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Dynamic assessment: Towards a model of dialogic engagement

Robert Summers

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Dynamic Assessment: Towards a Model of Dialogic Engagement

by

Robert Summers

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Secondary Education
College of Education
University of South Florida

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Dynamic Assessment: Towards a Model of Dialogic Engagement

Robert Summers

ABSTRACT

This study investigated the effects of Dynamic Assessment (DA) training on the mediational strategies of experienced teachers of French as a foreign language. Moreover the strategies that mediators used for students at different levels of language experience were investigated. Last the ways in which mediators manifested mediational sensitivity, reciprocity and management was examined.

Four mediators underwent DA training that exposed them to the theoretical underpinnings of DA as well as sound DA procedures. To determine the effect of this training, the way in which the mediators conducted their mediation was compared from pre-DA training to post-DA training.

Three of these four mediators worked with 12 students of French as a foreign language at different levels of language learning experience. Their interactions were recorded, transcribed and analyzed.

The results of this study show that the DA training did indeed have an affect on the way in which mediators conducted their mediation with students. Also there seems to be a difference, however minute, in the way that mediators mediate students possessing different levels of language experience.

The implications of this study suggest that mediators would have benefitted from more robust DA training as well as an increased field experience with DA. Second students should also be trained in DA procedures so that they may be able to better participate in the dialogic activity that occurs during mediation. Third more foreign language practitioner focused definitions of DA and cognition, within a Sociocultural Theory framework, are offered. It is believed that more accessible definitions will facilitate DA's use in the foreign language classroom.

Chapter 1

The following chapter provides an overview of the study entitled “Dynamic Assessment: Towards a Model of Online Dialogic Engagement.” It begins with a discussion of the background of dynamic assessment (henceforth DA). Next the discussion moves to the justification of the research and a statement of the problem. A description of the study is given and the research questions that guide the exploration of the phenomena are detailed. The final two sections address specific terms that mediate one’s understanding of DA and SCT and the chapter concludes with limitations of the study.

Background

This study addresses the implications of DA training on mediators, as well as the behaviors that occur during DA mediation sessions among university-level students of French as they are taking a computerized exam. DA is sometimes misunderstood as formative or informal assessment, and is therefore administered incorrectly (Lantolf & Thorne, 2005). To this end, this study will provide teachers with a theory informed and principled approach to DA administration. Moreover, the investigation of DA training is urged by Erben, Ban and Summers (2008).

The regulatory behaviors and activities that take place during DA sessions were recorded and analyzed. Taxonomies were created that

highlight the differences in behavior use among language experience level and the way that mediators and students externalized reciprocity, mediational sensitivity and management was investigated. The focus of this study is on how students and teachers engage in dialogic interaction. This follows the suggestions of Erben (2001) and Poehner (2005) where they detail the fact that the learner's ability to respond and manage mediation is useful in creating an atmosphere where development can occur.

While there is a great deal of work done in the fields of special education and psychology concerning DA (Elliot, 2003; Lidz, 1993, 2000; Sternberg & Grigorenko 2002). There are relatively few studies on DA in a second language acquisition (SLA) context (Antón cited in Lantolf and Thorne, 2006; Kozulin & Garb 2002; Poehner 2005). None of these studies investigates DA training and its effects on mediation.

DA provides an alternative viewpoint concerning teaching and assessment. Generally pedagogy and assessment are considered to be separate areas within the broader field of education. In fact, the literature reveals that pedagogy and testing are seen as different specializations that often share different goals and methodologies (Bachman 1990; Shohamy 1998, 2001; McNamara 2001).

The belief that testing and instruction should remain as separate academic endeavors is illustrated by the importance that is placed on the preservation of reliability and validity of testing instruments (Hughes, 2003). There are a number of statistical methods that one can perform in order to

ensure a testing instrument measures what it was intended to measure and does so on a consistent basis. To this end, collaboration with peers and the use of tools during assessment is viewed in a negative manner and often carries with it strict penalties.

DA rejects the dichotomous view of assessment and pedagogy and instead argues that the two should exist in synergistic union with the aim of promoting cognitive development. Separating instruction and assessment removes the context necessary for development to occur. In the Vygotskian approach to learning adopted by this study, development is first created in the interpsychological realm of a learner, and is later transferred into the intrapsychological realm. That is, development is created when two individuals are engaged dialogically. Interaction between individuals is facilitated by the use of tools, the most important of which is language. The novice then internalizes development and higher order thinking is created. In this situation, development precedes learning. Students are not presented with a specific structure because they are developmentally ready, as explained in Piaget's stage theory (1929), but rather jointly work with a peer. Therefore, in socio-cultural theory (SCT), which is underpinned by the ideas of the Russian psychologist Lev Vygotsky, collaboration is not seen as a threat to reliability. Instead collaboration is the source of learning and development. In this paradigm attempts to sterilize a testing situation of outside influence actually strips DA of its to produce cognitive change.

Justification for the Research

The combination of testing and instruction speaks to me as a teacher. If the goal of education is to increase cognitive development in our students, and if one adopts the Vygotskian view of cognition, then the logical conclusion is that assessment and instruction cannot be separated. My personal epistemological stance on learning is based on Vygotsky's beliefs concerning social learning and the development of higher forms of cognition. I believe that learning occurs through social interaction and is later appropriated by the learner to create development. DA investigates a learner's ZPD and therefore offers a more complete view of their development. Whereas, traditional assessment only provides a snapshot of what a learner is presently able to accomplish. Traditional assessment measures actual development instead of potential development. In the Vygotskian conceptualization of learning it makes little sense to separate assessment and instruction.

This study is poised to inform the field of SLA concerning DA and its applications as a tool to promote cognitive development. Moreover, this study will make DA more accessible to classroom practitioners by investigating the implications of DA training and cataloging behaviors that occur between expert/novice dyads engaged dialogically. That is, this dissertation study aims to study the effects of DA training, as well as record and analyze the semiotic tools that mediate language learning in a DA environment.

Statement of the Problem

Traditional testing embraces a conceptualization of learning that is incommensurate with my own personal view of learning. For instance, many feel taking a test in groups is less valid than taking a test by oneself. Many teachers believe testing should be a measure of an individual's work. In fact, collaboration in the psychometric paradigm of assessment is seen as a threat to measures of reliability and validity (Hughes, 2003). In non-academic language collaboration is termed cheating and often carries strict penalties when it occurs in both formal and informal situations. This viewpoint implies that learning occurs only within a person. It is an individual's own personal competencies that are quantified in traditional assessment. If the environment in which the person is situated plays a part in testing, it is of secondary concern.

Paradigms other than SCT view the learner as what must be examined. The mental process that cause cognitive change occur only within the individual. Take for instance, the input hypothesis (Krashen, 1981) where the environment acts upon a language student to provide enough comprehensible input for the language acquisition affect to hasten language output. In this conceptualization of language learning the environment is only a factor in acquisition and not the source of it.

In SCT, development is investigated by the analysis of interactions between people and between people and cultural artifacts. The environment is the source of development (Elkonin, 1998). Working within an SCT

framework researchers are not concerned with controlling for environmental effects. In fact, according to SCT theorists, humans and their social environment cannot be understood if separated (Poehner & Lantolf, 2005)

High-stakes assessments such as the GRE, LSAT or FCAT, whether directly or indirectly, are viewed with a psychometrician's lens as reliable as far as they measure future academic potential and aptitude. This is illustrated by Elliott (2003) where he describes a paradigm shift in the way that resources are allocated in educational settings. With the advent of new educational policies, the resources given to programs are often based on that program's performance in terms of entry and exit test scores. This is not always the best indicator of a student's performance.

Using assessments to make judgments about the future of an individual or an institution makes an assumption that is false. That is to say, such judgments assume a person's future is a continuation of their present and their present performance is a reflection of their past. Standardized assessments encapsulate an individual's actual development. They assume a person's past is the best indicator of their future. However, SCT adopts a conceptualization of the future that looks forward instead of backward. Valisner (2001) calls this future as an emerging process, the present-to-future model. Here the future is constructed from mediated activity where the target is the materialization of new themes and concepts. The future is not simply a continuation of the past. It is embryonic rather than fixed. Poehner & Lantolf, (2005) contend that emergence in the present-to-future model is the

'proximal' in the zone of proximal development. Therefore, if one adopts the SCT paradigm toward learning and development, then the future is seen as evolving rather than fixed. These emerging functions are best determined by what an individual is capable of doing with assistance. This is the essence of DA.

Binet (1909) felt that intelligence testing should be a process, however the IQ tests that he constructed are relatively fixed in that they test the acquisition of past knowledge rather learning potential (Resing, 2000). DA is a much more suitable method of determining a person's ability to learn than non-dynamic assessment (NDA) procedures. This is due to the fact that DA can overcome the shortcomings of traditional assessment such as linguistic, cultural and socio-economic bias. Budoff (1987) asserts that DA removes the biased found in traditional assessment toward children from economically disadvantaged backgrounds by offering them opportunities for clarification on items or concepts not found in their cultural schema. Also poor student performance on high stakes assessment, which has been shown to be linked to heightened feelings of anxiety (Horwitz, Horwitz & Cope, 1986), can be reduced with DA. This is exemplified by Erben, Ban & Summers (2007) where they investigated the use of DA with pre-service teachers in a large, southern university, college of education.

Given the manner in which SCT, the theoretical basis for DA, views the collaborative nature of cognitive development as well as the way in which it conceptualizes the future, a researcher using SCT as a theoretical lens to

examine assessment has no other choice than to use DA. On a pedagogical level this means that classroom practitioners who embrace SCT should eschew the tradition separation of instruction and assessment that is advocated by psychometrics. On a methodological level, teachers should encourage the classroom activities that engender dialogic engagement. Intuitively, the focus on psychometrically 'proven' test should be lessened, as they reflect present and not future development.

Description of the Study

The present study aims to investigate the implications of DA training on mediation as well as classify the different mediational behaviors and tools that are employed to facilitates the development of listening comprehension skills of students of French as a foreign language when engaged in dialogic interaction. The idea of mediation is following Vygotsky's notion of dialogic engagement. In essence this means that learning is socially constructed. As students are mediated by French language experts, they will develop their language skills. This is particularly important when SLA is viewed through the SCT lens, as language is the primary tool that fosters cognitive development.

Firstly, four experienced teachers of French as a foreign language were recruited from the World Language Education (WLE) department at a large southeastern university. In order to determine the implications of DA training, mediators worked with students both before and after the training session. The mediator/student interactions were recorded, transcribed and analyzed for emerging themes. An important aspect of this training was

reflection. Following Bartlett's (1990) elements of reflective teaching, the teachers were asked to analyze and refine their hints and prompts (their teaching behaviors) in order to be more effective mediators. This was done in a trial setting. That is, teachers were given an opportunity to work with students as a part of the DA training workshop. This allowed the mediators to have some experience in DA mediation, have some understanding of student responsiveness to mediation and mediational effectiveness.

Originally, it was planned that 16 students would be paired with four mediators. However, one of the mediators, Vanessa, withdrew from the study after having completed the DA training workshop and after having mediated a student at the fourth level of language learning experience. Therefore, 13 university-level students of French as a foreign language were paired with the four trained mediators. The students represented four different levels of language experience. For instance, three students from first semester French, three students from second semester French, three students from third semester French and four students from fourth semester French participated. The teacher/student groups dialogically worked through a listening assessment that was appropriate to the student's language level. The assessment followed a quasi-pretest/posttest format. Firstly a student will take an assessment without assistance. The teacher analyzed the test and created an action plan based on the student's score and their own classroom experience. Next the mediator and the student will retake the test together; both working jointly to foster cognitive development. The mediation

addressed the students' weaknesses as determined by the instructor and the students' answers to the questions. The final phase of this process was a transfer test. That is, students took a comparable test that contained similar foreign language structures using the various tools that were made available to them through the mediational sessions.

There were five phases of data collection in this study. Firstly, four experienced teachers of French as a foreign language participated in a workshop that instructed them in the proper use of DA in the language classroom. Second students took an assessment without assistance and mediators analyzed their results in order to create a mediational plan. Third students and mediators worked together through the assessment with the aim of promoting cognitive development. Fourth students worked through another assessment, based on similar language structures as the initial assessment. Finally, interviews were conducted with students and mediators.

This entire process was either audio or video recorded and analyzed for the implications of the DA training as well as the teacher behaviors that mediate their student participants. Moreover, the actions of the students that triggered mediation were identified, transcribed, analyzed and catalogued.

A review of the literature surrounding mediation reveals four taxonomies that are appropriate for use in this study. Firstly, Lidz (1991) provides a taxonomy of effective behaviors in mediation based on the interaction between mothers and children participating in DA. Secondly, Erben (2001) uncovered three aspects of quality mediation among pre and

inservice teachers in a Japanese language immersion program. Thirdly, Poehner (2005) established a typology of learner reciprocity with students of French as a foreign language. Lastly, Aljafreeh and Lantolf (1994) created a classification of mediational behaviors that occurred in the ZPD during scaffolding session with learner of English as a second language.

The researcher is aware of these taxonomies, but has chosen not to use them in his study. This is because he believes that interaction within the ZPD is not generalizable and that student/mediator behaviors differ according to each socio-historic context. Therefore, the strategic behaviors that are presented in this study emerged from the thematic analysis of the collected data. The classification of the data is not influenced by the existence of the other taxonomies.

Research Questions

The overarching question that guides this study is as follows:

“How does the use of semiotic tools mediate language learning in a DA environment?” In order to fully investigate the phenomena discussed in the overarching question, three sub-questions will guide the study. They are as follows:

Individual Sub-Questions

1. What are the implications of a DA training sessions on mediation?
2. What are the strategic behaviors that occur during DA sessions and how do these behaviors vary for the different levels of language learner experience?

3. How do learners and teachers externalize reciprocity of mediation, mediational sensitivity and mediational management?

These questions guided the investigation of DA training, the creation of a taxonomy of regulatory behaviors and activities that occur during DA sessions, as well as a description of the ways in which students and mediators externalized reciprocity of mediation, mediational sensitivity and mediational management.

Definition of Terms

In the following section are defined key terms and concepts used in this study.

- **Continuous Access:** Frawley and Lantolf (1985) describe continuous access as backsliding into other and object regulation during onerous tasks or periods of difficulty.
- **Dynamic assessment:** An assessment technique that does not separate instruction and assessment. It is generally carried out between a student and a mediator. They work through an assessment together, while the mediator provides hints and prompts leading the student to the correct answer. DA rejects the notion that independent problem solving is an indicator of future potential. Instead in DA an individual's future is best determined by what he/she can accomplish with peer assistance. This is based on the idea of the zone of proximal development, where instruction helps to expand emerging skills and leads to overall cognitive development.

- Internalization: The process by which higher mental functions are created. Vygotsky himself defined internalization as the “internal reconstruction of an external operation” (1978, p.57).
- Mediation: Lantolf and Thorne (2006 p. 19) define mediation as “the observation that human beings do not act directly on the world-rather their activities are mediated by symbolic artifacts.” Mediation is the process by which activities that occur in the social milieu are appropriated into the intrapsychological plane of an individual. It is mediation that causes cognitive development.
- Mediational Tools: According to Vygotsky (1986) there are two types of tools; physical (a pencil) and psychological (mathematics). Tools mediate human interaction with the world. Their use is the means by which humans develop higher order thinking skills. Tools are used to solve problems and through their use both the tool and the person using it are transformed. Language is the most transformational tool that humans use.
- Regulation: This concept refers to the manner in which a person engaged in a task conceptualizes the task as well as their ability to successfully complete the task. Vygotsky (1986) establish 3 different levels of regulation: object, other and self. When someone is object regulated by a task. Other regulated refers to the fact that in order to complete a task, assistance from someone or something is sought or needed. When someone is self-regulated they can complete a task on

their own. However, regulation is not a unidirectional process. It is fluid. See continuous access.

- Strategic behavior: a term used in this study to describe the specific actions that mediators and students complete with working in dialogic union. It is important to note that the use of the term strategic should not be confused with the definition of strategies offered by Oxford (1990). Instead Donato & McCormick (1994) label strategies as the “by-product of goal-directed situated activity in which mediation...plays a central role.” (p. 457).
- Zone of Proximal Development: Vygotsky (1978, p. 86) defined 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.” It is essentially a way to show the relationship between learning and development. It is not something that can be measured, but rather a descriptor of the processes that take place during collaboration.

Delimitations and Limitations

This proposed study is situated within the SCT paradigm. In this vein of research all human activity is conceptualized as social in nature.

Therefore, the influence of the researcher, the participants and the tools that mediate their behavior cannot be removed, but instead are viewed as integral elements of the research setting.

Thirteen students and four mediators from a large southeastern university taking French as a foreign language were asked to participate in this research. Instances of dialogic engagement during DA training sessions as well as during DA mediation sessions were the unit of analysis. The goal of this study is not to generalize to a larger population, but instead to provide an emic perspective and an in-depth analysis of DA training and mediational behavior.

The conceptualization of cognitive development that I have chosen for this study speaks to me as a researcher. Of course, there are diverse ways in which to view the world. Therefore, if one were to choose a different epistemological stance on cognition, a different set of research results would be uncovered. I have chosen only one way to look at interaction with a peer during assessment.

Following the ideas of Smagorinsky (1995), case study methodology has been adopted to investigate the implications of DA training and the strategic behaviors of students and mediators engaged in DA. That is, what a quantitative framework of study that some may consider as weakness, are seen as strengths from a SCT framework. So, it is within a SCT framework that I list this study's limitations.

Activities in social situations are highly individualized and rarely are any two mediational situations the same. Therefore, one might criticize the creation of a taxonomy of learner and mediator behaviors as a generalization. This taxonomy could be seen as the use of the ZPD as a heuristic to measure

mediational or learning efficiency. However, the goal of this study is not to produce a ranking of behaviors to measure mediator or learner efficiency, but rather to describe what happens during DA training and in student/mediator interaction.

Conclusion

The previous sections have provided background from which to understand the proposed study, as well as a justification for it. The problems addressed by this study was stated and the study itself described. Next the research questions that guide the study were detailed along with a section that defines various terms that are integral for understanding the research. The upcoming chapter will outline the research with which one should be one should be familiar to complete the study.

Chapter 2

The goal of this chapter is to provide a review of the literature concerning the core concepts that are necessary for an understanding of the study. The chapter begins with a discussion of contemporary teaching methodologies and their influence on testing in the foreign language curriculum. In addition, socio-cultural theory (SCT) and the ideas that are essential for its understanding are discussed. This is important because SCT forms the theoretical underpinnings of DA. Also of particular importance is the section on the zone of proximal development (ZPD) and the dissonance surrounding its various interpretations. It is these different conceptualizations of the ZPD that forms the basis for the way in which DA is administered. For instance, proponents of a psychometric view of DA argue that the ZPD is a heuristic, while those who prefer a clinical view of DA feel that the ZPD is a theoretical construct that provides practitioners with a complete picture of an individual's development. The origins of DA are outlined, as is the resulting theoretical bifurcation. After having explored the differing models of DA, the way in which mediation is structured within these approaches is outlined. It should be noted that DA finds its roots in special education and therefore the research presented is situated within a special education context. Specific attention is placed on the ideas of Reuven Feuerstein, as well as his ideas concerning the way in which mediation within DA should be structured.

Subsequently, the scant research on DA in an SLA context is discussed. The chapter concludes with a discussion of gestures and their affect on mediation and the creation of the ZPD, as well as an overview of the studies that have explored the way in which gestures and strategic behaviors have been studied in SLA settings.

Both the behaviorists and innatists have had profound effects on the way in which language testing is carried out in foreign language classrooms. Behaviorist influence is exemplified by the Audiolingual method, where students are expected to form language habits that allow for future language use. Many language courses taught in universities around the country employ audiolingual pronunciation drills, based on behaviorist principles, in order to create the habit of native-like speech (Brown, 1994). These drills are carried through to assessment procedures, in that students are penalized for poor or sloppy speech. Also the Total Physical Response (TPR) method asks teachers to introduce language to students as if they were infants, learning their first language. TPR assumes that there is innate language ability in all humans.

