliam, 2000; Poehner, 2008a). Following the work of Lantolf and Poehner (2011), the present study implemented DA in the classroom. For this to be effective and feasible, DA had to be situated within the language curriculum of the school. This required that DA take place in authentic contexts geared toward communication and the negotiation of meaning.

In the foreign language setting, DA has arisen from the field of applied linguistics. DA studies have asked students to complete tasks such as narrating movies (Poehner, 2008a), writing about experiences with a foreign language (Antón, 2009), interpreting authentic broadcasts and interviews (Ableeva, 2008), and taking placement tests (Kozulin & Garb, 2002). Before Lantolf and Poehner (2011), no studies had situated DA within a school curriculum in a proficiency-based program in which the goal was communicative and interactive competence in cultural contexts. In these types of programs, more specifically in early language learning programs, the goal is for students to be able to make meaning with the language (Curtain & Dahlberg, 2010). Curtain and Dahlberg write that children learn languages best when “Learning takes place in communicative contexts that carry significance for the student...Students learn grammar in context, through usage and not through analysis. Grammar for its own sake is not the object of instruction” (p.xxi). In strong early language learning programs, little time is dedicated to grammar instruction and errors are overlooked unless they interfere with meaning (Curtain & Dahlberg, 2010).

In an attempt to remain true to both applied linguistic theory and research on effective language pedagogy, DA in the present study was situated within a meaningful and authentic context. The curriculum for the semester was based on the theme of an imaginary trip to Argentina. Students were motivated to study question formation because their teacher had invited a guest from Argentina to class. Within this authentic and meaningful context, students’ questions were examined and mediated for both meaning and form (i.e. grammatical accuracy). A focus on form was a slight departure from the typical procedures of the Spanish teacher. She typically did not correct form unless it interfered with meaning. Attention was rarely given to inaccurate grammar as long as the meaning of the students’ utterances was understood. For

example, when the speaker from Argentina came to the class after the DA program, one student asked *¿Dónde tu casa?* (Where your house?) This question was not grammatically accurate because it did not contain a verb. The speaker immediately understood what the student was asking and provided the appropriate response. An error such as leaving out a verb did not interfere with the meaning of this question and, therefore, the interaction went forward with no error correction or comment on accuracy from the teacher. While this error was mediated during the DA program, it most likely would have been overlooked before the DA program.

Educators must continue to research how to reconcile the goal of encouraging student meaning making from the perspective of language pedagogy and the goal of grammatical accuracy from the perspective of applied linguistics and DA, as many of the previous studies of DA seem to suggest. The effects of DA must always be measured against the pedagogical task and context in which students are learning. When a task is contextualized and purposeful, students will be more motivated to succeed and will perform better on that task. DA needs to situate itself within this framework of contextualized language teaching and, as this research has shown, can do so with positive results.

5.2 PEER MEDIATION

In a further attempt to explore DA and effective language pedagogy in classrooms, four days of the DA program consisted of small group work. Small group work is essential in the foreign language classroom because it allows more students the opportunity to speak and experiment with the language (Long & Porter, 1985; Curtain & Dahlberg, 2010). Small group work

promoted development for the majority of students in the present study. Mediation that occurred during small group work was a necessary complement to large group DA.

5.2.1 Mediation versus Random Assistance

While the term *mediation* is used in the present study to refer to the peer assistance that occurred during small group work, the term *help* might be more appropriate. Because one cannot be sure that the peer assistance led to development, this assistance cannot be unequivocally called mediation. Mediation prompts should be arranged from implicit to explicit and should result in development. During small group work, assistance was given haphazardly without any particular order. Because mediation is so difficult to define, it is not clear whether the students were mediating each other at all. While the term mediation is used in the present study to refer to peer assistance, it is used with these considerations in mind.

5.2.2 Students as Mediators

As Curtain and Dahlberg (2010) suggest, during small group work, the students took responsibility for assisting each other and began to act as mediators. The students in the present study were capable of scaffolding their peers, echoing findings of Donato (1994), Storch (2002), Ohta (2005) and De Guerrero and Villamil (2000) and the research in ‘*linguaging*’ of Swain, Lapkin, Knouzi, Suzuki and Brooks (2009). It was quite common for students to practice strategies described by Ohta (2005) such as correction, repetition, or clarification requests. In the present study, correction of classmates was the third most common form of peer mediation,

occurring ten times over the four day period. Repetition and clarification requests occurred on countless occasions.

Wertsch and Hickmann (1987) found that students often provided their peers with the correct answer, instead of working with those peers to arrive at the correct answer. In the present study, it was quite common for students to provide their peers with an English or Spanish translation, but contrary to the findings of Wertsch and Hickmann, rarely would a student form an entire question for their peer. As the following example reveals, this was most likely because no group member could form the entire question alone. The following excerpt illustrates an example of collective scaffolding from the group composed of Elena (E), Takuya (T) and Thad (Th) on the second day of group work.