Generally, in all different language-teaching methods, students are not presented with material until it is deemed that they are developmentally ready, both in terms of age and progress through the course. Despite the methods previously mentioned, the most pervasive approach to contemporary foreign language pedagogy is Communicative Language Teaching (CLT). It is important to note the difference between a language teaching approach

and a method. Language approaches share a common set of core beliefs that shape the way in which language instruction occurs. On the other hand a method, while it may be based on an approach, offers teachers with a detailed account of student and teacher roles, predetermined instructional design and goals and prescribed methods of assessment (Richards & Rogers, 1986).

In the following section, CLT (a language teaching approach), and its effect on testing will be investigated. This is because the idea of communicative competence forms the basis of most modern language curricula and the manner in which students are assessed. In fact, CLT's importance has been embedded in and reinforced by state and national foreign language standards, such as the Sunshine State Foreign Language Standards, and the American Council on the Teaching of Foreign Languages (ACTFL) standards. Both of these sets of standards stress the importance of language use in meaningful and authentic contexts, the cornerstone of communicative language competence, the theory that underlies CLT.

Communicative Language Competence

Chomsky (1965) made a distinction between a learner's understanding of rules that make up the grammar of language (competence) and the learner's ability to use rules in their production and comprehension of the language (performance). In 1971 Hymes introduced the idea of communicative competence and since then various models have refined it. Most of these models (Allen & Brown, 1976; Wienmann, 1977; Widdowson,

1978; Canale & Swain 1980; Canale 1983; Bachman 1990) offer two important aspects of competence; on the one hand is linguistic competence and on the other hand is pragmatic competence. For instance, Widdowson (1978) distinguished between language use and usage. The former is a learner's ability to demonstrate their language capability for communication. While the latter is the way in which a learner demonstrates their knowledge of the linguistic rules governing speech and writing. Production is thus the application of communicative competence.

Communicative language ability, as proposed by Canale & Swaine (1980), and Canale (1983) is made of four different areas of competence: grammatical, sociolinguistic, discourse and strategic. Someone that possess grammatical competence can be said to be proficient using the rules governing language. Sociolinguistic competence is being able to use language in a way that is appropriate to a particular social situation. Discourse competence is the ability to communicate effectively in both textual and conversational environments. Last, strategic competence is a speaker's ability to use communicative strategies in order to avoid communication breakdown.

The ideas of Canale and Swain were expanded on, and refined by, the Development of Bilingual Proficiency (DBP) project at the Ontario Institute for Studies in Education (Harley, Allen, Cummings & Swain, 1990), as well as the work of Bachman (1990) and Bachman and Palmer (1996). Communicative competence was reclassified as areas of language ability. These areas were

then divided into two broad categories: organizational and pragmatic. The area of organization competence includes both grammatical and textual knowledge. While the area of pragmatic competence contains functional and sociolinguistic knowledge. Grammatical knowledge, located in the organizational category, is an individual's understanding of the rules that govern the organization of utterances or sentences. Textual knowledge, also included in organizational knowledge, is illustrated by a speaker combining sentences in order to form larger and more organized texts. Within the broader category of pragmatic knowledge one finds functional knowledge or the ability of language users to create sentences and texts that are related to their communicative goals. Lastly, again found in pragmatic knowledge, is sociolinguistic knowledge, or the ability to use language features in their appropriate social setting. For clarity, these areas of language knowledge as proposed by Bachman (1990) and Bachman and Palmer (1996) are illustrated in figure 1.

Figure 1. Areas of language knowledge

(Bachman, 1990) and (Bachman & Palmer, 1996)

<i>Organizational Knowledge</i>	
<i>Grammatical Knowledge</i>	rules govern the organization of utterances or sentences
<i>Textual Knowledge</i>	combining sentences in order to form larger and more organized texts
<i>Pragmatic Knowledge</i>	
<i>Functional Knowledge</i>	create sentences and texts that are related to their communicative goals
<i>Sociolinguistic Knowledge</i>	use language features in their appropriate social setting

The idea of communicative competence has profoundly affected the way in which language students are taught and tested. The impact of communicative competence on teaching is discussed in the following section.

Communicative Language Teaching

Arguably, the most prevalent teaching approach in contemporary language pedagogy is communicative language teaching (CLT). Krashen (1982) and Swain (1985) both argue that the most successful way to teach languages is to provide students ample opportunities to use the language in a meaningful manner. That is, students should be provided with language that is appropriate to their level and given the opportunity to engage in linguistic exchange with others. The language that the students hear, which should be

slightly above their level of comprehension, is called comprehensible input (Krashen, 1982), and the language that they produce is output (Swain, 1985).

In CLT, learning a foreign language is being able to communicate using both grammatically correct and sociolinguistic appropriate speech. Nunan (1991) outlines five components of CLT. First, there should be an emphasis on learning to communicate by using the language being studied. Second, authentic language materials such as menus, newspaper and maps should be utilized in classrooms. Third, students should be given the opportunity to focus on their learning process. Fourth, the personal experiences of students should be used in order to personalize the language learning experience. Finally, the communicative classroom should be linked with the outside world. An overview of these aspects of communicative language teaching is shown in figure 2.

Figure 2. Five components of communicative language teaching (Nunan, 1991)

Five components of communicative language teaching	
1. <i>Language use</i>	Students should use the target language in the classroom
2. <i>Authentic language materials</i>	Materials from the target culture should be used to facilitate language learning
3. <i>Focus on learning process</i>	Students should be able to identify how they learn best and use language learning strategies to their own advantage
4. <i>Personalized learning experience</i>	Learning a language should become personalized
5. <i>Link classroom with outside world</i>	Students should realize how the language is used outside the classroom

Overall, any activity that aids in students' development of communicative competence in an authentic context is considered to be CLT (Lightbown & Spada 1993). Generally, these activities take the form of role-plays, information gap activities, or any other type of exercise that stress the purposeful use of language in authentic situations. In terms of assessment this means that the focus is on the learner. Instead of the investigation of isolated linguistic features, such as verb conjugations, the learner's ability to use the language is globally accessed using such methods as in class presentations, and portfolios (Nunan, 1989). The way in which teaching occurs defines the way in which testing occurs. Given the fact that pedagogy affects and guides the construction of assessment, the next section explores the concepts, purpose and types of language testing used in foreign language classrooms.

Importance of Training

In order for teachers to successfully navigate any classroom, whether it is communicative, behaviorist or socio-cultural, they must be properly trained. To that end, this section discusses the importance of training that addresses lesson planning, contains field experiences, stresses the importance of reflective practice and modeling of student behaviors.

In the field of second language teaching Richards (1998) underscores the importance of lesson planning. He states, "the success with which a teacher conducts a lesson is often thought to depend on the effectiveness with which the lesson was planned" (p. 103). McCutcheon (1980) expands

on these ideas when he asserts that lesson planning makes the teacher feel more confident, have greater mastery of the subject matter and give them the ability to anticipate problems. Finally, Farrell (2002) states, “lesson planning is especially important for pre-service teachers because they may need to feel more of a need to be in control before a lesson begins” (p. 31).

Dewey’s (1998) seminal work stresses the importance of first hand experience for novice teachers. Conant (1963) believes that field experiences are one of the most important parts of pre-service teacher education programs. In fact, he asserts that field experiences are “the one indisputably essential element in professional education” (p.142). Moreover, the focus of such field experiences is often on the procedure of running a classroom and the completion of routine tasks (McBee, 1998).

The importance of reflection in the amelioration of teaching is well documented (Bartlett 1990; Pennington 1995; Nunan and Lamb 1996; Bailey 2006). This is because it promotes a teacher’s examination of their practice and provides them with an opportunity to make decisions based on grounded observation.

Grossman and Williston (2003) stress the importance of modeling example student behaviors in the course of a teacher preparation program. They state “educators need to model the qualities that make their practice effective” (p. 103). Additionally, Gallego (2001) asserts that teacher education programs should better prepare novice teachers by providing “more

personal/professional experience opportunities in the classroom setting” (p. 313).

This section has outlined the importance of training for pre-service and in-service teachers. The following section addresses the definition and purpose of testing.

Definition and Purpose of Testing

There are various types of language tests that are used in contemporary foreign language classrooms. For instance, diagnostic tests are designed to identify gaps in students’ knowledge that warrant remediation (Henning, 1987). Moreover in discreet point testing measures language knowledge through the use of decontextualized fragments of speech or text (Davies, 1990). The previous two example are rather specific, however when examined broadly, it can be said that there are three major types of language tests; grammar, proficiency and performance (Henning, 1987). In grammar based testing specific grammar points are examined, oftentimes devoid of cultural context. Proficiency tests are designed to provide students with the opportunity to use language in a meaningful situation. Finally, performance based tests stress the creation of a product that showcases the learner’s language ability.

Keeping in mind that the goal of CLT is the creation of meaningful and purposeful communication, Bachman (1990) defines a language test as the “means for controlling the context in which language performance takes place” (p. 111). McNarama (2000) defines a proficiency test as an

assessment that “look(s) forward to the future situation of language use” (p. 7). In both of these definitions the idea of communicative competence plays a central role in stressing language use and not simply rote memorization of verb forms and isolated vocabulary terms. For example, the tests that accompany most foreign language texts are communicative. That is, they offer students the occasion to listen, parse, analyze and create language in semi-naturalistic settings.

In SLA there are different goals driving language testing. According to Cohen (1994) there are three purposes of assessment; administrative, instructional and research. Within the administrative realm, assessment may serve to place students in appropriate class levels, provide an exemption for completing a certain task or hasten a promotion. An example of an assessment for administrative purposes would be an exam given to ensure that a student has a certain level of content knowledge before leaving a program of study, such as the M.A.T. subject area exam that students in Florida must take before they can be awarded certification. An assessment that has an instructional purpose is one that shows evidence of student progress and gives feedback to the test-taker. Formative and summative assessments in the form of quizzes or *minute papers* (Angelo & Cross, 1993) are examples of assessments that serve an instructional purpose. Tests that drive research are centered on such issues as the investigation of student learning. They generally have the aim of uncovering the underlying processes in language acquisition. An example of a research-based

assessment would be the *Felder-Soloman Index of Learning Styles* (Felder & Soloman, 2003). This concludes the section on the definition and purpose of testing in foreign language classrooms. The next section examines the notion of testing and its effect on educational systems.

Testing Backwash

*Backwash*¹ is defined as the influence that testing has over an educational situation. More specifically, backwash consists of the behavioral changes carried out by both instructors and students because of a test's impact (Alderson & Wall, 1993). Bachman and Palmer (1996) discuss a similar idea, but label it *test impact*. Regardless of its title, the notion of backwash is centered around the belief that testing and teaching are inexorably linked. No matter the quality of assessment, whenever students' futures and results on exams are linked, backwash occurs (Eckstein & Noah, 1993). Underpinning the idea of backwash is a concept known as measurement-driven instruction (Popham, 1987). In measurement driven instruction an instructor structures his/her lessons so that they coincide with the content and format of an exam. The result of this type of high stake testing is that instructors teach to the test.

Despite the prevalence of accountability measures in education such as Florida's Comprehensive Assessment Test (FCAT), some teaching

¹ Throughout the assessment literature the terms *backwash* and *washback* are used interchangeably. From a review of literature, no discernable difference between the two terms can be found. In this paper the term *backwash* will be employed to mean the affect that assessments have on educational systems.

professionals see the realignment of curriculum to the areas addressed in an exam as unscrupulous (Haladyna, Nolen & Haas, 1991). It should be noted that not all researchers feel that backwash affect should be minimized. In fact, Alderson (1986) argues that through backwash, developers of tests have the ability to influence innovations in education. This belief is echoed by Davies (1985) where he argues that assessments should not only influence but also lead curriculum development. One researcher has even gone so far as to say that testing has “become the engine for implementing educational policy” (Petric, 1987, p. 175). In this case the impetus for hastening educational change is assessment.

Backwash in contemporary foreign language education is illustrated by the influence that the ideas of communicative competence has had on assessment. Take for example the way in which foreign language assessments are constructed. Students are no longer tested on their ability to create grammatically formed sentences, but rather their ability to use the language in meaningful contexts (Savignon, 1997). Anecdotal evidence from the university in which this study is situated illustrates the importance placed on communicative competence assessment. In the beginning and intermediate French classes, students are expected to participate in two oral interviews per semester. This is an attempt to engage students in the meaningful use of language in a somewhat authentic situation.

In addition, the communicative assessments that are given to students, shape the way in which the curriculum is structured. There are some aspects

of communicative competence that can be measured using traditional testing, such as knowledge of grammatical structures and reading comprehension. However, items such as strategic competence must be examined in real world contexts (McNamara, 2000). The Oral Proficiency Interview (OPI) created by the American Council on the Teaching of Foreign Languages (ACTFL) illustrates this. The OPI is constructed to establish an individual's level of speaking proficiency by determining his or her ability to handle the communication tasks specified for each level of proficiency (ACTFL, 2005). The OPI has had positive backwash in that it has influenced instructors to place greater emphasis on speaking in classrooms.

Assessing a student's ability to use language in authentic settings is paramount to the validity and reliability of communicative exams. In fact, alternative assessments that do not require the meaningful use of language in a quasi-real world context would be considered neither valid nor reliable (McNamara 1996). Testing that is underpinned by the idea of communicative competence measures how test-takers are able to use language in real life or authentic situations. When testing reading or listening, emphasis is not placed on the recall of specific facts, but rather on understanding the illocutionary force of the text or speaker. These authentic or integrative assessments were first called for by Carroll (1961) whose ideas have been cited as the basis of testing within contemporary communicative competence approaches in foreign language classrooms (Spolsky, 1996).

However, not everyone agrees that the ACTFL OPI examines all of the concepts that make up the idea of communicative competence (Lantolf & Frawley 1988, Raffaldini 1988, van Lier 1989). For example, Raffaldini (1988) argues that while grammatical competence is examined, little attention is paid to sociolinguistic competence. The test taker only interacts with the OPI administrator and is not given any opportunity to pose questions or to elaborate on their answers. In this way the OPI is artificial and conversations that occur during these interviews lack purpose and are inauthentic (Bachman, 1988). This illustrates the limitations of even widely accepted assessments that have been statistically proven to be both reliable and valid.

Psychometric Considerations of Traditional Testing

In the following section the two primary concerns of traditional testing will be examined; that of validity and reliability. Definitions of the terms as well as sub-divisions of the concepts will be explored. This section concludes with a discussion of the influence of psychometric considerations in the field of second language testing.

Traditionally, psychometricians have been concerned with preserving the accuracy of their assessments by reducing threats to both validity and reliability. Students who are not working independently during an assessment threaten its reliability. Similarly, a test that is constructed based on a set of skills other than the ones being assessed is not valid. That is, it does not measure what it should measure (Hughes, 2003).

Validity is the measure that describes the degree to which an assessment measures what it is intended to measure (Hughes, 2003). A test that has content validity measures a representative set of skills for a particular domain. Recall that communicative competence in a language consists of four abilities; linguistic, sociolinguistic, discourse and strategic (Hymes, 1971). A language test with the aim of determining whether or not a learner possesses communicative competence would need to examine all of the sub areas that make up the concept in order to have content validity. Concurrent validity measures the relationship between an assessment and some other, previously established and accepted measure of performance (Hughes, 2003). For instance to determine the concurrent validity of a new college entrance exam, this exam might be compared to the SAT, an assessment whose validity is thoroughly documented.

Great effort is placed in the establishment of test validity. Assessments are trialed to various student populations and standardized assessments are inflexible in the way that they follow state or national curricula. Therefore if a curriculum contends that language learning should be based on the acquisition of rules and isolated vocabulary then tests that are considered valid within this paradigm must exam the learners' knowledge of such rules and vocabulary. The complex relationship between cognitive growth, testing and curriculum is explored in depth in the later sections on socio-cultural theory (SCT) and the zone of proximal development (ZPD).

When an assessment consistently measures what it was designed to measure it is said to be reliable. For the psychometrician to trust the outcomes of an assessment, scores must be shown to be reliable. For a test to be reliable it must be valid over a period of time. It must also be shown to be a valid for a representative population. That is, the scores obtained by test-takers should be similar, within a reasonable degree, over different test administration sessions (Hughes, 2003). In order to determine the reliability of a test, a reliability coefficient is calculated via statistical means.

Few would argue that some testing administrators seem almost obsessed with the preservation of test reliability. Take for instance the fact that students are scanned by cellular telephone detection devices in some large testing centers. Even in classrooms, teachers ask students to sit apart from one another during testing in an attempt to ensure that the assessment examines the knowledge of a specific student. Many consider cheating or as some might call it collaboration, the primary way in which reliability is threatened.

The previous section focuses on communicative language competence and teaching; the definition and purpose of testing; backwash as well as the psychometric concerns of testing; namely that of the establishment of validity and reliability of testing instruments. The discussion now turns to SCT considerations of testing.

SCT considerations of testing

Given that the primary concerns of psychometricians relating to assessment are the establishment of measures of validity and reliability, it is these two issues on which the following discussion focuses. For an assessment to be valid in an SCT framework, it must produce cognitive development in learners. Regardless of the content of an exam, if development is not both the product and goal of assessments, it is not valid when examined through an SCT lens.

According to Feuerstein (1997) interaction that occurs within the MLE is highly individualized and is difficult to script. Therefore the notion of reliability, where testing situations should be strictly controlled in order to reduce environment effects on testing, is unattainable. In fact, it is the dynamism that occurs in the MLE (or the ZPD) that contributes to development.

Unsanctioned collaboration in traditional testing situations is seen as cheating and often carries with it strict penalties. However, with an SCT environment it is actually working together with a peer or expert mediator causes cognitive development. Dialogic engagement is the primary means by which development is created (Vygotsky, 1987). This stands in sharp contrast to the psychometric view of collaboration in assessment situations. Moreover, cognitive growth, in terms of language learning, is seen as the acquisition of rules and the acquisition of communicative competence. Scant

attention is paid to the role that the dialogic engagement plays in the language development in traditional testing.

The entire discussion of norm referencing is moot when one adopts a SCT approach to testing. While traditional Western statistical measurement is based on the interpretation of the mean, SCT rejects this stance and instead embraces the experience of the individual (Frawley & Lantolf, 1985). Therefore SCT is incommensurate with the notion of normative groups, standard error of measurement (which will be discussed later) and item analysis. Yet an understanding of such concepts is vital if one wishes to operate within a system that has so embraced the ability to compare individuals as an indicator of their intelligence or developmental level.

Habermas' ideas concerning communicative rationality (1984) provide a manner in which to approach the apparent dichotomy between psychometricians and socio-cultural theorists. He argues that instead of staunchly refusing to acknowledge a different paradigm, one should begin a dialogue in order to gain a deeper understanding of one's personal epistemology. This in turn promotes reflection and refinement of the constructs in question. The impact of this notion on this study is two fold. Firstly, if the educational community is going to embrace the DA, then change must occur. Following van Schoor (2003) restructuring of a construct involves loss and reactions to change mirror those of grief. The combination of statistical measure and socio-cultural theory, while at first glimpse might seem unsettling, could hasten DA's acceptance. Secondly, based on the constructs

of grounded theory, a hypothesis is always in being modified. Perhaps the inclusion of normative comparisons could strengthen DA.

The next section discusses socio-cultural theory (SCT) and the related concepts that are essential for its understanding. This section is included in this review of literature because SCT is the conceptual basis through which dynamic assessment (DA) is constructed.

Socio-Cultural Theory

SCT is the theoretical framework that supports DA. Within the following discussion on SCT, constructs such as mediation and tool use, private speech, inner speech, regulation, internalization and the zone of proximal development (ZPD) and their role in shaping cognitive development will be explicated. Moreover, differing interpretations of Vygotsky's work are detailed as well as the resulting dissonance that encompasses the concept of the ZPD. Special attention is paid to the ideas of Werstch and the way in which he offers a more concrete definition of the ZPD.