88. E: Where do you live in Argentina?
89. T: yeah...how do you say where?
90. E: yeah, where
91. T: Dónde
Where
92. Th: Dónde está...
Where is
93. I: Dónde...doonde...Dónde es where...where is...your
94. T: nombre..what is your name
Name
95. Th: Don't do nombre...where is your name?
96. T: Dónde es tu...
Where is your...
97. E: You said, ¿Dónde es tu nombre?!
Where is your name?!
98. Th: Where is your name! (laughing)

of Storch and Aldosari (2010), students relied on their first language to facilitate deliberations over vocabulary and for task management. In the lines above, English was used to begin the interaction when Elena offered an idea for a question, *Where do you live in Argentina?* Several lines later, Takuya revealed his misunderstanding by completing the question *¿Dónde esta tu...?* (Where is your...) with the word *nombre* (name). Thad and Elena facilitated deliberations over vocabulary by translating this for Takuya and steering the group back onto the right track. In each of these two scenarios, English was essential for successful completion of the task by these novice level speakers, supporting the findings of De Guerrero and Villamil (2000) and Antón and DiCamilla (1998) that “stifling the use of the L1 in collaborative writing tasks in the L2 classroom may not be a wise pedagogical practice because it discourages the employment of a critical psychological tool that is essential for collaboration” (p.64). Brooks et al. (1997) argue that while students’ native language initially facilitates language learning, use of the first language is eventually replaced by foreign language only interactions.

5.2.3 Differences in Peer and Teacher Mediation

The students generally mediated their peers using different mediating moves than those employed by their teacher. While they did mediate each other during small group work, they were clearly not implementing DA. Not surprisingly, students did not provide mediation attuned to the ZPD of their peers. Peer mediation was largely explicit and unconsciously provided, that is to say, students were not intentionally promoting the development of their group members.

One fundamental difference in peer and teacher mediation was that students offered more bi-directional mediation than the teacher. For example, when the teacher provided students with a forced-choice option, she knew the correct answer and was merely providing responsive

assistance to students by supplying a question with the possible answer. When students provided their classmates with a forced-choice option, it was usually because they genuinely were not certain of the answer, as the following excerpt illustrates.

105. W: Cuándo es, cuándo, cuándo, cuándo means when, right?
When is, when, when, when

106. R: ¿Cuándo?
When?

107. W: Or is it dónde?
Or is it where?

108. A: ¿Qué es un equipo favorito?*

What is a favorite team?

109. R: Dónde means where.
Where

110. W: Yeah, Qué es equi, equip—yeah, whatever you said

111. A: ¿Qué es equipo favorito?...What is favorite team?

In lines 111-117, Wayne (W), Roxanne (R) and Alex (A) worked together to write the question “What is your favorite team? In line 107, Wayne offered a forced choice option to his group member. In this excerpt, it seems that that Wayne did not know the answer to this question. He was genuinely wondering if *when* was translated as *cuándo* or *dónde*. Had the teacher asked “or is it dónde?”, this would have been a clue to students that the word was *dónde*. Wayne’s question, even though he was incorrect in this case, was an authentic question representing his uncertainty.

The mediation prompt in which students repeated their group members questioningly was also more authentic than the prompt used by the teacher. Lines 112-116 occurred in the group of Elena, Takuya and Thad.

112. Th: ¿Cuándo es ummm cumpleaños?
When is ummm birthday

113. T: cumpleaños...cuándo es? (he is writing)
birthday... when is?

114. E: Cuando es?
When is?

115. Th: Cuando es.
When is.

116. T: cum-ple-añ-os
birth-day

As Storch (2001) found, the students in this excerpt constructed their questions by extending upon each other's utterances, which Mercer (1995) labels 'cumulative' talk. In cumulative talk, students repeat each other, confirm each other's utterances and elaborate upon others' utterances. Takuya repeated Thad to ask if *cuándo es* (when is) was the correct way to begin the question. Elena echoed this concern by also repeating *cuándo es*. Thad responded to their concern by definitively stating *cuándo es*. Elena and Takuya were not re-phrasing what Thad had said in order to indicate that it was incorrect, but they were genuinely wondering if that was correct. In essence, they each asked this question in an attempt to receive mediation, not in an attempt to mediate. The mediation requested and provided by the students created a space for working toward a common goal and in this way may represent the emergence of a collective ZPD. Similar to the findings of Storch (2001), the students seemed to "complete each other's utterances, speaking as if they are one" (p.38).

5.2.4 Small Group Work as Necessary Complement to Large Group DA

Although peer mediation was not as systematic and calibrated to students' ZPDs as teacher mediation, it was a necessary complement to large group DA. The authenticity described above perhaps created a less threatening space for students to voice their misconceptions and uncertainty about features of the language. Similar to the findings of Ohta (2005), students who rarely participated during large group instruction participated regularly in small group work. One small group of students in this study was composed of three children who were rated as rarely participating: Elena, Takuya and Thad. During the four days of small group work, they were each quite vocal and were able to voice their confusion. The following lines are an excerpt from the group of Thad, Elena and Takuya. This excerpt is representative of the entire transcript in that all three students are vocal and participate equally.

117. Thad: What's your thing? What's your question? (no one answers) Okay, I'll do one. What's *dónde*?

118. Elena: *Dónde*...

119. Takuya: It's what

120. Elena: *Dónde está* is how

121. Takuya: Oh yeah, that is how

122. Thad: How...How is

123. Takuya: *Dónde*, how are you feeling? How are you feeling? That sounds weird

124. Elena: *Dónde*... I'm pretty... its how

125. Takuya: It's not how. *¿Dónde está el baño?* How is the bathroom?

126. Thad: Oh, it's where!

In these lines, no member of this group knows what *dónde* means in English. Takuya argues that it means ‘what’ and Elena argues that it means ‘how’. They eventually work out that *dónde* must mean ‘where’. In the large group setting, Thad and Elena would probably not have resolved this misconception. Because they refrained from participating much during teacher large group instruction, they might have continued to think that *dónde* meant ‘how’.

These findings echo those of Swain et al. (2009) regarding the concept of ‘linguaging’. ‘Linguaging’ is “the process of making meaning and shaping knowledge and experience through language” (Swain, 2006, p. 89) and it allows students to “transform inner thoughts to external knowing” (Swain et al., 2009, p. 5). When Thad, Elena and Takuya first came together in their group, they had limited knowledge of how to ask questions in Spanish. Through verbalization of their thoughts, questions, and confusion, each of these students showed a deeper understanding of question use and formation following group work.

This illustrative example points to the internalization that may have occurred during small group work for students who would not have normally participated in the large group setting. Perhaps due to this discussion, all three of these students were able to ask questions with the word *dónde* on their transcendence tasks. Thad formed two questions with *dónde* on his NTT and three with *dónde* on his FTT. Elena wrote one question on her FTT with *dónde*. To return to the intersection of DA and effective language pedagogy, peer mediation effectively complemented large group DA. Large group DA provided students with the fundamental knowledge of question formation that allowed them to begin the task of writing questions in small groups. Small group work was essential for students to work through what they had learned in the large group setting, especially for those students too shy to volunteer in front of the

entire class. In small group work, students learned from their peers and from the ‘linguaging’ that took place (Swain et al., 2009).

5.2.5 Mediation as ‘unnatural’

Ball and Forzani (2009) argue that teaching is *unnatural*, and illustrate their argument with the example of questioning. In real life, people ask questions every day because they do not know the answer. This was evidenced above in the excerpts from small group work. Students asked authentic questions in search of answers, not in an attempt to provide mediation. Teachers must ask questions daily to which they *do* know the answers. Ball and Forzani write, “Comparing common ways of being in adult life with ways of being entailed by teaching reveals the fundamental differences in orientation” (p. 499). This argument also applies to mediation. Many forms of mediation require that the teacher ask questions to which he or she already knows the answer. Mediation also requires teachers to structure questions in particular sequences and with particular wordings. Because mediation is also *unnatural*, because we do not typically intentionally or consciously mediate our family and friends on a daily basis, learning how to provide mediation must be taught. To mediate students, especially on-line when prompts are not pre-determined, requires skill and practice and an understanding of how development occurs in dialogic interaction between experts and novices.

5.2.6 Summary

A decline in the quantity and quality of mediation required by students occurred after students worked in small groups for four days. The day before small group work began, students required

an average of 2.1 mediation prompts in the large group setting. After small group work, this number decreased to 1.5, indicating that students required less assistance in forming Spanish questions after working with their peers. Although we cannot be sure that peer mediation was responsible for the increase in control of interrogatives, it was observed that on this last day of the DA program, a mere pause was enough for most students to correct their mistakes. Additionally, six of thirteen students required no mediation at all.

While Shamir and Tzuriel (2002) point out that peer collaborations often do not take full advantage of learners' ZPDs, they are quite useful and necessary in a classroom composed of twenty students who receive instruction for only fifteen minutes a day, as this study has clearly shown. By providing students with the opportunity to work in small groups, each child was able to participate more, ask questions that perhaps they feared asking in front of the entire class, and hypothesize about different questions. Ideally, a teacher would be present in every group in order to take full advantage of learners' ZPDs, but this is not practical or possible in early language learning programs.

Although students provided mediation while working in small groups, this mediation was quite different from the mediation provided by the teacher. The teacher was trained to provide mediation arranged from implicit prompts to explicit prompts. She first offered implicit prompts such as a pause and repetition. Only when necessary would she offer more explicit mediation such as a forced choice option or correction. The students often immediately offered the most explicit prompt available. This finding points to the importance of training teachers to effectively mediate students.