In order to study and understand the process of the cultural transmission of artifacts and the mental activity associated with their use, Vygotsky proposed four domains. These domains include: phylogenetic, socio-cultural, ontogenetic, and microgenetic (Werstch, 1985), all of which examine human development from a socio-historical perspective. The phylogenetic domain describes the evolutionary development of mediation by humans and the means by which mediation became distinguished from other mental processes. The socio-cultural domain focuses on the historical

development of symbolic tools and their impact on thinking. The way in which children appropriate language and are mediated by it, is located in the ontogenetic domain. In the microgenetic domain short-term development of mediation is examined along with its affect on learning. To date the majority of SCT research on language learning has been conducted in the ontogenetic domain focusing on the development of mediational means in children (Lantolf, 2000).

Mediation & Tool Use

The view that the human mind is mediated is the underlying premise of socio-cultural theory (SCT). This means that humans do not act directly on the world, but instead use symbolic or psychological and physical tools to interact with it. Physical tools are those items by which we change the physical properties of objects (Vygotsky, 1981.) Symbolic tools are items that humans use to psychologically change their environment. Examples would be music, art and language (Lantolf, 2000). The most important of these symbolic tools is language. This is because language is the primary source by which we create, establish and maintain, or mediate, our relationships with the world.

Artifacts that are culturally constructed, such as language, are in a constant state of change. That is to say they are revised and reshaped by the people that work with them. These changes are often then inherited by the following generations who in turn continue to modify and refine these tools. One should note that the inheritance of such tools is not genetic but rather

cultural. A discussion of art would nicely illustrate this concept. Consider the cave paintings that were discovered at Lascaux. The art of today has most definitely evolved from this early example. The differences between the two are obvious. One can clearly see how painting as art has been refined by subsequent generations. A comparison of the cave paintings to the work of an artist such as Da Vinci clearly shows the modification of a culturally constructed tool through generations. Language use throughout the centuries has been modified in much the same manner.

Central to Vygotsky's position on the social nature of learning is the belief that the study of language and thought cannot be separated. This is because, it is through internalized tool use, that higher order thinking skills are developed. While language and thought are separate processes, they are interdependent and their individual study would be fruitless (Bakhurst, 1991). This stands in contrast to the innatist view where verbal behavior is seen as the manifestation of thought (Chomsky, 1964).

Regulation

When humans begin learning about a new idea their thoughts and mental processes are organized and defined by another individual.

Regulation is the manner in which an individual sees a task as well as their ability to successfully complete it (Frawley & Lantolf, 1985). The organization of mental processes by another individual, gradually shifts from being totally dependant on the other individual to being self-mitigated, or self regulated. Generally, self-regulation is characterized by a moment of epiphany when the

participant suddenly understands what is needed to successfully complete a task. However in particularly arduous circumstances individuals working within the ZPD may revert to early forms of regulation. This is called *continuous access* (Frawley & Lantolf 1985). A self-regulated individual is no longer in need of an expert to mediate their mental activity. That is not to say there is no biological basis to the reorganization of mental process by other regulation. The socio-cultural theorist believes that there are genetic differences in the individual mental abilities of people. However, these biological factors are mediated by the cultural and social context in which they are found. They are not the major force behind the development of cognitive abilities. Instead the genetic differences in individuals are understood through the use of the cultural system and tools within that system.

As learners go from object to self-regulated they go from using speech to mediate their learning with another person, to using speech to regulate their learning with themselves. For instance, when an individual approaches a task for the first time they must heavily rely on the assistance of an expert in order to successfully complete the activity. However as the expert's assistance becomes less and less needed the dialogic activity diminishes. Eventually when mediation is no longer required to complete a task the person can still mediate their own learning through the use of private speech. Private speech can be defined as "speech that has social origins in the speech of others but that takes on a private or cognitive function"(Lantolf 2000, p. 15). Private speech eventually becomes inner speech or

communication in the form of pure thought, as cognitive development evolves. The privatization of speech and its transformation into inner speech (leading to self-regulation) is the manner in which more sophisticated forms of cognition are created in the mind.

The fact that a cognitive function becomes internalized does not mean that it exists only on the intrapsychological plane. In fact when someone is confronted with a task, that is particularly difficult, mediation can begin to occur outside the individual again. Take, for instance, a learner that has mastered the appropriate manner in which to write a descriptive essay. They no longer require the assistance of a teacher to guide the task or a proofreader to correct mistakes. However, when they are confronted with the task of writing a similar essay, but in a different genre, they may ask for assistance. The assistance may come in the form of cultural artifacts such as books or a computer, or directly from an expert in the task. The mediation reverts from within the individual manifested as inner speech, located on the intrapsychological plane to the interpsychological plane in the form of expert/novice mediation. Again, this process is called continuous access (Frawley & Lantolf, 1985).

Internalization

The process of participating in mediation with another person can bring about internalization. Lantolf (2000) defines internalization as the process of “reconstruction on the inner, psychological plane, of socially mediated forms of goal-directed activity.” Internalization is in essence “the process through

which higher forms of mentation come to be." (p. 13). This means that the development of higher order thinking skills is caused by the appropriation of tools. That is, when an individual no longer needs the assistance of another individual to complete a task, they have appropriated the use of a tool (language, art, a hammer) and therefore increased their ability to think in an advanced manner.

Care should be given to not compare the idea of internalization to the concept of input as outlined by Krashen. Internalization is not the process of reorganizing external stimuli and its incorporation into the pre-existing intrapsychological plane of a person. In socio-cultural theory mental processes do not already exist within a person, waiting to emerge at the appropriate developmental stage (Lantolf, 2000). Instead they are created in the social milieu and through the process of internalization are incorporated in the mental repertoire of a learner. It should be noted that the mental abilities of individuals to appropriately use tools and symbols varies according to the cultural schema in which it was created.

Private Speech

Private speech is language that is directed at oneself. It is the spoken manifestation of inner speech (Flavell, 1966). Its study is particularly important in cognitive development because Vygotsky considered it to be the only manifestation of pure thought that can be observed (1986). Young children routinely use private speech to mediate their problem solving activities. This speech is directed at no one, yet is very similar to the type of

speech that would be used with another child or adult. It is in essence the child reasoning out a task and attempting to gain control of it. As a child ontogenetically develops, private speech is relied on less and less. When private speech disappears it is replaced by inner speech. In turn, inner speech is used to mediate problem solving. Despite its name, inner speech is not spoken, and makes up that which SCT theorists consider to be thought.

In younger children private speech is omnipresent. It emerges around the age of three and then again disappears around the age of seven (Vygotsky, 1986). That is not to say that private speech no longer exists within the child. It can be said that individuals have *continuous access* to private speech (Frawley & Lantolf, 1985), or it only emerges when individuals are faced with a particularly difficult task. This stands in sharp contrast to the belief that once adulthood is reached cognitive development is complete, as explicated in Piaget's stage theory (1929).

Inner Speech

Inner speech is the means by which humans “gain voluntary control over our elementary biologically endowed brain processes” (Lantolf and Thorne 2006, p. 72). It is essentially the thought that humans use in order to mediate their mind. It is the final phase of the development of higher order thinking skills (Vygotsky, 1986). Despite inner speech's psychological function, it is social in nature. That is, the inner speech that we use to mediate our mental functions stems from language that was first learned in the interpsychological situations. Inner speech is, at the same time our own

voice and the voice of others. This is because a child is born into an already socially and culturally established society. As Frawley (1997) puts it, “society proceeds the individual and provides the conditions that allow individual thinking to occur” (p. 89).

In his discussion of inner speech Vygotsky outlined its four features; psychological predicate, sense, merging of meaning and its transformation into private speech during challenging situations (Vygotsky, 1986).

Psychological predicate is when an utterance is reduced down to its essential meaning. It is often ungrammatical but continues to represent a complete idea. Vygotsky himself gives an example of this phenomena by illustrating that while several people are waiting for a bus one might utter the word "coming" while the greater meaning of the utterance is "the bus for which we are waiting is coming" (1986, p 236). The entire sentence is unnecessary because the meaning of the single word is obvious from the situation.

Moreover, concerning the sense of inner speech, the impressions that one gets from the utterance is more or less the most accepted meaning of the predicate. Inner speech can also represent combined meanings. That is, the meanings of two concepts merge in one psychological predicate. For instance, in the previous example, the private speech phrase “coming” could refer to the bus and at the same time refer to a fellow passenger who is coming to the bus stop. Here the phrase “coming” takes on a dualistic meaning. Lastly, as previously described in the section on continuous

access, inner speech can be manifested as private speech in arduous situations.

The Zone of Proximal Development

To illustrate the ZPD and its role in assessment consider the example that Vygotsky (1978) himself gave. Two children, who are both twelve years of age, are each shown to be operating on an eight-year old's expected level as measured by some sort of standardized assessment. However, when these same children are examined in a dynamic fashion, that is a method that engages the child through meaningful interaction with a teacher or peer, one child's ability to complete tasks is significantly increased while the other child does not benefit from this assistance. When examining the children within their ZPD it is clear that they do not have the same potential to learn.

Vygotsky (1978, p. 86) defined 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." While there is a general discussion of the ZPD in Vygotsky's writings (1978, 1981, 1986), no specific description of the processes that are contained within it (Wertsch, 1984). This is from where the differing viewpoints on the ZPD originate. While the concept on which DA is based is mentioned in Vygotsky's writings, DA is never explicitly referenced.

Refining the Notion of the ZPD

Wertsch (1984) expands the notion of the ZPD. He posits that the ZPD contains three components; situational definition, intersubjectivity and semiotic mediation. The consideration of all these items allows us to define the ZPD in a more concrete manner.

Situational definition is the way in which an individual actively creates their understanding of a condition, including the context in which it occurs. For those working within the ZPD this means that two individuals, engaged in problem solving, come to the activity with differing representations of the objects and events. In other words, they have differing conceptualizations of the shared situation. In fact, Wertsch (1984) believes a defining property of the ZPD is two individuals, jointly working, who possess differing situational definitions. In order to further explicate situational definition Wertsch (1984) divided it into two parts; object representation and task setting. It is important to note that the representation of the object and the context of the task cannot be separated; both are needed in order to fully define a situation.

The way that two individuals represent an object is different. For instance, consider a parent and a child working together to wash a car. The parent sees the car as a method of transportation that needs to be serviced in order to keep it in optimal condition, thus providing reliable transportation to the family. However, the child might view the car as an object that allows them to visit their grandparents' home with no thought as to its mechanical properties. Or conversely, the parent might be washing the car in order to

ensure a higher price when selling the vehicle. The child could be helping to wash the car because it will allow them to play with water and get wet on a hot day. The two will approach the situation in two different manners.

It is important to realize that the stages of the action pattern, or a detailed account of what is happening in a specific instance of social interaction, are not mutually dependent. That is, they exist independently and even though they may describe the same behavior (the parent and child washing the car). That is to say, the significance of the behavior may be dissimilar. Therefore to change an existing action pattern one cannot simply add steps. Instead a qualitative change must occur. The novice individual working within the ZPD must fundamentally modify their understanding of the activity. In order to change behavior in a defined situation, the entire situation must be redefined. This redefinition of a situation allows the participants in the task to reach intersubjectivity and “is characteristic of the major changes that a child undergoes in the zone of proximal development” (Wertsch 1984, p. 11).

Intersubjectivity

Intersubjectivity between two individuals working within the ZPD is reached when the participants share the same definition of a situation. However it is important to note that there are differing gradations of intersubjectivity. Take for example the previous discussion of the parent and the child working together to wash a car. In this case only minimal intersubjectivity may exist if the parent and child only agree on the fact that

that the car that is being washed is in the driveway. On the other hand almost complete intersubjectivity can exist when both the parent and child share near identical representations of the object (the car) and the task (washing the car). Intersubjectivity occurs when two individuals share a common understanding of a task and the way to go about completing it.

Negotiation of Intersubjectivity

The process of reaching a shared understanding of the objects and task in a setting has been called by Wertsch (1984) negotiation of intersubjectivity, and occurs in a social situation or in the intrapsychological plane. The creation of this knowledge first occurs outside the individual as they are being regulated by the more knowledgeable participant. It is important to note that if the expert does redefine their understanding of the situation it is only temporary, and reflects a willingness to help the novice successfully complete the task. In fact, Wertsch (1984) states "the only genuine, lasting situational redefinition that takes place occurs on the part of the child" (p. 13) or on the part of the novice participant.

As assistance is no longer required, or after near complete intersubjectivity has been reached; the mediation is no longer controlled by the expert. This is the first step in becoming self-regulated. However as Werscht (1984), Donato (1994) and Erben (2001) all describe, achieving intersubjectivity, as well as not achieving it, leads to internalization. Recall that the way in which higher order mental functions are developed is through the internalization of tool use. This is important because the development of

mental functions as well as their complete representation are at the crux of DA.

Historical Roots of the ZPD

According to van der Veer and Valsiner (1993), the concept of the ZPD, as proposed by Vygotsky, was initially introduced in the context of intelligence testing and later evolved into the broader field of cognitive development. This dualism, as well as the fact that Vygotsky left the concept relatively underdeveloped, has arguably led to the differing viewpoints on the ZPD construct. Moreover, Vygotsky's original discussion of the ZPD is somewhat scarce. In fact the ZPD was only mentioned in Vygotsky's writings on eight different occasions (Chaiklin, 2003). Some even believe that the proliferation of Vygotskian based concepts and more specifically the construct of the ZPD has led to confusion and misuse (Werstch 1985, Minick 1987, Chalikin 2003) In fact, Werstch (1984) argues that the concept of the ZPD, in contemporary educational research has become "so amorphous that it loses all explanatory power" (p. 7).

The most complete account of Vygotsky's understanding of the ZPD is detailed in a lecture given at Bubnov Pedagogical Institute in 1933 entitled "Dynamics of mental development of school children in connection with teaching." While this paper is written in Russian, an account of it is provided by van der Veer and Valsiner (1993, 336-341). Here Vygotsky discussed intelligence tests that Russian children took at the onset of elementary school. He observed that some children who initially scored low on IQ tests tended to

make gains throughout their schooling, while some higher scoring children tended to lose IQ points. In order to explain this phenomenon he developed the ZPD.

Vygotsky argued that traditional methods of determining a child's intelligence (e.g. IQ testing) are not representative of a child's ZPD. In order to determine the ZPD, he posited that assisted performance should be investigated. That is, children should be assessed while working together with peers, teachers or parents. In this paper, Vygotsky speaks of an empirical study designed to more closely examine the ZPD. He was puzzled by how some low scoring children improve, in terms of IQ score, and some high scoring children decrease, in terms of IQ score, after exposure to education. Children's ZPDs were determined by a comparison of their individual performance in completing a task and their assisted performance completing a similar task. The low and high scoring children were further divided into subgroups based on their ZPD. Therefore, four groups were established; high IQ and large ZPD, high IQ and small ZPD, low IQ and large ZPD and lastly low IQ and small ZPD. He claims to have found that children with either high or low IQ score, but large ZPDs perform in a similar manner as do those with either high or low IQ scores and small ZPDs. Thus, in explaining the reason that children at seemingly different levels as determined by IQ tests either benefited or not from schooling, Vygotsky established the fact that the ZPD is a better indicator of schooling success than IQ testing (van der Veer and Valsiner 1993). He states "the dynamics of the intellectual

development in school and for the progress of the child in the course of school instruction the determining factor is not so much the size of the IQ itself, that is, the level of development of the present day, as the relation of the level of preparation and development of the child to the level of the demands made by the school" (Vygotsky 1933, cited in van der Veer and Valsiner 1993, p. 339).

It is important to note that by establishing the fact that IQ scores are less precise indicators of a learner's success in school than the ZPD, Vygotsky did not call for the abandonment of traditional IQ testing methods. Instead, he urged the incorporation of the ZPD as an adjunct to IQ testing. The use of the ZPD allows the investigation of non-quantifiable differences of a child's ability that are only manifested when engaged in social problem solving.

The following section details the origins of the ZPD and its initial adoption into American psychological research. This part is included because it uncovers the dissonance between the way that Vygotsky envisioned the ZPD and the way in which it has been applied by those concerned with preserving the psychometric properties of examination and the quantification of intelligence.

The Origins of DA

In 1961, A.R. Luria addressed the American Orthopsychiatric Association and discussed many of the same issues that were first brought to light by Vygotsky and his discussion of the inadequacies of traditional IQ testing, particularly with disadvantaged or learning disabled populations.

Luria pointed to the fact that many children are often misclassified as learning disabled due to some other issues such as low motivation or physical impairment, and that classification based solely on IQ perpetuates these misclassifications. In fact, in his paper Luria states "we are not in favor of psychometric tests for these purposes (classification of children as learning disabled). I think that psychometric tests do not close the problem; they only open the problem" and he later urges educators to " pay more attention to the nature of the defect" of children instead of trying to quantify their abilities (1961, p. 5).

In order to distinguish between the actual deficiencies of children, Luria advises the construction of a non-traditional method of assessment. To respect the concept of the ZPD, the assessment he proposed consists of a child and a mediator working together in unscripted dialogic union with the aim of solving a problem. Luria coined the term "analysis of the Zone of Proximal Development" (p. 6) to describe this sort of assessment. He believed that it is only through collaboration that the ZPD of a person can truly be explored. Indeed, he states "what the child is able to do today with the teacher, he will be able to do by himself tomorrow" (Luria, 1961, p. 6). Moreover, he exhorted the transfer of strategies internalized by the test taker during the exam to novel situations as important to the process of analyzing of the ZPD.

Poehner (2005) argues that Luria wanted to replace the psychometric methods that were in use at the time with an objective examination of the

ZPD of learners. Furthermore, Poehner feels that this point seemed to be misunderstood by the American psychologists in Luria's audience and this misunderstanding was perpetuated by the subsequent work of psychometricians such as Budoff and Friedman (1964), and Campione, Brown, Ferrara, and Bryant (1984). However, upon a closer examination of Luria's discussion and a robust understanding of the theoretical underpinnings of Luria's assertions based on Vygotsky's understanding of development, learning, instruction and assessment, one can see that Luria's paper was misunderstood. Specifically, the idea of objectification was misinterpreted. Poehner (2005) believes that Luria's intention was to call for the use of objective assessments, instead of psychometric ones. Poehner goes on to assert, "Ironically, this point [the call for objective rather than psychometric assessments] was somehow lost on many in his audience" (2005 p. 44). Indeed, Vygotsky proposed the use of the ZPD as a method for describing the abilities of an individual, instead of quantifying them. He was sharply critical of testing that did not investigate the developmental process. Vygotsky's views and those of his student Luria are reflected in the following citation where traditional and alternative assessment of two children are described.

Having found that the mental age of two children was, let us say, eight, we gave each of them harder problems than he could manage on his own and provided some slight assistance; the first step in a solution, a leading question, or some other form of help. We discovered that one

child could, in cooperation, solve problems designed for twelve-year-olds, while the other could not go beyond problems intended for nine-year-olds. The discrepancy between a child's actual mental age and the level he reaches in solving problems with assistance indicates the zone of his proximal development. . . . Can we really say that their mental development is the same? Experience has shown that the child with the larger zone of proximal development will do much better in school. This measure gives a more helpful clue than mental age does to the dynamics of intellectual progress. (Vygotsky 1986, pg. 187).

Luria's paper is the earliest reference, in English, to a method of analyzing the ZPD, or a method of assessment that would subsequently be come to be known as DA. Actually, the earliest work that uses the term DA, in American psychology, is that of Budoff (see Budoff & Freidman 1964, Budoff 1968). In fact, Budoff & Freidman (1964) cite Luria's paper. It is here that the two conflicting viewpoints concerning the ZPD arise. Budoff and his colleagues interpreted the ZPD as a device with which to measure the intelligence of an individual. However, Poehner (2005) and Poehner and Lantolf (2005) disagree with this stance. They instead argue that Vygotsky and Luria did not call for the measurement of the ZPD, but rather for its use as a descriptor.

The dearth of Vygotsky's theoretical discussion surrounding the ZPD and the analysis of it, has become a contentious issue among DA scholars (Elliot 2003, Sternberg & Grigorenko 2002, Lidz & Elliot 2001, Lidz 1987).