Finally, As Donato (1988) found, there were many instances during small group work in which peer assistance seemed to be internalized by group members. This finding suggests that

many of students' misconceptions were resolved during small group work. It appears that large group DA may be necessary but is not sufficient for language development of *all* students. Small group work as a complement to large group DA is a topic that will require future research.

5.3 VARYING LEVELS OF DEVELOPMENT

Interrogative use and formation was chosen as the language function and grammatical point to target in this DA program. According to Poehner (2009), in order for group DA to be effective, the targeted structure must be within the ZPD of all students in the class. It was clear from the pre-test that interrogative use and formation was not within the ADL of any student in the class. Based on the pre-test scores, instruction and mediation were tailored to what the researcher assumed was the ZPD of the group as a whole (Chaiklin, 2003). Not until the transcendence tasks did it become clear that interrogative use and formation was perhaps not within the ZPD of all students in the class.

As expected, students moved through the ZPD at different rates, developing interrogative use and formation at varying speeds. Development is defined in this context as the ability to perform on the post-test, NTT and FTT independently in order to produce contextually relevant questions that can be interpreted. Echoing the findings of Ableeva (2008), students required varying amounts of mediation during the DA program and performed very differently on the post-test and transcendence tasks. As soon as mediation began, some students seemed to move through their ZPD almost immediately. For example, Roxanne and Sara quickly developed interrogative use and formation and scored 20 out of 20 on their post-test. These two students required little mediation during the DA program. Sara volunteered questions twice during the

DA program and required no mediation. Roxanne volunteered questions on four occasions; twice requiring no mediation, once requiring two prompts and another time requiring four prompts. Both Sara and Roxanne acted primarily as mediators during small group work.

Other students seemed to internalize mediation, yet were never entirely capable of independent performance. Takuya is a useful example in this situation. Takuya mostly received mediation during small group work, but occasionally acted as a mediator also. While he never internalized the fact that questions require a verb, he was able to form questions that had meaning, such as *¿Qué tu popular actividad en Argentina?* (What your activity popular in Argentina?) Perhaps with a few additional days of DA or small group work, Takuya would have reached independent performance.

Interrogative use and formation was not within the ZPD of other students. One particular student, Jamal, never achieved independent performance. By the end of the DA program, he still required assistance to correctly form a question. On the last day of question formation, Jamal still required four prompts. On the post-test, NTT, and FTT, the only comprehensible question that Jamal could ask was *¿Cómo estás?* (How are you?). Not surprisingly, Jamal was not able to offer mediation during small group work.

These findings point to an additional strength of incorporating small group work into large group DA. It seems that perhaps the students who acted as mediators during small group work were probably the ones for whom the structure was within their ZPD. It is possible that interrogative use and formation was not within the ZPD of those who were still struggling during small group work. Observations during small group work may allow the teacher to better diagnose the ZPD of the group by observing the students for whom large group mediation was

effective and those for whom large group mediation was not. While some students did quite well in small group work and could provide mediation, others seemed lost.

5.3.1 Role of Motivation in DA

Masgoret and Gardner (2003) argue that motivation is the most influential factor in learning a new language; motivation is also inextricably tied to DA (Haywood and Lidz, 2006). Haywood and Lidz (2006) argue that researchers should assess students' intrinsic motivation psychometrically as one might assess intelligence and cognitive processing. Levels of motivation can be tied to course goals of the learner, personal beliefs about success or failure, the ability of the learner to provide self-reward, and the nature of the teacher's assistance to the learner (Oxford and Shearin, 1994). Levels of motivation can also be influenced by the specific task.

While motivation was not assessed in the present study, the performance of one student in particular points to the need for motivation assessment. Although Jamal was attentive and participatory during large group instruction, he was off-task during group work. While working in a small group with Sara and Mary, Jamal often chatted with students who walked by. He made funny faces at the camera or played with items lying around. In the case of Jamal, it seems as if there was a lack of motivation for the specific group work task, not toward instruction in general. Dornyei and Kromos (2000) suggest that students with a positive attitude toward a task are more engaged and produce more language than students without a positive attitude. It is possible that Jamal did not enjoy working with his group members or that he was motivated by the attention of the teacher. The same could be said for Ivan. Ivan was also unengaged and unparticipatory during small group work. During large group work, he participated regularly. The difference between these two students is that Ivan scored well on this post-test (20 out of 20), NTT (19 out

of 20) and FTT (16 out of 20), while Jamal struggled (17 out of 20, 5 out of 20, and 11 out of 20, respectively). The source of Jamal's low performance could be due to several factors, one of which might have been that the structure being taught was not in his ZPD at any time during the unit of work.