This is perhaps due to the fact that Vygotsky's most complete account of the ZPD is given within the context of intelligence testing. However, one must be aware of the progression of the concept. While the ZPD was initially introduced in the context of intelligence testing, it evolved into a method to investigate and explain cognitive development. Given the initial empirical use of the ZPD, one can see the origins of the more lockstep approaches to DA, such as those proposed by Budoff and Brown (1964), Guthke (1982), Campione & Brown (1987), and Carlson and Wiedl (1980), and their respective colleagues.

This paper adopts the view that the ZPD was never meant to be used as a heuristic of intelligence. This idea is exemplified by the words of Valisner & van der Veer (1992) where they state that the development of the idea of the ZPD was "meant to communicate a major theoretical idea—child development is at any given time in the difficult-to-observe process of emergence, which is masked by (easily visible) intermediate outcomes" (p. 43).

The Role of Psychometrics in DA

The greatest debate among theoreticians and practitioners of DA alike is that of the role of psychometrics. For instance, Sternberg and Grigorenko (2002) argue that future research done in DA should concentrate on establishing the reliability and validity of DA instruments. Furthermore, Sternberg and Grigorenko (2002) criticize DA research that does not account for the standardization of mediation among different students and mediators,

as well as studies whose results cannot be reproduced. On the other hand, Valisner (1985) presents the ZPD as a theoretical construct that rejects use as a heuristic. In fact he states, "it is impossible to determine the empirical boundaries of the ZPD" and later contends "the basic nature of development renders the full extent of the ZPD in principle empirically unverifiable" (pg. 31). Feuerstein and Feuerstein (2001) echo the futility of the standardization of interaction that occurs between the learner and the mediator. They feel it actually strips DA of the individualized interaction that is at the crux of cognitive development. It is the dynamism in the assessment that makes DA a powerful indicator of a person's true ability. Feuerstein & Feuerstein (2001) also argue that by their nature, the results of their studies cannot be reproduced. This is because the interaction that occurs between the mediator and the test-taker is highly sensitive to both the needs of the learner and the skill being examined. Feuerstein & Feuerstein (2001) do not see the irreproducibility of their research as a weakness. Rather, it is the inevitable result of the vibrant and individualized interaction that should occur in DA.

In the previous sections the ZPD and its differing interpretations, the origins of DA and role of psychometrics in different DA approaches is discussed. It is important to understand the socio-historical background surrounding DA, in order to understand its proper usage. In the following sections DA and its gaining popularity, as well as the differing mediation approaches are explicated.

Dynamic Assessment

The American educational system is in the midst of a paradigm shift. This is particularly evident when one examines the way in which resources are allocated in educational settings. Take for instance, the No Child Left Behind Act of 2001 (NCLB). Since its adoption higher accountability standards are in place in order to ensure that schools make “adequate yearly progress” (No Child Left Behind Act of 2001, Public Law 107-110). Progress is determined by student performance on the standardized assessment that each state administers. With the advent of educational policies, such as NCLB, the resources given to schools are often based on that school’s performance in terms of test scores (Shohamy, 1998). Due to the bias that exists in many standardized tests this type of resource allocation and analysis of child performance comes into question. It is for this reason that DA is popular with both researchers and practitioners that work with under-served or disadvantaged populations (Lidz, 1987).

Those working within the field of assessment contrast the DA approach and the traditional approach to testing. This traditional approach is referred to as static assessment (SA). These terms, SA and DA, do not specifically refer to assessments themselves, but rather to the way in which an assessment is administered. Sternberg and Grigorenko (2002) define static assessment as an exam in which test items are presented to examinees either one at a time or all at once, and each examinee is asked to respond to these items successively, without feedback or

intervention of any kind. At some point in time after the administration of the test is over, each examinee typically receives the only feedback he or she will get: a report on a score or set of scores (p. vii).

However, Lantolf and Thorne (2006) contend that using the term SA to refer to testing that is not DA is misleading. This is due to the fact that “there are forms of assessment outside of DA that are not static, including portfolio assessment, performance assessment, etc” (p. 357). They therefore adopt a different term, non-dynamic assessment (NDA), to describe all assessment that is not DA. It is this term, NDA that this paper will employ.

Admittedly, Luria’s introduction of DA is somewhat vague, as is his subsequent discussion. It is for that reason that Sternberg and Grigorenko (2002, p. vii) offer a more concrete definition. They state that DA is a method of assessment that considers

the result of an intervention. In the intervention the examiner teaches the examinee how to perform better on individual items or on the test as a whole. The final score may be a learning score representing the difference between pretest and posttest scores, or it may be the score on the posttest considered alone.

However, according to Poehner and Lantolf (2005), Sternberg and Grigorenko’s definition of DA “fails to capture the full force of how Vygotsky

conceived of development in the ZPD” (p. 234). Instead they attest that Vygotsky’s view of development was not reflected by “a specific to a single task or test...rather it must take account of the individual’s ability to take what has been internalized through mediation beyond the immediate task to other tasks” (p. 234). Also, according to Lantolf and Thorne (2006) the goal of DA is to modify a student's performance through interaction with a teacher or peer. Interaction occurs either during the exam or between a pretest and posttest.

Following the ideas of Lantolf and Poehner (2004), Poehner and Lantolf (2005), and Lantolf and Thorne (2006) this paper eschews the definition of DA as offered by Sternberg and Grigorenko. It instead adopts a definition that provides a view of DA that is commensurate with the Vygotskian conceptualization of the ZPD. The following definition by Lidz and Gindis of DA captures the essence of Vygotsky’s ideas concerning assessment. Lidz and Gindis (2003) state, “DA is an approach to understanding individual differences and their implications for instruction that embeds intervention within the assessment procedure. The focus of most dynamic assessment procedures is on the process rather than on the product of learning” (p. 99). In other words, in DA the mediator seeks to improve learner performance through modification of student activity. This interaction focuses on learner behavior and learner receptivity to mediation (Lidz, 1991).

Approaches to DA

There are two general approaches to dynamic assessment: interventionist and interactionist (Lantolf & Poehner, 2004). The idea underpinning both approaches to DA is the social construction of knowledge. In each case a learner and a mediator work together in order to complete a task. The primary difference between the two approaches is the way in which the mediation is given to students. In interactionist DA mediation is contingent upon the learner and emerges from the interaction between the learner and the mediator. It offers a clinical approach to DA. In interventionist DA mediation is standardized. This is done with the goal of preserving the psychometric properties of an assessment. There are two different metaphors that are used to describe the way in which mediation is presented to students: *sandwich* and *cake* (Sternberg and Grigorenko, 2002).

Sandwich Model

The sandwich approach to dynamic assessment uses a pretest and posttest approach with the mediation sandwiched between the exams. Within this approach the score is often reported as the average of the pre and posttest scores. This approach to DA is often justified as a method to increase reliability of test results (Sternberg and Grigorenko, 2002). However, Lantolf and Poehner (2004) feel that the attempt to reduce the amount of interaction between the student and the examiner is not in keeping with Vygotsky's conceptualization of the ZPD. In fact, it is the interaction between a learner and a mediator that constitutes development.

Cake Model

In the cake metaphor used to describe DA, students receive mediation throughout the exam (Sternberg and Grigorenko, 2002). That is, hints are presented to the student until they reach the right answer or give up. Generally the results of this type of dynamic assessment are determined through a formula that considers the amount of time required to complete the assessment and the number of prompts required to arrive at the correct answer (Lantolf & Thorne, 2006). Additionally, an answer profile may be provided in order to outline the strengths and weaknesses of a particular student by detailing the questions where more assistance was needed and those where less assistance was needed (Guthke & Beckmann 2000).

Interactionist/Clinical DA

The interactionist viewpoint of DA is clinical. That is, proponents of this framework reject the quantitative view of dynamic assessment and embrace a qualitative approach. Interactionist DA proponents believe that interventionist DA provides a view of actual development and not of potential or future development. They also believe that the conceptualization of the ZPD that forms the basis of interventionist DA is skewed (Minick, 1987, Chaiklin, 2003). Therefore, in interactionist DA examinees and experts work together in unscripted union during assessments in order to assure student success.

Various authors, such as Snow (1990), Grigorenko and Sternberg (1998) and Sternberg and Grigorenko (2002) have discussed the need for a firmer psychometric foundation of DA. Yet others feel that the push toward

quantifying student interaction and performance on DA is shortsighted due to the fluid nature of the student/teacher interaction (Tzuriel 1992; Feuerstein, 1997). This is the essence of the debate between those who adopt an interventionist approach and those who adopt an interactionist approach to DA.

In the clinical model of DA, the assistance that accompanies assessments vary according to the context of the testing situation and the specific needs of the student. Student needs are determined by the student's responsiveness to mediation, the correctness of their responses and the mediator's anecdotal knowledge of the student's behavior (Feuerstein, 1979). While, the test given to students may be the same, the interaction between the student and the test administrator is not standardized. It is this lack of standardization to which critics of this approach object (Buchel & Scharnhorst, 1993; Guthke & Beckmann 2000; Grigorenko & Sternberg 1998; Sternberg & Grigorenko 2002). Lack of standardization is seen as obscuring the distinction between the performance of the child and that of the mediator. Moreover, critics believe that the inability to replicate results from one testing context to another is a weakness. This is illustrated by studies that comment on low inter-rater reliability (Samuels et al. 1989; Vaught & Haywood, 1990).

Proponents of a clinical, rather than a psychometric approach to DA, see the interaction of the child and the test administrator as the construction of the ZPD or the way in which learning occurs. It is this very interaction that produces learning and then creates development. Feuerstein (1988) argues

that the mediated learning experience (MLE), a concept that more or less mirrors that of the ZPD, is constructed to hasten change and that each interaction between a student and a teacher will be different in each testing situation because the interaction is driven by the needs of the student. Feuerstein feels the standardization of the interaction that occurs between the test taker and examiner “strongly affects the total interactive process” (p. 277). He goes on to say that standardization of the interaction between the student and mediator “may even hamper the gathering of information on the true manifest level of skills and knowledge of the individual” (Feuerstein et al., 1997, p.304).

In the clinical approach to DA, assessment methods that impose strict rules on the interaction and testing method are really static assessments (SA) or NDA. This is due to the fact that they do not change the theoretical assumptions made by a psychometric conceptualization of assessment. Preoccupation with issues such as validity and reliability, in the mind of Feuerstein, blinds the researcher from seeing the structural change in the child, which is the crux of the MLE and the assessments based on it. (Feuerstein et al., 1997)

Tzuriel (1992) asserts that the mediation that takes place with the child is highly sensitive to the mediator. First, the learning potential of a student cannot be fully explored if the mediator is not sufficiently motivated or does not have adequate resources to devote to proper mediation and coaching. Second, the emotional factors that come into play when one intervenes in the

testing process pose problems for those who wish to examine assessment using psychometric principles.

The decision of whether or not to use a dynamic assessment model that employs a standardized or dynamic intervention varies according to the goals of the assessment. For example, Gipps (1999) asserts that if an assessment is to be used in a situation that requires the comparison of individuals then assessment that is somehow standardized should be used. If instead the goal of an assessment is to uncover the learning potential of an individual then a method where fluid interaction is allowed should be used.

The goal of the DA that will be facilitated by this study is not the comparison of performance, but rather the investigation of individual behaviors during learning. It is this exploration that will allow the creation of an individualized action plan that will guide the interaction that a student will receive in their future studies. The conceptualization of DA that stresses the standardization of intervention between mediator and student will not be utilized. Rather, methodology that embraces responsiveness to individual student needs has been chosen. Therefore the way in which students will be dynamically assessed in this study will follow the clinical approach to DA.

The purpose of the previous section is to outline the clinical approach to DA, outline the arguments that support its use and to detail the reason why the interactionist approach to DA will be used in this study. In order to explicate the roots of the clinical to DA approach the following paragraphs outline in more detail Feuerstein's approach to DA and the theory that drives

it. Consequently, the approach of Reuven Feuerstein will be examined in the following section, as he is the leading proponent of interactionist/clinical DA.

The Approach of Feuerstein

Reuven Feuerstein is best known for his belief that intelligence can be modified as well as for the establishment of the International Center for the Enhancement of Learning Potential (ICELP) in Jerusalem. The goal of this organization is to aid mentally disabled people develop cognitively. The belief that a person's intelligence can be modified is the basic premise for a learning theory called Structural Cognitive Modifiability (SCM) and a process central to this theory is called the Mediated Learning Experience (MLE).

Structural Cognitive Modifiability

In SCM, psychological processes are seen as structural. That is, they are part of a web of interconnected processes. This means that a change in one structural area will not only affect that particular mental process but also the processes on which the affected areas are dependant. Moreover these psychological processes are fluid and readily transform themselves. Due to the integrative nature of the structure, changes in one area ultimately affect the manner in which the system functions (Feuerstein et al., 2002).

Cognition, for followers of SCM, is composed of several mental processes such as judgment, perception and learning. It is important to note that the most significant way in which these mental processes are shaped is through interaction in a social milieu. Feuerstein believes that cognition is the most modifiable of the psychological processes and also one of the most

important as it is highly correlated with an individual's social, educational and occupational setting (Feuerstein et al. 1997). Modifications that are made to cognitive processes do not rest only in that specific process, but also affect the other systems within the individual. For instance, modification in the area of learning could very possibly affect the personality trait of confidence. This in turn might affect a student's motivation as well as other psychological areas.

In describing SCM Feuerstein highlights the importance of the scope of the modification that occurs within the individual (Feuerstein, 1988). This modification affects the different mental states in which learners function. For instance a child's behavior can be modified in terms of their reasoning ability or their overall general competence. In contrast modifications that are superficial, localized and short-lived only minimally affect the mental functioning of individuals and do so for only short periods of time. In short, Feuerstein views intelligence as acquiescent to change and human beings as dynamic and existing as open systems. A person's mental, emotional and intellectual activities are psychological states of the individual rather than hard-wired, stable traits. States are fluid and change according to the needs of the individual in a given situation. They are not fixed and therefore cannot be measured and instead must be interpreted (Feuerstein, 2002).

Critics of Feuerstein's SCM cite two weaknesses in his theory. First, they feel that no causal relationship has been empirically shown between the lack of exposure to MLE and cognitive deficiencies. Second, they state that the

results of empirical studies are mixed showing improved academic performance brought about by exposure to MLE (Sternberg & Grigorenko, 2002). However, these critics make a false assumption. By criticizing the scarcity, as well as the mixed results of empirical studies showing a correlation between deficient MLE and decreased cognitive functionality, Feuerstein's critics assume that the MLE can be measured. However, this is not the case. The MLE is a means to provide an interpretation of an individual and a quantifiable calculation of ability. This is supported by Feuerstein's belief that being in a constant state of flux, human psychological states cannot be measured (2002). The dissonance between clinical and psychometric outlooks is illustrated by Ratner (1997) where he disputes the long-standing belief that human abilities can be reduced down to discreet, empirical outcomes. This type of reductionist approach to cognitive psychology obfuscates the full extent of a person's mental competence.

Mediated Learning Experience

In the SMC view of intelligence and learning, two individuals work in conjunction in order to classify and organize environmental stimuli through a process entitled mediation. Mediation assists the novice working within any given situation to be guided to more advanced levels of cognitive development. The idea of mediation in the MLE is parallel to the idea to mediation within the ZPD. Advancement in terms of development is obtained while working socially with others and is then internalized when a participant can accomplish the task on their own. The MLE is in essence the interplay

between two or more individuals in a learning situation. Generally, mediation may occur in dyads with an expert and a novice learner. Often the parent is seen as the expert and the child as the novice. In the MLE an expert selects the stimuli that is deemed appropriate to the given situation and aids the novice in appropriating it. Here mediation is a method of filtering information and presenting it in a way that is meaningful to the child. For example, if a child seems to have a difficult time understanding the directions of a given task, then the mediator should give specific attention to making the directions comprehensible. Learning in the MLE is purposeful and aims at producing development in the novice participant. It is not simply the transmission of knowledge but rather the shared construction of an activity that defines the interaction. Experience in the MLE is “reciprocal, emotional, affective and motivational aspect of the interaction that melds the activity into a meaningful and structural whole, leading to self-awareness, structural change and cognitive development” (Feuerstein et al. 2002, p. 75). This underlines the importance of the unscripted dynamism that must exist within the MLE.

Important in Feuerstein’s theory is the notion that inadequate or all together absent MLE leads to cognitive deficiencies. Yet conversely, dramatic infusions of MLE can greatly modify cognitive structures in individuals can affect not only cognition, and subsequently development (Feuerstein et al., 1997). This is due to the interrelatedness of the human system. In fact the more exposure that a learner has to the MLE the greater

the chances that the learner will be able to interpret and benefit from direct mediation by themselves.

It is essential to note that not every interaction that occurs between two or more individuals can be categorized as an MLE. Indeed, not every interaction that a person has with another person is an experience from which something can be learned. In order for interactions to be categorized as MLE, Feuerstein outlines three considerations that must be respected (2002). While there are other parameters that can be considered in the establishment of meaningful MLE, they are situationally dependant and do not necessarily have to be included in every MLE.

Intentionality-Reciprocity is the first of the three parameters of meaningful MLE. Intentionality means that the purpose of the mediator working with the student in the MLE is to modify the student in such a way as to promote cognitive development. Every action that the expert participant initiates is done with the goal of aiding the novice to grow in terms of mental processes and not merely arrive at the correct answer to a given problem or simply complete a single task. The mediator's responsiveness to the individual needs of the student as reflected in the student's responses is illustrated by reciprocity of the MLE. Most importantly, the mediator must be responsive to the needs of the student particularly in terms of the student's ability to respond to the mediator's intentionality. That is the student must be able to understand and respond to the mediation that the expert participant has provided to the novice (Feurestein et al., 2002).

This is echoed by Erben's (2001) notion of mediational sensitivity and learner reciprocity. Both ideas encompass the ability to respond appropriately to the mediational means of a collaborator and also suitably respond to mediation. Poehner (2005) also explored learner reciprocity. His findings mirror those of Erben. He found that students who were willing and active participants in the mediation, benefited most in terms of language development.

The second characteristic of meaningful MLE is characterized by application of skills to which the learner has been exposed and the transference of the aforementioned skills to situations that are removed in both time and space, yet require similar strategies. That is, the student should learn specific strategies that can be transferred to different tasks instead of a specific skill. The application of this learning to novel situations is called transcendence and creates the potential for the child to spontaneously expand their own cognitive and emotional schema. Again, this concept was explored by Erben (2001). He found that student teachers who were able to actively manage mediation were more apt to benefit from it.

Third, outlining the purpose, principle and the design of the mediation as it relates to the novice participant working in the MLE is known as the mediation of meaning. Here the learner is shown the reason for completing a specific activity. The purpose of mediation of meaning is to allow the mediator to convey the filtered stimuli to the student in a manner that is appropriate both emotionally and affectively. In turn once the reason behind

the mediation is known, it is expected that the student will begin to search for the meaning of situations that are not an immediate part of the current interaction. Figure 3 details Feuerstein’s components of the MLE.

Figure 3. Components of the MLE

1. Intentionality & Reciprocity	A focused attempt to mediate the task—the goal of the mediation is development	must be present in any situation where the MLE occurs
2. Transcendence	The transfer of learning to a new situation	
3. Mediation of Meaning	Direct the student in a way that they understand what is important to recognize—objects and activities. This understanding is culturally defined.	
4. Feelings of Competence	Offering assistance to complete a task that is seen as too difficult for the student. Creation of feelings of competency in the learner.	May be present in different situations where the MLE occurs
5. Regulation and Control of Behavior	Controlling the behavior of the learner with the aim that they might control it themselves in the future	
6. Sharing Behavior	The manner in which the mediator selects and imparts stimuli to the learner. –eye contact, pointing, gestures---This ensures the effectiveness of the mediation. Can be considered a fundamental part of the MLE.	
7. Individualization and Psychological Differentiation	Encouragement of the understanding that individuals are different and possess different points of view.	
8. goal seeking, setting, planning and achieving	Structuring of the task so that it leads to the development of self regulation	
9. Challenge	Learner should be challenged to complete a task that is above their level of actual development, but the task should not be so difficult as to discourage the learner	
10. Awareness of change	The mediation of the awareness that people are capable of change	
11. Optimistic Alternative	Mediation of the fact that learners can become more than their present abilities suggest.	

MLE can occur either between a child and a parent, between a child and an individual other than the parent and the child, and also through cultural transmission. That is to say, that mediation can occur in any dynamic situation. Children who have a minimal home culture, not culturally deprived as in terms of the host country's culture, but do not have a well developed family structure, will receive inadequate MLE. In fact, there are two causes of inadequate MLE. The first one is determined by the child's environment. If they come from a background steeped in poverty, oppressive ideology or have a minimal or non-existent home culture they will have received inadequate MLE. Moreover, intrapsychological impairments such as autism or hyperactivity can result in inadequate MLE, (Feuerstein & Feuerstein, 1991).

The concept of the ZPD and the MLE developed independent of each other. Nevertheless, the MLE is remarkably similar to the concept of the ZPD, proposed by Vygotsky (Poehner, 2005). For instance, in both the MLE and the ZPD two individuals, jointly working, establish a learning situation in a social environment with the aim of further developing the mental functions of the novice individual. The novice/expert relationship in both conceptualizations is often categorized by parent or teacher and child.

There is an important distinction to be made when comparing the theories of Feuerstein and Vygotsky. Feuerstein does not emphasize the importance of society in the way that Vygotsky does. Rather he feels that it is one on one interaction that promotes cognitive development. In fact, he

emphasizes the importance of the mother/child relationship in the development of the child's development (Sternberg & Grigorenko, 2002). Based on SCM theory and interaction that occurs within the MLE, Feuerstein has developed a measure of intelligence that he labels the Learning Propensity Assessment Device (LPAD). It is this assessment that will be discussed in the following section.

Learning Propensity Assessment Device

The LPAD provides an alternative to traditional IQ tests. It was designed to reflect cognitive ability, that is otherwise not observable, of low achieving children such as educationally disadvantaged immigrants, emotionally handicapped children and minorities. This test was conceived of at a time when Israel was welcoming large numbers of immigrants and having difficulty integrating them into Israeli society (Feuerstein, 1979). Feuerstein believes children who were being relocated to Israel after the holocaust were ill prepared to meet the mental demands placed on them to function in the modern world. This was due to the fact that they came from culturally deprived environments. Many of these children were considered to be mentally retarded or of below average intelligence due to their poor scores on traditional measures of intelligence. The stigmatism of being thus labeled threatened to deny them of the ability to become prosperous members of society and moreover deprive them of educational opportunities. Therefore, Feuerstein devised the LPAD in order to determine the intelligence of children

from these disadvantaged backgrounds and provide an alternative to the traditional ways in which intelligence had been conceptualized (1979).

The LPAD is theoretically grounded in SCM theory and endeavors to provide a complete picture of a child's development (Feruestein, 2002). Traditional assessments measure development by providing a snapshot of present development as determined by an exam that views knowledge as an accumulation of facts. In the LPAD, propensity for development is determined by the responsiveness to modification of a set of cognitive functions. The learner and the test administrator work together in order to solve a problem. This responsiveness to interaction with a more knowledgeable participant, in turn, demonstrates the ability to benefit from mediation and potential learning.

Despite the LPAD's origins as an assessment for disadvantaged children, it can also be used to determine an adult's propensity to learn and develop. This is due to the fact that everyone can and does experience inadequate MLE in some aspect of their development (Haywood, 1997). Take for example a child that grew up in an urban setting. It could be said they have experienced inadequate MLE concerning chores that are routinely done on a farm. The way in which Feuerstein views cognition parallels that of Vygotsky. Cognitive development is based on individual interaction and therefore cannot be scrutinized through statistical methods, even though LPAD finds its roots in a psychometric paradigm. Following Lantolf and Poehner (2004) any assessment can be administered dynamically, despite its

origins. In fact, it is the interaction between participants that creates the DA environment.

The LPAD is based the Raven Standardized Matrices, but is administered in a dynamic manner. That is, in the testing situation the learner and the test administrator work together in order to arrive at the correct solution to different questions. The LPAD is administered in a specialized testing situation that is flexible and interactive, varying from individual to individual. Being that the LPAD is reciprocal; the test administrator plays an important role. To be sure that the person providing the mediation to the student understands how to structure the interaction so that it is individualized enough for the student, Feuerstein created a guide that leads the administrator through the mediation. This guide is called the cognitive map and it highlights cognitive deficits and urges the test administrators toward an appropriate form of mediation (Feuerstein et al., 2002). However, it is very important that the mediator still respect the individualistic nature of the interaction. Dynamism is essential to the DA process. The mediator must attend to the transcendence of the situation, create the need within the student to develop a new mode of functioning and motivate learners.

An important difference in the LPAD and interventionist DA is the belief that this testing may not hasten change in the child (learning) but instead provide caregivers with a roadmap of what is needed and the time that should be spent on specific areas in order to cause change in the child. Through the LPAD a child's responses are operationalized and an action plan established

that is guided by the theory of structural cognitive modifiability (Feuerstein et al 1985).

In conclusion, there are three major differences between the LPAD and traditional assessment. Firstly the goals of the two are different. In traditional assessment the goal is to compare a child to their peers. However the LPAD's goal is designed to teach and assess cognitive changes and therefore provide teachers with a plan of how best to structure future interaction with the learner. Secondly the LPAD is concerned with process rather than product. That is, the LPAD does not provide researchers with a score, but instead details the process and interaction that occurred between the learner and the mediator. Thirdly, the LPAD administration is interactive and fluid. It rejects the formal atmosphere of traditional assessment that often negatively influences the affect of test takers. The LPAD encourages the individualization of the testing process and does not regard influencing the learner's response as a threat, but rather a desired outcome.

The previous section details the interactionist approach to DA. The following section outlines the interventionist/psychometric approach to DA. However, it should be noted that the interactionist and not the interventionist model of DA will be followed in this study.

Interventionist/Psychometric DA

Generally, advocates of DA feel that the measure of a student's responsiveness to mediation provides data that is otherwise inaccessible through traditional testing methods (Budoff & Friedman, 1964; Sternberg &

Grigorenko 2002; Guthke, 1982; Guthke, Beckmann & Dobat, 1997; Haywood, 1997; Feuerstein, 2002, Poehner 2005, Lantolf & Poehner 2004, Poehner & Lantolf 2005, Lantolf & Thorne 2006). Yet these researchers differ in the manner that their exams assess learners. According to Budoff and Friedman (1964) their work on DA is based on a discussion by Luria (1961) where the concept of the ZPD is investigated. In fact, those espousing a statistical approach to DA cite Budoff and Friedman (1964) as a seminal work. Psychometricians recommend standardized methodology in DA with the aim of the preservation of validity and reliability. This allows for the comparison of individual measures against those of a larger population. This is based on the belief that the ZPD is actually something that can be measured and not a descriptor of an individual's developmental state. In the following sections the various approaches of those that have embraced a psychometric methodology are explored, and their practical application is explicated.

The Approach of Budoff (Measurements of Learning Potential)

Based on the belief that standardized intelligence tests are biased against students from socio-economic, cultural and educational backgrounds that differ from those of mainstream students, Budoff and Friedman (1964) pioneered a branch of DA known as Measures of Learning Potential (MLP). The MLP is based on the belief that certain educable disadvantaged children are more capable of learning than traditional testing suggests. If students are allowed to solve problems with assistance in the form of organized,

specialized instructions then some students would perform better. Learning potential is expressed in terms of a student's gain score from a pre-test to a posttest measure (Budoff, 1987). Budoff hypothesized that if a student is trained in test item solving strategies, as well as being familiarized with the manner in which questions are presented, their test scores would increase. Nowhere does Budoff or Friedman mention the goal of the MLP as cognitive development. While conducting his investigation into test score increase, Budoff uses only testing instruments that have previously established validity and reliability such as the Raven's Progressive Matrices.

As previously noted in the section entitled *the Origins of DA*, MLP finds its basis in Luria's call for the objectification of the testing of learning disabled and physically disabled children (1961). In fact, Budoff himself cites Luria as the basis for his DA approach (Budoff & Friedman, 1964).

Central to the MLP approach (Budoff & Friedman, 1964) is the standardization of the intervention that mediators provide to learners. No deviation from a list of standardized cues and suggestions is allowed, despite the specific needs of individual learners. The tests are administered following the sandwich model. Recall that assessments that adhere to the sandwich model of DA follow a pretest, training, posttest format. In fact deviation from the preset order and structure of the mediators' systematized recommendations is viewed as a threat to test reliability. The purpose of the testing administrator is restricted to: directing students' attention, explaining the most important parts of the task and the testing procedure and lastly

guiding the student in mastering both the cognitive and motor demands of the test (Sternberg & Grigorenko 2002). This is an attempt to separate the test administrator and the student in terms of interaction. Incidentally, Budoff excoriates alternative approaches to DA, such as that of Feuerstein, by stating " it is difficult to distinguish the contribution the tester makes to student responses from what the student actually understands and can apply" (Budoff 1987, p. 56). It is important to note that from a Vygotskyian stance separating the learner from the environment in which the learning is occurring strips away the understanding of the creation of learning and development. Interaction between a student and the environment is the foundation of development. It is not something that can or should be controlled through empiricism.

Notwithstanding the incongruence of the MLP and the Vygotskian idea of development, there are some advantages to this technique (Sternberg & Grigorenko 2002). In particular, when looking at the assessment through a psychometrician's lense, there seems to be a correlation between learning potential and scholastic achievement (Laughon 1990), as well as a correlation between learning potential and teacher's classification of students (Budoff & Hamilton 1976). Lastly the MLP is relatively easy to administer and does not require intensive training (Budoff 1987).

The Approach of Guthke (Lerntests)

Guthke and his contemporaries have created a series of assessments that are known as the Lerntests (Guthke, Heinrich and Caruso 1986). Just as

the MLP, the Lerntests essentially follow the sandwich model of DA. An important difference is the individualized intervention that is provided to students during the training phase of the test administration (Guthke, 1982). Hints are presented to test takers that range from implicit to explicit in nature. For instance when a question is answered incorrectly the first time a vague prompt is given similar to "that's not correct, please try again." As the learner progresses through incorrect answers the prompts become more explicit. Additionally specific attention is given to mediating adverse testing behavior of students, such as lack of attention to task or the inability to understand feedback.

A defining characteristic of these tests is the belief that individual learners possess different ZPDs. These ZPDs exist in different task specific domains, such as language aptitude. Here the traditional interpretation of learning potential and its influence in establishing the intelligence of a student is abandoned for the analysis of a specific skill set. In an attempt to access these different domains, it seems that Guthke has merged the rigor of psychometrics, as characterized by Budoff, and the attention to the individual, as characterized by Feuerstein. For instance, he states that the goal of the Lerntests is to "combine the advantages of assessment during a training phase with the advantages of psychometric models" (Guthke 1993, pg. 43).

Another interesting aspect of the Lerntest is the fact that student performance is reported by the use of both a score and a report. The score is determined by the number of questions answered correctly, the amount of

time needed to complete the exam as well as the number of hints needed to reach the correct answer. On the other hand, the score report is an account of the specific type of mistakes made, as well as an inventory of the type of assistance to which the test taker was most receptive. In turn, a plan of instruction is constructed, tailored to the student's needs and responsiveness, and administered via a training session. Lastly, a posttest is administered following the same requisites as in the pretest.

An important difference of the Lerntests from psychometric based DA, is the Lerntest's specific focus on development. In Budoff's model the sole concern is the quantification of learning potential as expressed by a gain score. On the other hand, Guthke specifically attunes the intervention to the learner's aptitudes and limitations. It is argued that if in the second administration of the exam, a student's score is higher and the number of prompts needed has decreased then the targeted intervention has been successful by hastening cognitive development and the efficiency with which it is acquired (Guthke & Beckmann 2000). It is important to note that an increase or decrease in score does not necessarily reflect cognitive development or the lack of it. It could be that a student required fewer hints to arrive at the correct answers and therefore development did indeed occur. Changes that occur within the learner may be accurately reflected in the qualitative learner profile.

Of particular interest is the creation of a computerized Lerntest dubbed the Adaptive Computer Assisted Intelligence Learning Test Battery (ACIL)

(Guthke, Beckmann & Dobat, 1997). It conforms to the idea of the Lerntests in that it allows for both a quantitatively obtained score and a qualitative analysis of errors and responsiveness to mediation. The ACIL exam is presented in an adaptive manner. This means that an initial set of questions is presented to students to determine their actual level of development. Subsequent questions are selected and displayed to each student based on their individual performance. The testing ends when a student has correctly answered enough questions to reach a predetermined criterion or has repeatedly failed without any advancement. Therefore, the amount of time that students spend on the test will vary based on their capabilities. An interesting aspect concerning these exams is the fact that a computerized adaptive test is sensitive to the aptitudes and limitations of the test taker mirroring Feuerstein's call for individualized mediation contingent on a student's responsiveness and ability level.

The Approach of Campione and Brown (Graduated Prompts)

The Graduated Prompts approach employs a pretest/posttest design in the same manner as the MLP and the Lerntests. Furthermore, this approach uses a menu of standardized prompts that are presented from implicit to explicit, as in the Lerntests. Graduated Prompt DA is not used to examine general notions such as intelligence or aptitude. Instead, these tests investigate specific academic areas such as science or math. Unlike the kinds of DA previously discussed, this approach has been used with both learning disabled children as well as unmarginalized populations (Brown &

Ferrara, 1985)

A defining concept of the Graduated Prompts approach is the inclusion of tasks that necessitates the transfer of a set of skills or principles from a question or a set of questions to a similar question or set of questions. That is, improved performance is not seen simply in the posttest, but in a different assessment altogether that explores concepts similar to those presented in the pretest (Campione, Brown, Ferrara & Bryant, 1984). The distance from the original question and complexity of these similar, yet different problems, are designated as near transfer, far transfer and very far transfer. During the posttest while these transfer problems are being administered, intervention is proposed to examinees. Student reports are created based on both the test taker's responsiveness to mediation during the posttest administration of the transfer problems. These reports detail the amount of time that students require to learn new patterns and principles. This is reported in terms of learning efficiency, or the number of hints required to reach a correct answer. Also the learner profiles detail a student's ability to apply the patterns learned via the test and mediation and their capacity for applying said principles to near, far and very far transfer problems.

The Approach of Carlson and Wiedl (Testing-the-Limits)

Carlson & Weidl (1980) have constructed a theoretical framework that meshes DA and information-processing theory. This is contrary to previous work done in DA. Research in the MLP, Lerntests and the Graduate Prompts approaches all find their roots in special education settings and adopt a

psychometric interpretation of DA. Yet, Carlson and Wiedl, while still being situated within the field of special education, feel that students' poor performance on high stakes tests is due to their inability to understand what is expected of them. A student's personality can also affect their test performance. For instance, a student that has high levels of self esteem might perform better than one with low levels. The same could be said of a student that lacks motivation.

According to Sternberg & Grigorenko (2002) the objective of the testing-the-limits approach is the optimization of the testing situation or in other words determining the type of intervention that is most beneficial to differing types of students. The central idea is that changes in the testing situation can aid disadvantaged students, helping to compensate for educational deficits or learning disabilities. Therefore, the goal of the testing-the-limits approach is to find a match between the changes that should take place in the testing situation and the specific needs of the individual.

Similar to other psychometric methods, advocates of the test-the-limits approach use previously constructed, standardized tests presented according to the cake metaphor. That is, intervention occurs during the test, directly after a question has been incorrectly answered. Moreover, the mediation presented to test-takers is standardized. Embedded in the standardization, are two types of intervention: feedback (elaborate and extensive) and test-taker verbalization. Feedback in this instance is used in the traditional sense. Students are told whether or not they have answered a question correctly and

if not they are given hints designed to help them arrive at the correct answer. The verbalization aspect of the intervention is designed so that the prompts illicit think aloud speech by the test-takers (Carlson & Weidl, 1992). Verbalization is done so that the test administrators can more accurately access the specific needs of the student, or involve the student in metacognitive strategies with the aim of leading them to the correct answer. In order to facilitate an understanding the differences among the DA approaches, figure 4 presents the researcher(s), the name of the assessment, the type of assistance offered, as well as a classification of the DA type.

Figure 4. Approaches to DA

Principal Researcher(s)	Name of assessment/ approach	Type of assistance	Type of DA
Feuerstein	Learning Propensity Assessment Device (LPAD)	Unstandardized, mediation is dependant on the mediator's anecdotal knowledge of the student, items to which student appropriately responds, as well as the student's responsiveness to mediation	Interactionist/ Clinical
Budoff & Freidman	Measures of Learning Potential (MLP)	Standardized, mediator conducts mediation according to a predetermined script	Interventionist/ Psychometric
Campione & Brown	Graduated Prompts	Standardized, mediator conducts mediation according to a predetermined script	Interventionist/ Psychometric
Guthke & Beckmann	Leipzig Learning Test (LLT) or lerntests	Standardized, mediator conducts mediation according to a predetermined script	Interventionist/ Psychometric
Guthke, Beckmann, Stein, Vahle and Rittner	Adaptive Computerized Assisted Learning Test Battery (ACIL)	Standardized, computer presents ordered hints and prompts, questions are presented in an adaptive manner	Interventionist/ Psychometric
Carlson & Wiedl	Testing the Limits	Standardized, with an emphasis on elaborate feedback and verbalization by the student	Interventionist/ Psychometric

The previous section provides an overview of the psychometric approaches to DA as illustrated by the work of Feuerstein, Budoff and Freidman, Campione and Brown, Guthke and Beckmann and Carlson and Wiedl. While the focus of their research is on the assessment of learning measures they consider inaccessible through traditional assessment, their conceptualization of cognitive development eschews the ideas of Vygotsky. The ZPD was never meant to be a heuristic. It was never meant as a method to quantify learning potential or responsiveness to mediation. Instead the ZPD is a way in which to examine emerging processes. The psychometrician's view of DA stands in sharp contrast to that of Feuerstein who believes the MLE, a concept remarkably similar to the ZPD, cannot be measured and must instead be interpreted. It is this clinical or interactionist approach that is adopted in this study.

DA studies in a L2 Context

The subsequent section outlines the few studies that have been carried out concerning DA and its implementation in second language settings. Firstly a study, which at first glance might appear to be misplaced, is discussed. This study is included here because it elucidates the acquisition of specialized vocabulary in a scholastic setting. Gibbons' 2003 study is pertinent to this discussion because, even though it does not formally use DA procedures, it does have the aim of working in the ZPD in order to promote development. Next, Kozulin & Garb (2002) detail research with at-risk students learning English as a foreign language in Israel and the use of DA of

reading comprehension. They conduct a statistical study that offers evidence of effective mediation. Afterwards Peña and Gillam (2002) query the effectiveness of DA in distinguishing between students that are in the process of learning a second language and those that actually suffer for a language learning disability. The discussion then moves to a discussion of a study on computer mediated DA. Tzuriel and Shamir (2002) administered an IQ test in a dynamic manner to two groups of kindergarten students; one using computer assisted mediation and the other providing interaction from a human mediator. The next study in this section is one conducted by Guthke & Beckmann (2000) in which they create a battery of DAs designed to capture the potential development of a student. Of particular interest is the creation of a language aptitude test that is administered in a dynamic manner. Lastly two studies, one by Antón (cited in Lantolf & Thorne, 2006) that examines student placement in college level Spanish, and another by Poehner (2005) concerning university level French students are discussed. Of all of the studies detailed in this section, it is the last two that are the most relevant in terms of the study proposed by this paper. They both involve university level students of foreign languages and are also situated within the interactionist paradigm to DA.

Gibbons (2003) examined elementary school aged, ESL students who were learning content specific vocabulary in a content science class. The goal of the teachers in this research was to enable students to use register appropriate terms to describe magnetism and its surrounding concepts. For

instance, when explaining the properties of magnets initially students used terms such as 'stick' and 'not pushing.' After teaching interaction sessions, conducted individually and as a group with students, the pupils were able to use terms of a higher register to describe the same properties such as 'attract' and 'repel' (Gibbons, 2003: 258).