5.3.2 Causes of Low Performance

The following transcript suggests that perhaps Jamal's group members did not value his contributions and therefore he was shut down during group work. Throughout group work, Jamal was paired with Sara and Mary. The first lines of their dialogue on the first day of group work are:

127.S: So, what should the first one be?

128.J: What's your favorite football team?

129.S: You have to say that in Spanish. (smiles)

130.M: You have to say that in Spanish.

131. (Jamal makes a face, punches the air, and says "oh man!")

132.J: Why?

133.S: (Points to audio recorder)

In this first interaction, we see that the two girls, Mary and Sara, somewhat united against Jamal. They echoed each other in lines 129 and 130. Jamal began to play the role of the follower in this group. Several minutes later in the class period, during which Jamal had been mostly silent, the following interaction occurred.

134.J: Where were you born? What year were you born?

135.S: What?

136.M: Do we really need to know that?

137.S: No.

138.M: It's personal.

139.J: I do.

140.S: It's too personal.

141.J: Not all the time.

In lines 134-141, we again see that Jamal's contribution to the group is shut down. For a second time, Jamal offered an idea for a question in English. Again, Sara and Mary echoed each other and told Jamal that his question was essentially not good enough for the group. Toward the end of the class period, the same type of interaction occurred again.

142.S: jugador de fútbol favorito
Favorite soccer player

143. (Jamal says something inaudible)

144.M: (to Jamal) You're too personal!

145. (Jamal is making funny faces at the camera)

146.J: I'm bored.

147.M: Do some work!

148.S: (to Jamal) You think of the next question!

By the end of group work on Day 1, Jamal had given up on participating in this group session. His contributions had been ignored or dismissed and he had become bored. It seems that status may have influenced students' social interactions during group work in terms of whose opinions were acknowledged and which students were silenced (Brock, Rovegno, & Oliver, 2009). It is possible that Jamal was silenced due to gender (only male in the group), race (only African-American in the group), socioeconomic status (only student in the group on a full scholarship) or

some other difference. As Delpit (1988) argues, Jamal may have been affected by the ‘culture of power’ in which “an individual or group determine another’s intelligence or ‘normalcy’” (pp. 24-25). This finding suggests the delicate balance that must be negotiated during group formation and the careful monitoring of group work that should occur.

5.3.3 Summary

Although DA can be integrated into the learning process as part of classroom instruction, it can also provide important information about individual students. The findings in this study were similar to those of Kozulin and Garb (2002) in that there was a wide range of development among students. Sternberg and Grigorenko (2002) urge that DA should be used to make recommendations for learners, not just to describe a learner’s performance. As Garb (1997) argues, students who do well on the pre-test and show high learning potential during the DA program should be given more difficult materials. Students with low learning potential should be given more opportunities for learning and practice. DA can be a powerful mechanism for helping teachers determine how their instruction should be differentiated for different learners. As Garb (1997) writes, “DA provides us with a model of how formative assessment can be integrated into the learning process and combined with the goals of summative assessment.”

5.4 TRANSCENDENCE OF KNOWLEDGE

A final point for discussion concerns the transcendence of knowledge. Similar to the findings of Brown and Ferrara (1985) and Campione, Brown, Ferrara and Bryant (1984) students in the

present study were further differentiated based on their scores on the NTT and FTT. While some students could “sustain their performance when variations are introduced and tasks become more complex” (Poehner, 2007, p.327), others could not. As found by Palinscar, David, Winn and Stevens (1991) the students in this study performed at varying ability levels, despite similar scores on the pre-test.

Echoing the findings of Feuerstein et al., (1979), several of the students in this study struggled to apply their knowledge of interrogative use and formation when the context changed. For example, Mary scored 20 out of 20 on the post-test, but only 11 out of 20 on the NTT. Jamal scored 17 out of 20 on the post-test, but only 5 out of 20 on the NTT. These students knowledge of interrogative use and formation did not entirely transcend to new contexts. Feuerstein argues that performance on the post-test reveals internalization of the mediation provided during the DA program. Only by examining scores on the transcendence tasks can the degree of development of each student be observed. Students must be required to recontextualize their learning to truly measure development, that is, they must be able to apply their knowledge to new and different contexts.

5.4.1 Improvement from NTT to FTT

Two transcendence tasks were administered after the post-test that required the transcendence of previous learning (Feuerstein, Rand & Rynders, 1988). Typically, students perform better on the NTT than the FTT as the context is more similar to the context in which the learning occurred (Ableeva, 2008; Campione & Brown, 1987). Contrary to the findings of Poehner (2009), Ableeva (2008) and Campione and Brown (1987), students in the present study performed better on the FTT than the NTT. One focal student, Tom, even performed better on the FTT than the

post-test. There are several possible explanations for this increase in scores on the FTT, three of which are presented below.