In terms of development within the ZPD, the initial use of simplistic terms not appropriate to academic language, reflects the students' level of actual development. Their ability to correctly use scientific language during interaction with the teacher reflects potential development and the independent use of these terms in informal science journals illustrates the transference of these concepts and the self-regulation and internalization, of academic language concerning magnetism. It is important to note that the students' independent use of simplistic terms does not reflect their future development, only their actual development. The students' future could not be predicted from their present.

While this study does not formally use a DA framework to discuss the interaction between students and teachers, it does however investigate the construction of the ZPD in a language acquisition setting (Lantolf & Thorne, 2006). In this study the classroom teachers were concerned with their pupils' ability to use an academic register that is required of them when discussing scientific terms. They mediated the development of the students' Cognitive Academic Language Proficiency (CALP) (Cummins, 1979).

Gibbon's study shows the power of interaction within the ZPD. The fact that it also examined students in a second language acquisition context is also noteworthy, as few DA studies are situated in a SLA context. The children in this study were able to produce scientific terms through mediation that they were not able to produce while working alone. This type of revolutionarily activity is the catalyst of the development of higher order thinking skills.

The present as a non-indicator of the future is also illustrated by Kozulin & Garb (2002). They worked with students ages 18-25 who where learning English as a Foreign Language. Specifically their ability to understand academic reading passages in English was examined. Students were administered DA employing the sandwich metaphor concerning mediation. That is, they were given a pretest followed by mediation and then a posttest. The pretest was an adaptation of a standardized placement test used at various universities in Israel. Three sections of this test were omitted because they dealt items that were totally based on prior educational experiences, such as vocabulary recognition and speech production and because they were not reflective of the type of reading comprehension tasks that students will have to complete in educational settings.

The mediation was based on an analysis of the students' pretest scores and was divided into two parts. The first part provided mediation based on grammatical, word and sentenced focused items. Mediation plans were established that enabled "teachers to mediate each of the items in an

interactive way and to ensure that mediation was consistent from teacher to teacher” (p. 119). During the mediation sessions students were provided with semiotic tools (Kozulin 2002) to guide their study. These tools consisted of their corrected exams and handouts that detailed the various strategies that are necessary to successfully complete the tasks required on the pretest.

The second part of the mediation dealt with text-based comprehension skills. During mediation students were presented with four different texts with accompanying questions that assessed their comprehension. The texts progressively increased in complexity and sophistication. Mediators worked with students in order to help them solve novel comprehension questions, by drawing students’ attention to important parts of the reading as well as helping them decode words and phrases that were unfamiliar to them. These tasks were designed following the teaching of Feuerstein (1979). They stressed the transcendence of the situation, or the necessity to teach skills that transfer to new situations.

A statistical analysis of the pretest and posttest scores revealed that students did more than one standard deviation better on the posttest than they did on the pretest. This shows, according to Kozulin and Garb (2002), mediation was beneficial to students and that they were able to apply the strategies to which they were exposed in the mediation phase to novel situations. Moreover there was a negative correlation between the gain scores and pretest scores. In the opinion of the authors, this shows pretest

scores do not reflect the students learning potential but rather their actual development.

The study revealed that pretest scores do not accurately explain a student's ability to learn reading comprehension strategies. In fact, a closer examination of student scores reveals that students, who would have been classified at the same ability level according to a traditional placement test, instead have different developmental needs concerning text comprehension abilities.

The success of DA is dependant on the quality of interaction that the mediator provides (Kozulin & Garb, 2002). However, it should be noted that mediation may differ from test administrator to test administrator due to personal teaching style or motivational factors within the student. Therefore, investigation of the ZPD may reflect different abilities due to the interaction style of the mediator. In this study, learning potential scores indicate the method of instruction from which students can benefit, and provide teachers with a starting point to teach students.

It is important to mention this study because it is situated in a SLA context. It also provides evidence that DA can be used to provide a more complete picture of an individual's developmental state. However, Kozulin and Garb's use of statistical measures to indicate that students performed better on the pretest than on the posttest valorizes the position that the ZPD can be quantified; a supposition not adopted by this proposed study.

Often children that are bilingual or have other language influences in their home and also have difficulty producing academically appropriate language. These children may be referred to speech-language pathologists for testing. The purpose of this testing is to determine if a student possesses a language learning disability and establish individualized teaching programs for their remediation. Additionally, the socio-historical background of students can very much affect the way in which they view an event (see Heath 1983, 1986) and therefore distorts measures of their performance on standardized assessments (Greenfield, 1997). In response to this problem and more specifically the problem of determining if a child has a language learning disability or are in the process of acquiring a second language, Peña and Gillam (2000) have developed dynamic methods of distinguishing between students who do have a language impairment and those who simply have a language difference. In Peña and Gillam's approach, qualitative analysis of student responses provides practitioners with individualized action plans that detail the sorts of interaction to which students respond most positively.

Peña and Gillam (2000) have created three different methods of assessing children who have been referred for speech testing. These methods are further divided across ages. For instance, children who are of preschool age are assessed in terms of vocabulary. Elementary aged children are assessed in terms of their narrative or story-telling abilities. Children in the upper middle school grades and those in high school are

assessed using complex reasoning questions or explanatory discourse problems.

Of particular interest in this research is the case study of a bilingual Spanish/English child named Fernanda, who at the time of the study was 4 years old. She was referred for speech testing because while she responded to other children and teachers in the classroom, she did so in a non-verbal manner.

Initially her speech ability was examined using a vocabulary subtest of the Stanford-Binet Test of Intelligence for Children. She answered one out of ten items correctly and was rated significantly below the norm. Typically, she was not responsive to vocabulary prompts or responded with 'I don't know.' Considered alone, these indicators would lead one to believe that Fernanda had a language learning disability.

The mediation component of Peña and Gillam's assessment focused on two aspects. Firstly, she was told why it is important to know what the proper words that one uses to describe objects. Secondly, she was taught about the consequences of not properly using such words. Specific situations were illustrated that would necessitate the use of this specialized vocabulary. Also, Fernanda was encouraged to think about the different strategies that she would use to label objects and when she might apply these strategies. The structuring of the mediation was based on 11 components of the MLE (Feurstein et al. 1988) that are required for the student to fully profit from the mediation. Moreover, it was reported that Fernanda was moderately

responsive to the mediation, required moderate levels of support from the testing administrator, and exhibited some signs of strategy transfer.

Fernanda's score on the posttest does not show significant improvement from her pretest score. Therefore, Peña and Gillam conclude she has a language disability. However, qualitative analysis of her responsiveness does outline a series of actions to which she is responsive. This plan can be used to guide her language studies and the remediation that she should receive. For instance, it is suggested that her teachers construct activities that help her to focus her attention on the task she is expected to complete. Moreover, she should be encouraged to specifically name the items that surround her and are meaningful to her. She might be asked to name the toys that are present in her toy box. It is this type of action plan that interactionist DA seeks to create. Following the ideas of Feuerstein (2002), interaction with students should bring to light the manner of mediation to which a student is most responsive as well as, guide future interaction with them.

The results of this study deal with language specific issues such as bilingualism and child language development. However, the study is not directly situated in a SLA context. The study proposed by this paper will be situated in a SLA context. In addition, the subjects in the Peña and Gillam study are children. In this proposed study the participants will be adults. An important aspect of the Peña and Gillam study is the student report that accompanied students' scores. The creation of this type of score report is an

aim of the CDA that will be facilitated by the completion of this proposed study.

Tzuriel and Shamir (2002) conducted a study with two groups of kindergarten aged children and gauged their responsiveness to meditation provided by a computer and that of a human mediator, and contrasted that to a group of students who were provided mediation only from an examiner. The assessment that was administered to students is called the Children's Seriation Thinking Modifiability (CSTM) exam and was developed by Tzuriel (1995). It is important to keep in mind that this assessment is administered in a dynamic manner, and can be given via a computer or with a human mediator. The CSTM takes its conceptual framework from the work of Feuerstein and his idea of the MLE (Feuerstein et al., 1979). The exam requires students to place items in various orders. For instance, they might be asked to arrange pictures in order of greatest to smallest number of items represented. Tzuriel (2001) contends that the ability to seriate items is an important prerequisite to more advanced mathematical skills.

The CSTM consists of four different phases (Tzuriel, 2001). In the first phase the child is presented with three sets of cards that represent different items. All of these items can be grouped and arranged according properties such as darkness, size and number. The expected behavior (classifying the items according to their properties) is modeled for the child and repeated if necessary. The second phase, or the pre-teaching phase consists of ordering cards that have two different properties by which they can be

classified. The child is asked to arrange the cards based on one property and then reorder them based on a different property. For instance, a child is shown five different cards representing houses. All cards differ in terms of size and number of homes. Next, the child is asked to place the cards in order from the most number of homes shown to the least number of homes. In the next problem, the child is asked to rearrange the cards in terms of the size of the homes from smallest to largest.

The third phase is called the teaching phase and includes three separate test items. In these items, cards can be arranged according to three different properties. For example, five cards could be presented that contain pictures of fruits that can be classified according to their size, shape and color. The fourth and final phase of the test is called the post-teaching phase. This phase is identical to the pre-teaching phase. It is important to realize that a mediator is present throughout the exam, guiding the child through the problem solving process. The mediators model the behavior expected of the student and explain why an items should be ordered in such a way. Moreover the mediators provide affective support by encouraging the child and responding to their individual needs. The majority of the mediation occurs in the teaching phase, however interaction can occur in the pre and post-teaching phases. This would be done in order to focus the child's attention on the task or to explain how the program functions.

The electronic mediation, in the computer assisted CSTM also called Think-in-Order, mirrors the human mediated administration in terms of

phases. There is an animated character present in the program that directs the student throughout the questions and teaching phases. When the items to be seriated are presented to the child, no specific classification according to any dimension is required. However, once the child has seriated the cards they are asked to choose the dimension that they used in ordering the items. If they answer any of the questions incorrectly they are given feedback based on the Graduated Prompts approach (Campione & Brown, 1987).

The Think-in-Order testing program is based on the principles of the MLE, most notably intentionality/reciprocity (the ability of the mediator to focus on the needs of the student and to rework the tasks so that they match up with the student's needs), transcendence (the learner is being shown a skill or strategy that is transferable to a novel situation, instead of being focused on a specific task) and mediation of meaning (convey to the student the importance of the task that is being examined and responding to the student's achievement). These three principles should be present in every test whose goal is to engage in the MLE (Feuerstein et al. 1979).

While five hypotheses were proposed in this study, only 3 of them deal with issues specific to the Think-in-Order test and will be discussed here. Firstly, the researchers examined students who received computer assisted (CA) mediation in order to determine if they have higher gain scores than those who received mediation with only the examiner (EO). Secondly, the researchers explored the belief that students who are exposed to the CA mediation on a consistent basis have higher gain scores than those who

consistently exposed to only examiner mediation. Lastly, it was posited that gain scores will be higher for students that took the CSTM on complex than simple tasks.

The results of this study show that students from both groups, CA and EO, had higher gain scores from the pretest to posttest. However, the gain scores of the students in the CA group had significantly higher gain scores than those in the EO group. Some might argue that it is common sense that the CA group had higher gain scores because they were exposed to more teaching. However, statistical tests show that there was no significant difference in the length of teaching time or in the number of question trials between the two groups. It was also determined that as the complexity of skills tested increased so did the test's effectiveness. This was expressed in terms of higher gain scores on the computer-assisted assessment.

Moreover, Tzuriel and Shamir (2000) argue the measurement technique was not responsible for the differences in scores between the two groups. This is supported by the lack of significant difference in pre teaching scores of the CA and EO groups. This is due to the belief that the multimedia abilities of the computer fostered motivation in students. Also, even though subjects spent similar amounts of time taking the assessment and experienced a similar number of trials, it is suggested that students in the CA group received more interaction because the computer provides more mediational opportunities than work only with a human test administrator.

The authors state that the human mediator played a crucial role in the feedback that the students received and that the computer itself could not completely replace the mediation that comes from a person in the testing situation. They feel that computer assisted mediation should be used as an adjunct to human mediation. This is because the computer is unable to convey affective concerns such as kindness, dynamism and must adhere to a strict learning path from which it cannot deviate.

This study is included here because it is one of two studies that exist that investigates CDA. This study establishes the effectiveness of computerized mediation. However, the computer-mediated mediation that takes place in this study is supplemented by the presence of a human mediator. Moreover, the authors of this study contend that the computerized mediation would not have been successful without the presence of a human mediator. The study proposed by this paper rejects this supposition. In fact, the advantages of CDA (see Chalhoub-Deville & Deville, 1999) will provide opportunities for mediation that would not be possible in traditional DA contexts.

Guthke & Beckmann (2000) adapt an assessment and administer it in a dynamic manner in order to test a type of intelligence they label 'intelligence D' (p. 19). Intelligence D is a category of intelligence that the authors have added to the types of intelligence outlined by others (see Hebb 1949, Vernon 1962). They contend that this fourth type of intelligence, or intelligence D, captures a student's potential performance. That is, it measures how well a

student responds to mediation with the specific aim of improving performance on an assessment and the more general goal of promoting development.

Guthke & Beckmann (2000) argue that the belief that students' past performance is the best indicator of their future performance is valid only if there are no significant changes in the learner's environment. They therefore propose assessments that they label learning tests or *lerntests* (LLT). Furthermore, they assert that these assessments reduce both language and testing bias against cultural and language minorities. In fact, the authors have created a battery of learning tests, one of which is designed to measure language aptitude.

The language aptitude LLT adopts an approach similar to Campione & Brown's Graduated Prompts approach (Campione 1989; Campione & Brown 1987). That is, during the administration of the exam students that incorrectly answer an item are presented with a standardized set of prompts that range from implicit to explicit. For instance, a student that initially answers a question incorrectly will be told that their answer is wrong and asked to reexamine their response. The hints presented will become more and more explicit until the correct answer is given and the reason why it is correct is explained. In order to minimize the effect caused by students guessing the correct answer they are asked to explain why an answer is correct after having correctly responded to an item.

A characteristic of the *Lerntests* is the standardized method in which they measure learning potential. Guthke and Beckmann (2000) contend this

is done in a way that integrates components of the MLE such as individualization and transcendence, and at the same time preserving the psychometric qualities of reliability and validity. In addition they feel the standardization of these interactions relieve the test administrator of the burden of providing training for mediators.

An interesting aspect of the computerized versions of the LLT is their ability to adapt to the user. That is, they analyze a student's mistakes in order to present students with a set of questions that is appropriate to their skill level. Therefore, the computerized version of the LLT is CAT. Take for instance, an example from the Adaptive Computer Assisted Intelligence Learning Test Battery (ACIL). In a subtest dealing with figure sequences, each student starts with questions one and two. If the student answers these questions correctly they advance to questions seven and eight. Questions one and two, as well as seven and eight (and so on at intervals of six) are called target pairs. Target pair questions are dispersed through the exam and are used to introduce concepts that are considered to be at a higher level of complexity, as determined by an item facility rating. If a student answers a target pair question incorrectly they are then routed to questions that are considered to be less complex until they work their way back to the target pair questions. For each question that is answered incorrectly the test taker receives standardized feedback from the computer, much the same as is mentioned in the previous discussion of the LLT. The adaptability of the computer-based test offers sensitivity to students' levels of performance and

mirrors the belief of Feuerstein that the MLE should be a highly individualized experience (1998). Guthke & Beckmann believe that the use of adaptive testing allows for the individualization of the exam “without interfering with the standardization of and comparability of the testing procedure” (2000 p. 23).

After the pretest is administered, a score profile is created that details the number of hints that the student required to arrive at the correct answer as well as the time that was needed for the student to complete the assessment. The purpose of this report is to guide the mediation and address the weaknesses uncovered in initial testing. After the posttest (an exam parallel to the pretest) is administered most students increase in the number of questions that they answered correctly, decreased in the number of hints they required as well as lessened in the amount of time they needed to complete the exam.

Guthke and Beckmann’s study is the second of the two studies that exist on CDA; the first on being Tzurriel and Shamir (2002). Neither of these studies involve SLA. They believe intervention with students should be standardized. Their computerized DA does not deviate from a standard repertoire of hints and prompts. Interactionist DA contends that mediation should be highly individualized and contingent on student needs, and that standardized mediation sterilizes the dynamism between student and mediator.

Antón (cited in Lantolf & Thorne, 2006) reports on the implementation of DA in her university to offer a more precise method of determining the

placement level of students. Due to a realignment of curriculum as well as a push for accountability standards, it was decided that Spanish language majors would undergo a series of assessments. The goal of the assessment is to ensure that students finish the program with acceptable levels of language proficiency in written, spoken and academic Spanish. An entrance examination was established in order to provide students with the remediation that they require in order to successfully complete the program.

In her research, she presents descriptive statistics detailing students' scores on their entrance exam. The exam consisted of a writing section where examiners were asked to write about their experiences in the past and present using Spanish, as well as discussing their future plans after graduation. The first writing session was done without any kind of assistance. A second session followed where students were permitted to use dictionaries and grammatical reference materials, as well as ask questions of the test examiner. It is interesting to note that generally students choose to not ask questions of the testing administrator and when they did so they asked questions about idioms or specific words.

The test also contained a speaking section that was administered dynamically. It began with a short conversation, in Spanish, about personal interests, hobbies and travel to Spanish speaking countries. Second, students were presented with pictures illustrating a story and asked to speak about the situation in the past. This narration was done without mediator assistance. Next, scaffolding, in the form of leading questions and direct

instructions, was offered. Last narration was modeled and repeated by the student.

Next, students were asked to assume the role of a character in a story and say something suitable. The last section of the speaking portion of the test consisted of students constructing a three to four minute monologue. Antón reports that due to the novelty of the test, and the ability of new majors to opt out of taking the entrance exam, results for only five students are reported in the study. Of these five results only two are discussed in detail. Furthermore, the only component of the assessment mentioned in this review is of the speaking portion of the exam, because it is the only component that is administered in a dynamic manner.

One student does have some difficulty narrating in the past when describing the story illustrated by the pictures. He often reverted to using the present tense, however when he was given the opportunity to correct his mistake he did so. With the assistance of the mediator he was able to employ correct past tense verb conjugations.

Another student also had difficulty narrating the story in the past, but when her errors were pointed out to her she did not seem to be able to produce the correct verb forms. The examiner resorted to using more explicit hints without consistent results. For instance when the student was given the opportunity to choose between two forms, one correct and one incorrect, she was able to do so. However, she did not seem to be able to transfer this information to a new situation.

While both of these students appear to have difficulty narrating a story in the past, that is, they both revert to using the present tense, upon closer examination they both possess different levels of language proficiency. The student in the first example does have mastery of the past tense and is able to use it with relatively little coaching. However, the second student clearly has deficiencies in her level of language proficiency, yet the full extent of these inconsistencies is not evident until the mediator probes further. These two students might have scored similarly on a traditional placement test and were assigned to the same level of language class. Yet with the dynamic method in which this assessment was carried out, it becomes clear that the students both have different levels of language proficiency and require different plans of study in order to improve their speaking skills. This fact that could have very well been lost in traditional testing.

Antón's study mirrors some aspects of this study. It takes place with American, university level student of Spanish as a foreign language. The study includes students of French as a foreign language. The mediation that took place in Antón's study was interactionist; as is the mediation in this proposed study. However, Antón's study focuses on the effectiveness of DA. The efficacy of DA as a method for providing a complete picture of a student's development has been established (Kozulin & Garb, 2002; Peña & Gillam 2002; Guthke & Beckmann 2002). This study is different in that it aims to create a taxonomy of the different behaviors that students and mediators manifest in order to create the dynamic situation in which DA takes place. It

may be the case that the behaviors observed in this study will follow the components of the MLE as proposed by Feuerstein. However, given that the population is different (university level students of foreign language as opposed to special needs children and the fact that the context is different) some variations are expected.