It is possible that the social, interactive design of the FTT appealed to students and provided them with the motivation needed to perform. Instead of sitting alone at a desk writing questions, students sat with a partner in front of their teacher and a video camera. The assessment was static in that no mediation was given, but perhaps the presence of the teacher and the peer acted as a form of mediation. Aljaafreh and Lantolf (1994) found that the presence of an assessor, even when refusing to offer mediation, could be implicit mediation for the learner. They write:

We refer to the help triggered by the dialogic presence of another, more expert, individual as the collaborative frame. The collaborative frame seems to mark a situation as one in which correction is to occur, even prior to any overt move on the part of the tutor, and thus represents the minimal level of contingent help available to the learner in the ZPD (p. 472).

While a ‘more expert individual’ was present during the NTT, she was circulating throughout the group of twenty students, not paying particular attention to any single child. During the FTT, the teacher was sitting alongside a pair of students, completely engaged in their interaction.

A second possible explanation for students’ improved performance on the FTT is that the modality of communication was oral instead of written, similar to Ableeva (2008). Poehner (2007) called for future research to investigate transcendence across modalities. When the modality is changed, transmediation occurs, in which meaning is recasted across symbol systems (Siegel, 1995; Suhor, 1984). This occurred in the FTT in which students were required to make meaning orally, as opposed to in writing as with the other three assessments. Whereas Ableeva’s

students performed worse when asked to respond orally versus in writing, the students in this study performed better. Perhaps this is because students in this classroom were more accustomed to oral practice than written practice. In this early language learning program, the majority of the teacher's instruction was oral and required verbal participation (Davin, Troyan, Donato & Hellmann, in review). Due to short fifteen minute class periods, students did not often practice writing. The *Impact* category of the rubric referred to how many questions students asked on each assessment. *Impact* scores were the highest for the FTT (3.58 out of 4) in which students were orally asking questions as opposed to writing them as was done in the other three tasks.

A third possible explanation for students' improved performance on the FTT was that the oral format of this assessment more closely mirrored the ten-day DA program. During the five days of large group instruction, question formation was oral. Although the teacher wrote the questions formed by students on the board, students did not write at all. During the five days of group work, students communicated orally about questions that they wanted to ask, but the group only had to turn in one list of questions. Therefore, in some groups, the same student wrote all of the questions. In other groups, students took turns writing the questions. It is possible that some students wrote questions on the pre-test, post-test and NTT, but never during the DA program.

It is also noteworthy that during the FTT, when students were asked to conduct an interview of a classmate, the interviewee (the person answering the questions but not being assessed) often wanted to help the interviewer. On multiple occasions, the student being interviewed would try to provide a word or an idea for a question to the student acting as the interviewer. Because this assessment was static and did not involve mediation prompts, the teacher would remind the students that they could not help each other. Interestingly, this task, which could have been an engaging interpersonal task became more of a presentational task

because there was little negotiation of meaning. To uphold the tenets of DA and the research design, some authenticity was sacrificed.

5.4.2 Decrease in Comprehensibility

On the NTT and FTT, students scored the lowest on the category of comprehensibility. As the task changed and students were asked to transfer their knowledge of interrogative use and formation to different contexts, they became less comprehensible to their teacher. Because students were interacting with their peers in a face-to-face setting, it is quite possible that they became less comprehensible to their teacher and the researcher, but still remained quite comprehensible to each other. A learner is often more comprehensible to another learner than he or she is to a proficient speaker of the language. Body language and facial expressions can also contribute to this comprehensibility.

A second possibility for the decrease in comprehensibility on the FTT is that students were required to ask questions spontaneously. On the post-test and NTT, students could write a question, erase, and fix their errors. In the oral format, erasing previous words was not possible. There was also no permanence to the question to which they could refer, examine, and revise after each utterance.

The decrease in comprehensibility on the NTT is a bit more difficult to understand. With the exception of the post-test, students were the least comprehensible on the NTT. The average comprehensibility score on the NTT was 2.6, as compared to 3.7 on the post-test and 3.3 on the FTT. This decrease in comprehensibility is an area in need of further research.

5.5 LIMITATIONS

Two limitations of the present study concerned the lack of a motivation assessment and the weaknesses of the scoring rubric. As Haywood and Lidz (2006) suggest, an assessment of intrinsic motivation would have been useful in this study to determine how motivated the focal students were. As no such assessment was implemented, it was impossible to determine whether the small movement of certain students through the ZPD was due to motivation or to some other variable. Even with a psychometric assessment of motivation, a researcher might have difficulty revealing whether the lack of motivation was due to the particular task or the subject overall.

The rubric used to score the post-test, NTT and FTT should be improved as well. One limitation of the rubric was that the lowest possible score for each of the five categories (language function, language control, vocabulary, impact and comprehensibility) was one. As a result, the lowest possible score on the rubric was 5 out of 20. A student who wrote questions in English as opposed to Spanish would have received a 5, as was the case on many of the pre-tests. Had the lowest score on the rubric been zero, there would have been a more accurate picture of what students could do. With this said, a 5 out of 20 is more motivating for students than a 0 out of 20.

A second limitation of the rubric was that a student could write one appropriate and accurate question and receive a high score on the assessments. The quantity of questions written was measured by only one category, *Impact*. For that reason, a student like Jamal, could write only one question, even a memorized question such as *Cómo estás?* (How are you?) and receive a score of 17 out of 20. For future research, better scoring procedures are needed in the research design.

A third limitation of the scoring rubric was that the rubric did not award points for using a variety of question words. A student who wrote six questions that all began with *¿Qué?* (What) could potentially score just as well as a student who managed to write a question with every question word taught. Furthermore, a student who wrote six questions that read *¿Qué es tu _____ favorito?* (What is your favorite _____?) with a different noun each time (food, sport, animal) could score as well as a student who wrote a variety of diverse questions. While the assessments did not ask students to attempt to use as many question words as possible, this is an aspect of the research design that should be included in future studies. Likewise, a category should be included on the rubric to address the use of a variety of question words, such as *text type*.

5.5.1 Learner Profiles

Perhaps a valuable solution to the limitations of the scoring rubric would be the inclusion of learner profiles for students. Antonek, Donato and Tucker (2000) report that profiles enable a researcher to “document and examine more closely differential linguistic development and differential engagement” (p.330). Learner profiles of achievement would allow one to go beyond the product orientation of the present study to talk more about the process. This approach could be quite useful in proficiency assessments as well. For example, in a dynamic Oral Proficiency Interview (OPI), a learner profile could accompany the proficiency rating. Instead of simply knowing that a student is an intermediate high Spanish speaker, one might also read that the student particularly struggles with the past tense. A learner profile pays respect to the process of an assessment in addition to the product.

5.6 IMPLICATIONS

While many implications of this research have been discussed above, there are three that deserve reiteration. First, DA in foreign language programs often focuses on the understanding of a grammatical point. Grammar is rarely taught in early language learning programs. The use of DA in more communicatively-oriented and contextualized tasks needs to be explored. Kozulin and Garb (2002) have explored the use of DA with EFL students in interpretive tasks. As Garner (1987) describes, this requires one to: (1) render into overt form the cognitive processes needed to do this, (2) do task analysis of strategies to be taught, and (3) determine a variety of activities where this strategy would work, and (4) explicitly teach transfer to those activities. One must determine the cognitive processes needed in interpretive, interpersonal, and presentational communication in order to determine how to effectively implement DA aimed at development in these areas.

Second, although this study was implemented in only one class and the findings cannot be generalized to the wider population, it does suggest the usefulness of DA implementation in early language learning programs. This technique provides the teacher with a clearer idea of his or her students' learning while also promoting development for students within the class. By distinguishing the varying levels of learning potential in students, teachers can more effectively design interventions and differentiate instruction. Future research might examine how teachers utilize the knowledge gleaned from DA to design interventions and differentiate instruction.

Third, the present study has important implications for teacher preparation and professional development. As Ball and Forzani (2009) argue, teaching is *unnatural*. Teachers must be taught the importance of providing mediation to their students attuned to the ZPD of those students. In the present study, the Spanish teacher was able to implement DA with limited

professional development. This finding suggests that other language teachers might also be able to easily implement DA, within certain parameters. The interventionist format of DA, as was used in this research, consists of pre-determined standardized prompts. Interactionist DA, in which mediation is determined spontaneously based on students' responses, is much more difficult to implement and requires deeper knowledge and experience. Furthermore, DA in the present study was aimed at a specific grammatical point. The types of errors that students might make could be predicted as well as the mediation required to address those errors. DA is much more difficult to implement with other areas of language instruction such as vocabulary instruction or listening comprehension. Future research should explore professional development focused on DA and the outcomes of this professional development for teachers. Perhaps the most effective method of preparing teachers with limited time for professional development to use DA would be to teach them how to provide graduated mediation arranged from implicit to explicit based on pre-determined, standardized prompts.

5.7 CONCLUSIONS

This study investigated the implementation of DA in a fourth and fifth grade Spanish classroom studying interrogative use and formation. The amount of mediation required decreased each day throughout the DA program as the students moved from assisted to unassisted performance. Mediation provided during the DA program benefitted all students; from novice low speakers of Spanish to novice high speakers of Spanish. Most students showed significant growth from the pre-test to the post-test. Scores decreased slightly from the post-test to the NTT, as one might expect. Interestingly, scores increased from the NTT to the FTT. Possible explanations for this

increase were discussed. Finally, transcriptions from small group work revealed that students acted as peer mediators during group work. Peer mediation looked quite different than the mediation provided by the teacher. Whether students actually mediated each other or simply helped each other deserves further research. Despite this distinction, students did work collectively to prepare questions for their Argentinean guest.