Poehner & Lantolf (2005) and Poehner (2005), describe a particularly powerful example of how dynamic assessment can be used to provide a complete picture of learner development. The study examined advanced undergraduate learners of French as a foreign language and their ability to describe a video clip in French, that they had previously watched. The description of the video clip necessitated the use of the past tense including the *passé composé* and the *imparfait*.

The study participants watched a video clip a total of four times. The first time they watched the clip and described the action without mediation. The second time they watched the clip and described the scene with the help of a mediator. Following the initial video viewing sessions, a tutoring program was conducted with the student. This tutoring session was based on the student's strengths and weaknesses that were uncovered during the initial narrations. Students received intervention that was based on Feuerstein's clinical view of DA. That is, feedback they received was highly individualized and emerged through the course of interaction between the student and assessment administrator. Moreover, the interaction between the student and administrator was contingent on the students' needs.

Feuerstein's clinical approach suggests that after the administration of DA a plan of action be established based on the individual strengths and weaknesses of each student (1979). The tutor action plan in this study was specific to each learner's individual language strengths and weaknesses. That is it was based on their individual needs that were explored during the mediation phase. After six weeks of sessions, meeting twice a week students were retested both individually and with mediator assistance.

The results of the study are particularly illuminating. They show that while both students seemed to be unable to correctly differentiate between the passé composé and the imparfait, and would therefore be classified at the same ability level, they both have differing levels of understanding that only were uncovered by DA. For instance, one student required more assistance than the other. The type of hints that the weaker student needed were more explicit. She had to be given the correct form to use while the other student was only asked if the other tense was required.

Poehner (2005) includes a discussion of the regulatory behaviors of the mediator in his study. Aljaafreh and Lantolf (1994) too, created a typology of behaviors that occur within the ZPD. The typology of behaviors that was created by Poehner (2005) is shown below in figure 5.

Figure 5. Mediator typology

1. Helping the narration along
2. Accepting response
3. Request for repetition
4. Request for Verification
5. Reminder of directions
6. Request for renarration
7. Identifying the specific site of the error
8. Specifying error
9. Metalinguistic clues
10. Translation
11. Providing an example or illustration
12. Offering a choice
13. Providing correct response
14. Providing explanation
15. Asking for explanation

However, Poehner (2005) adds the concept of learner reciprocity (Lidz, 1991). In this study learner reciprocity is the behaviors that are carried out by the student to manage the mediation. An inventory of the behaviors that represent learner reciprocity is detailed below in figure 6.

Figure 6. Learner reciprocity typology

1. Unresponsive
2. Repeats mediator
3. Responds incorrectly
4. Requests additional assistance
5. Incorporates feedback
6. Overcomes problem
7. Offers explanation
8. Uses mediator as a resource
9. Rejects mediator assistance

In addition, Poehner (2005) investigated mediation purpose and mediation technique vis à vis the recommendation of Kozulin (2003). The distinction here is between the reason why someone used a mediation technique or manifested learner reciprocity in a certain manner and the actual behavior that was undertaken. It should be noted that one type of mediation could serve different purposes. Therefore, Poehner groups his mediational typology, as shown in figure 5, according to the mediation purposes in figure 7 which is shown below. Keep in mind that mediation purpose will vary according to the context of the given situation and different mediational behaviors can serve different purposes.

Figure 7. Mediation purpose

1. Managing the interaction
2. Reconsideration of performance
3. Identification of problem
4. Overcoming the problem
5. Probing for understanding

Moreover, Poehner (2005) argues effective mediation is that which increases learner participation in the dialogic process. Therefore, a student that shows more advanced levels of learner reciprocity is said to have more independent control of the task. This is possible even though the learner might not yet possess complete, independent control of the task.

Poehner (2005) and the subsequent report of this dissertation study in Poehner and Lantolf (2005) provide the most in-depth examination of DA in SLA contexts to date. They expand on the premise of other studies (Kozulin & Garb, 2002; Peña & Gillam 2002; Guthke & Beckmann 2002; Antón 2003). That is, Poehner (2005) and Poehner and Lantolf (2005) detail the efficacy of DA as a method of examining the development, in terms of language proficiency, as opposed to traditional static assessments. Again DA is shown to provide a more complete picture of language development.

In addition to the expansion of the research detailing the efficacy of DA as contrasted with NDA, Poehner (2005) provides a codification of both mediator and learner behaviors. However, this study does not examine how

the different levels of language experience affect the behaviors manifested by both the learner and the mediator.

In this previous section the seven existing studies concerning DA in a second language setting are examined. While some of the studies are conducted with children (Gibbons 2003, Peña and Gillam 2002) they nonetheless describe the power of DA. Tzuriel and Shamir's (2002) research concerning computerized DA is especially important as it establishes the efficacy of computer-assisted mediation. Guthke and Beckmann's (2000) paper ties Feuerstein's MLE and CAT together in order to create an adaptive computerized language aptitude test. The three remaining studies (Kozulin and Garb, 2002; Antón 2003 and Poehner and Lantolf 2005) are especially pertinent in that they all include university level students participating in various foreign language assessments. All of these studies, except for that of Guthke and Beckmann that primarily deals with the conceptual issues surrounding adaptive DA, demonstrate the ability of DA to distinguish the developmental potential of students, as well with providing educators with more precise indications of a learners aptitudes and limitation. Furthermore these studies show that DA is valuable in that it provides information that can be used to create an individualized action plan to guide the student's education.

Gesture, Thought and Language

The following section outlines gesture, its relationship to thought and the impact that the study of gesture has had on language acquisition

research. According to McNeill (1992) gesture and speech are inexorably linked to thought. That is, there are two sides to thought; an imagistic and a linguistic side. The former is manifested by the use of gestures and the latter comes about through the creation of speech. If one subscribes to the belief that gesture and speech are tied to thought, then from a Vygotskyian perspective it becomes clear that gesture can be used as a meditational tool and that this tool use, as with the use of all semiotic tools, occurs first on the interpsychological and then is appropriated in the intrapsychological plane. The latter is the underlying meaning of a gesture. That is, the gesture is made with the aim of conveying some sort of linguistic denotation.

Language is viewed as the most important of the semiotic tools that human use in order to mediate understanding of their environment. The first emergence of such tool use, in human children, is the use of gestures. Consider, for example, a child who does not yet speak. The way in which children of this age mediate the world around them is through gesture. This is evidenced by the fact that Vygotsky argued that the use of language is seen, in its beginning stages, to be "a conventional substitute for the gesture" (Vygotsky, 1986, pg 65). The substitution of words for gestures leads to the creation of private speech or language directed at the speaker himself. As with all types of language, private speech can be used to mediate activity. The previous section on gesture, thought and language us included to illustrate the way in which the three notions and behaviors are linked. Next, the discussion turns to gestures and their classifications.

Gesture

The discussion of gesture is important to this study because they are one of the semiotic tools that mediate action within the ZPD (McCafferty, 2002). Gestures are manifestations of inner speech or thought. Central to the understanding of gestures is the concept of growth points. McNeill (1992) considers to be a growth point to be the absolute beginning of an utterance, considering both its imagistic and linguistic properties. Indeed he argues that growth points are emerging processes that view an "utterance's primitive stage, the earliest form of the utterance in deep time, and the opening up of the microgenetic process that yields the surface utterance form as the final stage.... [It] unites image, word and pragmatic properties into a single unit." Furthermore he hypothesizes that the growth point is "the equivalent of what Vygotsky called the psychological predicate" (1992, p 220). It is also significant that gestures tend to occur when the speaker is aiming at maintaining the communicative momentum or at points of high communicative dynamism (Firbas 1971). Consequently, gestures occur at important points in a dialogue.

One of the most significant aspects of gestures is that through their study one can glean an understanding of the interlocutor's psychological predicate. In turn the psychological predicate provides one with a manifestation of thought. In fact McNeill posits "The gesture singles out what, to the speaker, are the utterance's least predictable, most discontinuous components" (McNeill, 1992, p 127). Therefore in order to understand

gestures and therefore growth points, a classification scheme is in order. McNeill (1992) offers a five-prong system for gesture codification; iconics, metaphoric, beats, cohesives, and deictics. Following McCafferty's 1998 classification of gestures, the category of emblematic gestures is added to this discussion.

Classification of Gestures

Before discussing types of gestures it should be noted that there are three phases to any gesture; preparation, stroke and retraction (McNeill, 1992). This is useful when one needs to discuss a specific gesture in detail. A gesture that represents a movement or a concrete object is said to be an iconic gesture. During the description of an event a speaker might use an iconic gesture to illustrate an object hitting another object by striking their open palm with their fist.

A metaphoric gesture is similar to an iconic gesture in that it is representational, however it is representational of an abstract idea or thought rather than a concrete object. For instance, a speaker that wishes to express that an idea is nebulous might wave their hand back and forth to indicate the way in which they view the concept.

Beats are a third type of gesture. They are gestural representations that mimic the beats of music. They are often a simple up-and-down motion. Beats differ from other gestures in that they have only two movement phases instead of the more common three. McNeill (1992) posits that beats do not further communication as other gestures do; they instead emphasize aspects

of the discourse that the speaker finds relevant. In exemplifying beats picture a foreign language student having a difficult time pronouncing a word. If they were to break the word down, and pronounce it syllable by syllable, they might emphasize their careful pronunciation by using beats.

When a gesture is used to bridge two concepts together it is called cohesive. All types of gestures can be cohesive. Therefore, when speaking to underscore the relatedness of two ideas an interlocutor could bring their hands together to form a pictorial bridge connecting the different concepts.

A deictic gesture is used to point out some concrete object or an abstract notion to which the speaker wishes to draw attention. In conversation, deictic gestures are most commonly used to refer to ideas rather than objects. For instance, a speaker that points behind herself in order to symbolically refer to a part of the dialogue that occurred in the past, has employed a deictic gesture.

An emblematic gesture is the type of gesture with which most people are familiar. For instance shrugging of the shoulders to indicate that you do not know a response is an emblem. A chart detailing each gesture type, its use and an example follows in figure 8.

Figure 8. Classification of gestures

(Based on McNeill, 1992 & McCafferty, 1998)

Gesture type	Gesture use	Example of Gesture
Iconic	Represent movement	Moving hands up and down to signify the rocking motion of a boat
Metaphoric	Represent an idea or thought	Point to your temple and making a circular motion to indicate that a person or idea is crazy
Beats	Emphasize part of a conversation that a speaker finds important	Snapping a pattern to indicate a sequence of events
Cohesive	Bridges two thoughts together	Intertwining of fingers to show the interrelatedness of two concepts
Deictic	Draw attention to a specific item in the discourse	Point to a speaker and indicate that a specific action happened to that individual
Emblematic	Represents an idea or thought, the type of gesture with which most people are familiar	Rubbing together of the thumb and index finger to indicate that something is expensive

Despite what is represented on the chart, one specific gesture can be classified as several different gesture types. The categories detailed above are not mutually exclusive. In fact, the boundaries among the differing gesture types are not always clear. For instance, a gesture may be, at the same time, both iconic and metaphoric.

In the next section the scant studies on gesture and SLA will be explored.

Gesture studies in a L2 setting

McCafferty (1998, 2002, 2004) has unearthed some interesting phenomena concerning the application of gesture in second language learning contexts. For instance, he found subjects use gesture in both private and social speech in much the same manner. That is, gestures occur at significant points in both private and social discourse. In these studies, speakers of English as a foreign language were video recorded as they either described a video clip that they had previously viewed or as they were dialogically engaged with a native speaker of English. The fact gestures occurs at points of communicative dynamism in the discourse is illustrated by the fact that each time subjects were object regulated, they employed gestures. Moreover, each of these instances of object regulation was accompanied by either verbal or gestural forms of other regulation, such as asking for assistance or looking at the researcher in order to ask for help (McCafferty, 1998).

In his 1998 study, McCafferty asked subjects to narrate a series of actions depicted in a picture or watch a video and provide a summary of it. It was found that object regulation in the form of gesture use was more common in the picture narration task than in the recounting the film task. This may be due to the fact that during the picture task subjects could actually touch the cards that depicted the story they were asked to describe. Furthermore, he

found that the number of gestures that accompanied other regulation varied by cultural group. For instance, Venezuelan students produced more gestures than Japanese students. A similar difference was also noticed in students of different proficiency levels. Students at lower levels of language proficiency tended to avail themselves of gestures during other regulation while those at higher proficiency levels did not. McCafferty hypothesized that fewer gestures occur as someone becomes self-regulated, but when they do occur they might give the researcher insight into inner speech and thus thought. He goes on to add “it is not particularly surprising that virtually no gestures occurred with forms of self-regulation, as, by definition, these forms indicate that the person has gained control, and as such the discourse is at a low point of communicative dynamism” (1998, p. 94).

In the same study McCafferty found the type of gesture most often brought to bear by subjects was beats. Beats were used to mark aspects of the dialogue that they speaker found to be difficult. More often than not they emphasized an effort on the part of the speaker to monitor some particularly troublesome aspect of grammar or pronunciation.

In 2002, McCafferty conducted a study similar to his 1998 study in that he investigated the use of gesture. However, in this study he examined the role of gesture in the creation of the ZPD. The interactions between a native speaker, an experienced teacher of EFL and an ESL student from Taiwan were videotaped. Through an analysis of the video recording, four different ways in which gestures were used to create the ZPD were found; lexical

comprehension, illustrations, references to the environment, imitation and synchrony. The different way in which gestures were used to create the ZPD is outlined in figure 9.

Figure 9. Ways in which gestures were used to create the ZPD

<i>Classification of gesture use</i>	<i>Description of how gestures was used</i>
1. lexical comprehension	Used to show lack of understanding
2. illustrations	Use of iconic gestures in order to reduce ambiguity
3. references to the environment	Referring to different locations to reach a shared definition of the activity
4. imitation and synchrony	Creation of dynamism, give-an-take during the conversation

Concerning lexical comprehension, it is clear that when the NNS in the study required assistance about a specific word or phrase they did not understand, a gesture was used either to elicit the troublesome item from the NS or to convey the meaning of the concept for which the NNS did not possess the vocabulary. It was not only the NNS that used gestures, but the NS as well. For instance when the NS wanted to illustrate the meaning of an idiom he used a metaphoric gesture combined with the use of beats. Also, the two interlocutors established gestures to represent lexical items that became part of their shared repertoire throughout the interviews. This use of shared lexical comprehension gestures "helped to create a high degree of intersubjectivity" (McCafferty, 2002 p 196).

In addition, the use of iconic gestures added a pictorial quality to the conversation. The NNS in the interaction seems to have used illustrator gestures a good deal. This may be due to the fact that he wished to reduce the ambiguity of his speech. That is, he wanted to create meaning through his interaction and gesture aided him in achieving this goal.

An additional method in which gestures assisted in the creation of a ZPD between the two individuals is illustrated by the concept of imitation and synchrony. According to Vygotsky, (1978) imitation is an important aspect of learning in that an individual can mimic only that which is accessible to them in terms of development. This point is further illustrated by Newman and Holtzman (1993) when they attest that imitation is the primary revolutionary activity that occurs within the ZPD. Within the individuals' interaction, it is important to note that both imitated each other's gestures. This give-and-take helped to make both members feel that they had an important stake in the conversation. Therefore it was an important factor in the creation of the ZPD.

Synchrony is the mimicry of another's posture, gestures or movement (Argyle, 1988). McCafferty contends that there were numerous instances when the study participants mirrored each other's gestures. Take for example, one instance when the NNS copied the gestures of his interlocutor. Specifically he mimicked beat gestures that were produced by the NS. McCafferty suggests that this was perhaps an attempt to "capture the rhythm of English" (2002, p. 200).

The final study that will be included in this review of articles on gesture in second language learning context is also by McCafferty (2004) and investigates the likelihood that gestures are used as a tool to solve problems on the intrapsychological plane. The same data collection that facilitated his 2002 study, also provided the basis for this study. It is important to recall that in his 1998 study it was found that gestures accompanied the majority of instances where the subject used private speech and was either object or other regulated. Thus giving rise to the notion that, if gesture and inner speech go hand-in-hand, and if we accept private speech as the manifestation of inner speech during challenging circumstances, then one can reason that gesture may provide valuable insight into cognitive development, as gestures afford researchers the opportunity to study thought.

In McCafferty's 2004 study, again the participants were a NS and NNS of English discussing various topics. These discussions were video recorded and then meaningful instances of gestures were analyzed. It was found that the NS's gestures mirrored his speech, but offered somewhat amorphous representations of his discourse. In contrast the NNS, who also employed gestures to mirror his speech, did so in a manner that illustrated high levels of discourse representation.

For example, the NNS in the interaction made use of iconic gestures, abstract deictic gestures and beats as a reflection of his thoughts. Yet, as mentioned previously, the NS while making gestures, did so in a vague manner. McCafferty reasons that this is due to the fact that the purpose of

the NS's gestures was to make the interaction more lexically rich so that the NNS would have various streams of meaning from which to gain understanding. Furthermore, McCafferty posits that the multitude of gesture and the degree of representation that they embody illustrate the fact that gestures do indeed represent thought.

The previous section outlines the ways in which gesture, thought and language are related. A classification and meaning typology of gestures is presented, as is a review of studies in an SLA context. From this review, some interesting themes emerge. For example, the frequency of gestures lessens once an individual becomes self-regulated. In addition, gestures occur at points of discourse that the interlocutors consider to be in some way significant. The use of gestures helps to create the ZPD and gestures do indeed represent thought.

This chapter has presented a review of literature that helps to create an understanding of the context in which this study is found; the conceptualization of learning, development and assessment that provides the framework through which to view DA; and the studies that have been completed thus far combining DA and SLA. In addition, the role that gestures play in mediation and the formation of higher order thinking is included. Special attention was given to the origins of DA and the divergent DA constructs that have resulted from misunderstanding a call for objective testing of disadvantaged populations. It is this misunderstanding that has led to the greatest point of contention among DA scholars; the role of

psychometrics. In the subsequent chapter the way in data will be collected and the manner in which it will be analyzed is outlined.

Chapter 3

This chapter outlines the methodology that was employed in this study. More specifically, this chapter will explain how data was collected and the approach that was taken analyzing it. The ultimate goal of the study is to explore the implications of a DA training session on instruction, to categorize the mediational behaviors that occur during the interaction between a novice and an expert while working through a DA procedure and to explore the ways in which students and mediators externalize reciprocity of mediation, mediational sensitivity and mediational management.

In the following section the overarching question and the smaller sub-questions of this study are outlined. They are designed to mediate my understanding of the how students and mediators behave while they are interacting in DA. Even though the questions are separate units, they are indeed overlapping.

Research Questions

Overarching Question

The overarching question of this study is “how does the use of semiotic tools mediate language learning in a Dynamic Assessment environment?”

The aim of this question is to map the nature of mediation that occurs in a DA environment.

Sub-question 1:

What are the implications of a Dynamic Assessment training session on mediation?

This question explores the efficacy of the DA training sessions in terms of instructors' knowledge of DA and the construct of mediation as viewed within an SCT. Mediators that participate in this study were required to attend a workshop that detailed the educational implications of DA, as well as the proper manner in which to mediate during assessment. DA training issues are particularly important as reflected in Erben, Ban and Summers (2008). Incomplete or improper understanding of DA leads to haphazard or partial implementation of DA procedures in a way that does not respect Vygotsky's conceptualization of cognitive development.

To this end, mediators worked with students in a DA setting both before and after DA training. Their interactions were recorded, transcribed and analyzed for emerging themes. It was expected that after participating in DA training that offers a theory informed and principled approach to mediation, mediators would interact with students in a manner that promotes cognitive development.

Sub-question 2:

What are the strategic behaviors that occur during Dynamic Assessment sessions and how do these behaviors vary for the different levels of language learner experience?