One challenge in particular with the present study was remaining true to the tenets of DA while also remaining true to proficiency-based instruction in an early language learning program. The goal of this study was to integrate DA, which is emerging in the field of linguistics, with an elementary Spanish program in which the goal is oral proficiency for students. While each of the assessment tasks in this study was communicative and authentic, some authenticity was sacrificed to maintain the integrity of DA. For example, the FTT was more of a presentational task than an interpersonal task because peer mediation would have skewed results. In a real-life situation, students could ask their conversation partner for assistance.

As student populations in early language learning programs become more diverse, teachers must be able to diagnose the varying needs of their students (Shrum & Glisan, 2010). With only one teacher and often more than twenty students per classroom, this is no easy feat. DA offers a powerful way to diagnose the mental development of students and map future instruction. Findings from the present study suggest that teachers could be prepared to dynamically assess their students with limited professional development.

APPENDIX A

PROFICIENCY LEVELS OF FOCAL STUDENTS

Student Name	Proficiency Level
Roxanne	Novice High
Sara	Novice High
Thad	Novice High
Elena	Novice Mid
Mary	Novice Mid
Tom	Novice Mid
Ivan	Novice Low
Takuya	Novice Low
Jamal	Novice Low

APPENDIX B

ORAL PARTICIPATION CHECKLIST

Student Name	Number of Times Student Participates Orally During Whole Class Instruction				
	Monday	Tuesday	Wednesday	Thursday	Friday

APPENDIX C

SCORING RUBRIC FOR PRE-TEST, POST-TEST, NTT AND FTT

	4	3	2	1
<p>Language Function</p> <p>Are my questions appropriate for the context?</p>	Questions are appropriate for the context in >75% of questions.	Questions are appropriate for the context in >50% of questions.	Questions are appropriate for the context in >25% of questions.	Questions are appropriate for the context in <25% of questions.
<p>Language Control</p> <p>Are my words in the correct order?</p>	Words are in the correct order in >75% of questions.	Words are in the correct order in >50% of questions.	Words are in the correct order in >25% of questions.	Words are in the correct order in <25% of questions.
<p>Vocabulary</p> <p>Did I use the correct question word?</p>	Correct question word is used for the context of the question in >75% of questions.	Correct question word is used for the context of the question in >50% of questions.	Correct question word is used for the context of the question in >25% of questions.	Correct question word is used for the context of the question in <25% of questions.
<p>Impact</p> <p>How many questions was I able to write?</p>	Includes 6 or more questions.	Includes 4 or 5 questions.	Includes 3 questions.	Includes 2 questions or less.

<p>Comprehensibility</p> <p>Could a sympathetic reader/listener of Spanish understand my questions?</p>	<p>A sympathetic reader/listener could understand >75% of my questions.</p>	<p>A sympathetic reader/listener could understand >50% of my questions.</p>	<p>A sympathetic reader/listener could understand >25% of my questions.</p>	<p>A sympathetic reader/listener could understand <25% of my questions.</p>
----------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------	--------------------------------------------------------------------------------	--------------------------------------------------------------------------------	--------------------------------------------------------------------------------

APPENDIX D

OBSERVATION PROTOCOL

Focal Student (#1-9) _____

Date _____

Question formed: _____

Mediation Provided	Reciprocal Move

APPENDIX E

MEDIATION TYPOLOGY AND LEVELS OF EXPLICITNESS

Level of Explicitness	Mediation Move
Prompt 1	Pause with skeptical look
Prompt 2	Repetition of entire phrase by teacher
Prompt 3	Repetition of specific site of error
Prompt 4	Forced choice option
Prompt 5	Correct response and explanation provided

APPENDIX F

DAILY INSTRUCTION DURING DA PROGRAM

Day	Activity	Class Configuration	Production by Students
Day 1	Pre-test	Individual	Written
Day 2	Introduction of question words (qué, quién, cuándo, cómo, dónde)	Class	Oral
Day 3	Review and practice with question words	Class	Oral
Day 4	Teach question structure – verb form and word order	Class	Oral
Day 5	Practice with question structure	Class	Oral and written
Day 6	Draft sample questions for guest speaker on chalkboard	Class	Oral
Day 7	Without visual from Friday, prepare questions for guest speaker	Groups	Oral and written*
Day 8	Continue to work on questions for guest speaker	Groups	Oral and written*
Day 9	Trade questions with other group and provide feedback	Groups	Oral and written*
Day 10	Review feedback from groups and make changes	Groups	Oral and written*
Day 11	Rehearse questions for guest speaker	Class	Oral
Day 12	Post-test	Individual	Written
Day 13	Interview guest speaker	Class	Oral
Day 17	Near transcendence task – Q&A flyer about Argentina	Individual	Written
Day 23	Far transcendence task – Interview questions	Individual/Pairs	Written

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