This question addresses the difference in tool use among mediators at differing levels of language experience. From my anecdotal experience as a university level French instructor, I have noticed that students in levels I and II tend to create flash cards, use mnemonic devices and practice speaking phrases to themselves more regularly than students in levels III and IV. Additionally, more advanced students seem to use their language more to ask questions and experiment (Cohen, 1990). While these observations are gleaned from years of classroom participation and observation, these specific behaviors have not been observed in testing situations. This is because the use of tools during tests is viewed as a threat to the traditional psychometric notions. Collaboration during assessments is generally reduced by class procedures and rules of non-interaction. In this study, these psychometric ideas were not embraced. In fact DA, and more generally socio-cultural theory, views collaboration as a productive phenomena and a necessary component of development.

In this study language experience was measured by the number of semesters that a student has taken French at the university and/or the level of attainment reached (score) on a department-wide placement test.

Sub-question 3:

How do learners and teachers externalize reciprocity of mediation, mediational sensitivity and mediational management?

Poehner (2005) defines the concept of learner reciprocity as the behaviors that are carried out by the student to manage the mediation. For

instance, a student can be unresponsive, or respond either correctly or incorrectly to a mediator's query. Erben (2001) also offers a definition of learner receptivity, labeling it as "the ability/willingness to engage with and appropriate tools and signs" (p. 409). Mediational sensitivity is defined as the ability to judge the purpose and quality of mediation offered, as well as act upon it. Lastly, mediational management is a student's or mediator's ability to deliberately direct the interaction in order to "achieve regulatory growth" (Erben, 2001 p. 409).

Additionally, Erben (2001) found that student-teachers who expressed a willingness to engage with the appropriate mediational means, who were able to direct mediation and who were able to make judgments about the quality of the mediation and the interaction reached higher levels of intersubjectivity. This is significant because he found high levels of intersubjectivity among individuals engaged in collaborative activities. In turn, these activities gave rise to learning opportunities. These opportunities were not found to exist in groups that failed to be mediationally sensitive to dialogic engagement. This made students unable to agree on the management of the structural properties and situational aspects of the task. In other words, they did not reach high levels of intersubjectivity.

In essence this question asks how students and mediators engaged in DA express their receptivity to mediation; how they strategically control the mediation that they receive; and how they make judgments about the quality and nature of the mediation that occurs during DA mediation sessions.

In the previous section the overarching question that drives this study is examined as well as the individual sub-questions that are designed to mediate understanding of the processes that occur in DA. Three sub-questions are proposed. Firstly, the effects of a DA training session on mediation was explored by sub-question 1. Sub-question 2 uncovered the mediational behaviors that occur at differing levels of language experience. How learners externalize reciprocity of mediation, mediational management and mediational sensitivity was investigated by the third sub-question. The next section focuses on why case study methodology was chosen for this study.

Case Study Approach

In order to determine the most appropriate methodology one must first determine what questions will guide the investigation of phenomena. Given the belief that language learning, language use and cognitive development are all social phenomena and at the same time highly individualized, this study adopts a case study approach. In order to investigate individual experience, Yin (2003) contends that case study methodology is best suited because it focuses on “individual, group, organizational, social, political, and related phenomena” (p.1). Bromley adds to this when he states case study is a “systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest” (1990, p. 302). The data is that collected and analyzed in case study research most often comes from observations, interviews and archived records (Stake, 1995).

The case study that will be undertaken by this research will consider multiple cases. Merriam (1997) calls this type of research comparative case study. A comparative case study permits the investigation of specific phenomenon while still allowing for the explication of the case (Stake, 1995). In this study the cases will consist of DA training sessions, as well as mediation sessions between the student and the mediator.

There is a marked difference in the way that some educational scientists view case study research. For instance, Yin (1994) suggests that research questions and goals should be planned out in advance. This is because he feels that case study literature is inadequate when compared with research from the quantitative tradition. Moreover, he believes that case study findings can be generalized when they are replicated and conducted in a rigorous fashion. Yin's approach leaves little room for the emergence of novel or unexpected phenomena.

On the other hand Merriam (1997) and Stake (1995) take a more naturalistic approach to case study. They believe in the viability of case study research, but not through repeated measures. Instead they argue, along with Janesick (2003), that research can be trustworthy when it contains various data sources that illustrate the attestations of the researcher. Also, when research is presented, it is not validated through repeated experimentation, but rather from the inclusion of data that is thick and rich enough to demonstrate why research conclusion were made.

The participants that were available and willing to work with the researcher established the boundaries of this proposed case study. That is, the student participants in the study were students of French as a Foreign Language at a large university in southwestern Florida. The mediator participants in this study were all instructors of French or instructors of ESOL at the same university.

The cases that were chosen for further investigation in this study were; 1) within the boundaries of this study and; 2) exemplified mediation that was thick and rich enough to warrant further study. For example the level four mediational session between Eloise and Ginger lasted approximately 37 minutes. It was therefore chosen to be included in the data set. However, the level four mediational session between Paul and Svetlana was only 12 minutes in length. It did not contain data that was thick and rich enough to be included in the study.

The data that was collected for this study came from three different sources; interviews, transcriptions of videotaped mediation and a researcher journal. The use of three data sources demonstrates the trustworthiness of research conclusions, as well as providing data that is both thick and rich.

The previous section details the appropriateness of the case study approach for this proposed study, different schools of thought concerning case studies, as well as the boundaries of this particular case including the type and scope of the data to be collected. The next section outlines the purpose of the study and then shifts to a discussion of the researcher.

Purpose of the study

The goal of this study is not to generalize to a larger and perhaps artificial population, but to explore the implications of DA training sessions on instruction, as well as to provide researchers with a working hypothesis that can be used to codify the regulatory behaviors manifested in the ZPD. This follows the ideas of Cronbach where he argued “when we give proper weight to the local conditions, any generalization is a working hypothesis, not a conclusion” (1975, p. 125). Moreover, this belief is echoed by Patton (2002) when he states that the goal of a qualitative researcher is to explore “perspective rather than truth, empirical assessment of local decision makers’ theories about the action generation and verification of universal theories, and context-bound extrapolations rather than generalizations” (p. 491).

The purpose of this study is to offer guidance in decision-making, about DA training and also to provide researchers with a taxonomy of behaviors that occurred during mediation. It is expected that the work of other researchers will continually refine this taxonomy. This study provides teachers and researchers alike with a snapshot of the strategic behaviors and activities that occur when two individuals are involved in joint problem solving and how these behaviors differ across levels of language experience. The idea of learner reciprocity was explored and the actions that correspond to mediational sensitivity and management were catalogued. The purpose of the classification and organization of these learner and mediator behaviors is threefold. First, there is no research on the effects of DA training in SLA

contexts. Second, the exploration of mediational difference across levels of development is an under-researched aspect of SCT. This study is poised to inform this area. Finally, the way in which learners and mediators interact in order to keep the mediation in motion also demands study.

The previous section detailed the research questions that guided this study, the case study approach that was used and the purpose of this study. The following section details the researcher as a tool, his role, his epoche and his teaching philosophy. Also, note that the following section is written in the first person. This was done purposefully to provide a more realistic account and appealing account of the researcher.

The Researcher

My professional beliefs about assessment and instruction underlie the approach of this study. As a teacher, I have always strived to be both compassionate and effective. To me, this means adjusting my classroom instruction to the individual needs of the students; even when assessment is taking place. The goal of my class is not to measure my students' achievement by assigning a numerical value to their work but rather to challenge them and to guide them in learning. That is not to say that a traditional representation of a student's progress is not important. In fact, it is critical to their success in the modern world. However, from a Vygotskian perspective grades do not necessarily reflect learning and almost certainly do not reflect the future success, or lack thereof, of an individual.

My socio-historical experiences as a teacher as well as my beliefs about teaching and learning have framed my embrace of socio-cultural theory and a concept that is theoretically rooted in it, namely Dynamic Assessment (DA). Even before I fully understood the concept of DA, I unwittingly used some of its procedures in my classes. For instance, I would work through quizzes with students or allow them to work in groups. For me, the most important aspect of this interaction was that students were mediated in their understanding of the classroom content, not that they were awarded a percentage grade based on the questions answered correctly.

The researcher as Tool

In qualitative methodology, the researcher cannot be separated from the research. In fact, he or she is the filter through which the investigation of the phenomena passes. His or her impressions and perceptions of events cannot be separated from the data interpretation. In fact, the social nature of human activity, when viewed from a Vygotskian conceptualization, demands that the researcher be considered in the research being conducted. Smagorinsky (1995) illustrates this point when he states “data are social constructs developed through the relationship of researcher, research participants, research context (including its historical antecedents), and the means of data collection” (p. 192). He goes on to state “data on human development are inherently social in nature” (p. 203) and therefore is it not possible to separate the researcher, or the instruments used in data collection from the lived experiences of the participants. To contend that one can

separate research in an SCT framework from the social milieu (or to control for an experimental situation) is to misinterpret Vygotskian inspired cognitive theory.

Reality is a nebulous concept. It is therefore futile to attempt to isolate and quantify human behavior. Ranter (1997) echoes this belief by asserting that human behavior does not exist as discrete units and therefore cannot be measured by comparative means. This makes reliability of assessments and replicability of studies, from a psychometric point of view, troublesome as the influence of the researcher cannot be removed from the study. These facts alone make the establishment of reliability (in a statistical sense) in case study methodology an impossibility. Merriam (1997) illustrates this by stating

what is being studied in education is assumed to be in flux, multifaceted, and highly contextual, because information gathered is a function of who gives it and how skilled the researcher is at getting it, and because the emergent design of a qualitative case study precludes a priori controls, achieving reliability in the traditional sense is not only fanciful but impossible (p. 206).

I am a faculty member at a mid-size Northeastern university. I am a Ph.D. candidate in an interdisciplinary program at a large Southeastern university. I have taught in both foreign language departments and in secondary education departments. My teaching experience began in 1999

when I began a M.A.T. program in Foreign Language Pedagogy. Throughout my studies I have taught various levels of French both as a teaching assistant and later as an adjunct professor. During both my undergraduate and graduate studies I have been fortunate enough to study in different francophone locales as well as to work for the French government. I am a native speaker of English, but also fluent in French.

The notions of learning and assessment that I hold are not traditional in the sense that they do not adhere to behaviorist or interactionist constructs. In fact I embrace a method of testing that many criticize for its lack of scientific rigor (Snow, 1990; Sternberg and Grigorenko, 2002). The belief that learning is a socially constructed event is rooted in my own personal epistemological stance on learning and is therefore reflected in the manner in which I view assessment. I believe the environment in which learning occurs is not merely a factor in development but the actual source of it. In fact, I feel that effective assessment and instruction, that have development as their goal, are inseparable.

The previous sections detail the purpose of the study and the researcher. It is important to discuss the researcher and his biases as one cannot separate the investigator from the research in qualitative studies (Merriam, 1997).

The Role of the Researcher

I was a participant-observer who served as the facilitator of the DA training workshop, and also made initial contact with the student participants.

I served an adjunct role in each mediational session as a technology troubleshooter and cameraman. As a participant observer, I kept a researcher journal. My presence affected the participants and the data collection. I was myself a data collection tool. The results of my data collection were mediated by my presence and I offers an emic perspective. That is, I share in the “life and activities of the setting under study.” (Patton 2002, pg. 268)

According to Smagorinsky (1995) it is impossible to separate a researcher and his instruments from the research experience. In fact, attempting to remove the researcher from a study does not respect Vygotsky’s understanding that knowledge is created socially and that every part of a social milieu in some degree influences the development of cognition.

My experiences as a teacher and a student in both the World Language Education (WLE) department and the Department of Secondary Education have allowed me to investigate the effects of DA training and the mediational strategies more fully. For instance, I have experience with the courseware system at the university, the method by which the listening assessments were facilitated. I understand the courseware’s strengths and weaknesses from both the student and teacher perspective. Moreover, I also understand the demands that are placed on teaching assistants in their respective departments. As a student, I understand the desire to show your appreciation to your mentors with quality language and research outcomes.

One could also argue that there were some disadvantages to being researcher-participant. Although I attempted to not participate directly in the mediation sessions, it was difficult to ignore questions that were directly asked of me. Another possible disadvantage was that I knew all of the mediators on a personal level. I also knew most of the student participants either as former students or as acquaintances.

Epoche of the Researcher

While it may be true that the process of drawing conclusions begins at the commencement of the data collection process, I have maintained epoche. According to Moustakas (1994) epoche is the process of becoming aware of ones own personal biases. This is done in order to “eliminate personal involvement with the subject material...or at least gaining clarity about preconceptions” (Patton, 2002, pg 485). My preconceptions concerning assessment, learning and development are outlined in the section entitled *role of the researcher* and the section entitled *teaching philosophy of the researcher*. In order to draw conclusions about the data in the this study I refered back to my field notes or worked with my colleagues to establish an intersubjective understanding of the research conclusions (Miles and Huerman, 1994). That is, once conclusion about the data had been made, they were confirmed by triangulation with the researcher’s journal and the use of an inter-rater.

The Teaching Philosophy of the Researcher

I believe both physical and psychological tools mediate the human mind. That is, humans do not directly act on the world around them. Instead, objects, symbols and signs mediate human activity. Language and its use is the most important tool that humans possess. The implications of this supposition are truly significant for language teaching. When viewed from this socio-cultural theoretical perspective, language is the primary revolutionary activity by which higher-order thinking skills are developed.

Learning occurs in a social milieu. This means that individuals learn through active engagement in social interaction with other individuals. My classes reflect this belief. Therefore, I engages students in dialogic interaction through student lead debates, presentations and projects.

In the previous section the researcher as a tool, the role of the researcher and the teaching philosophy of the researcher are outlined. In the following section the genesis of the research questions is detailed.

Genesis of the Research Questions

In this section I will discuss the socio-historical background of this study. That is to say, I will discuss the genesis of the research questions and my epistemological lens through which I view learning, development and research. The research questions that guide this study were framed by my experience as a novice researcher in collaboration with mentors and colleagues, as well as my experience as a teacher of French as a second language. You will also notice that I have chosen to use the first person in

this section. This was done purposely in order to reflect a realistic, personal experience.

Though I may not have always been able to articulate my thoughts on assessment as well as I can at the present, I recall feeling that standardized tests were unfair. This is partly because they cause me a great amount of angst. The stakes for their successful completion are high (admission to graduate school, completion of a course of study, etc). One's academic success rests on the completion of a series of questions that provides little insight into one's intelligence (particularly as it is viewed from a Vygotskian perspective) and no reflection on adaptability or the ability to see a project to completion. It is for these reasons that DA has a great appeal to me.

I first heard about DA at the 2004 Socio-Cultural Theory conference that was held at the University of South Florida. I remember being excited about an approach to testing that eschewed the notions of validity and reliability being threatened by collaboration. Unfortunately I knew very little about Vygotskian cognitive psychology; the theoretical underpinnings of DA. Therefore I set myself about mastering SCT. However, this process was slow. The prevailing Western understanding of development is that it precedes learning. In SCT the contrary is true. For those of us educated in a traditional or conservative western educational system the fundamental understandings of the social genesis of learning are very different. It is for this reason that the evolution of Westerners' understanding of SCT (and in turn DA) is often a slow process Kinginger (2001).

After having taken a class on SCT, reading all that I could digest on the subject and speaking through the project with my mentors, I prepared a presentation on DA and presented at the 2005 SCT conference. It was there that I received invaluable feedback from people that I consider leaders in the field. They spoke to me about possible avenues to explore and works that I should read.

After implementing their suggestions and again working with my mentors, I presented my project at the 2006 SCT conference. The project that I presented there was much more conceptually developed and the advice that I received was therefore much more fine-tuned. Shortly thereafter, I completed my proposal and its successful defense. Again I was lucky enough to receive tremendous support and feedback from my mentors. Despite all of the suggestions and support of my colleagues this project is still evolving. In fact, I believe that it will continue to evolve even after I have completed the dissertation.

I agree with the idea that a person's independent performance is nothing more than a snapshot of their present abilities. It has little bearing on their future. Instead I believe that the way that a person learns is through dialogic engagement with another human. A person's independent problem abilities are meaningless unless they take into account the person's responsiveness to mediation.

My experience as a teacher has shown me from a practical side that assessment, whether it be portfolio based, standardized or computer

mediated, does not always accurately describe students. There are many examples in my professional life from which to draw, however one specific event stands out in my mind. When I was completing my M.A.T., I was a teaching assistance of French. As a requirement of taking any language class, students took a placement exam and were advised to take the level class recommended by the testing administrator. After the first week of class, it was apparent to me that one student, who had been advised to take my second semester class, did not have sufficient mastery of the language to be in that level. After having spoken with the student, it became clear that she was not going to change levels. She felt that because she fell in the score range that was classified as second semester, she deserved to be in a second semester class. She remained in the class and in the end failed. Her score was not reflective of her French language background, and it was only through one-on-one interaction (albeit one week's worth) was I able to determine her true French language background.

My understanding of SCT, DA and my own underlying feelings concerning assessment serve as a conceptual frame to this study. In my own learning and mediational processes, I began to learn how human behavior mediates development. The questions that came from my reading and dialogic engagement with my colleagues and mentors serve to inform SCT and DA.

Academic Context of the Study

Students participants in this study were enrolled in the World Language Education (WLE) department at a large university in the Southeastern United States. This university has an enrollment of approximately 45,000 students spread across four campuses. The WLE has an enrollment of approximately 150 students of French as a foreign language each semester. These students are enrolled in many different degree programs. The WLE offers both a bachelor's degree in French language and civilization as well as a Master's degree in French literature. More generally, there is either a two or three semester language requirement, depending on degree program, that students are obliged to take. The aim of the WLE, as outlined by their mission statement, is to

to engage in the study of human language in general, and in certain ancient and modern languages in particular order to provide both a humanistic and scientific perspective on this most distinguishing of all human abilities. To foster an increase in international and diverse cultural and aesthetic awareness, and to provide opportunities for the enhancement of practical communication across linguistic and cultural boundaries.

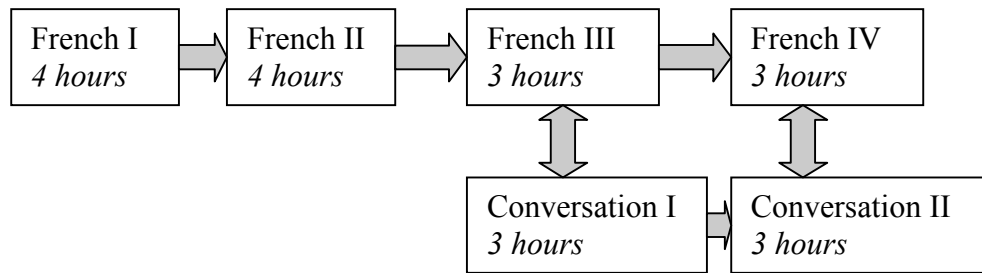
Generally, undergraduate classes are taught by teaching assistants who already have or are in the process of completing a Master's degree. This is especially true of French I and II classes. Teaching assistants come from a

variety of linguistic and cultural backgrounds. Some are native speakers of French, albeit from different francophone regions. However, the majority of teaching assistants are native speakers of English who possess native or near native like French language skills.

Just as instructors come from a wide variety of linguistic and cultural backgrounds, so too do students. While most students are native speakers of English, being located in a major metropolitan area, the university attracts large numbers of immigrants. The Hispanic population in the area is quite large. Therefore many students come to class with advanced to rudimentary notions of Spanish. This type of language experience has been shown to positively affect second language acquisition (Naiman, 1978).

French I and II meet five hours per week; four hours in a classroom setting and one hour in a language laboratory. After the second semester of French, students who continue taking French language classes are required to take the intermediate grammar class, but can also opt for a conversation class. After the third semester of classes, students can take a second conversation class, a composition class or an introductory literature class. All of these classes, offered during the third and fourth semester of study in the WLE, meet for three hours each week. This system of classes is exemplified in figure 10.

Figure 10. Sequence of beginning and intermediate French classes in the WLE



Students with previous French language experience, whether attained at a different university or during high school, take a placement test when they enter the WLE. It is used to determine the appropriate level at which to slot students. The exam includes listening, multiple-choice, and grammar-based questions.

Student Participants

The student participants in this study were undergraduate students enrolled at the previously mentioned university. No special attention was given to students' academic majors, as students enrolled in the first four semesters of French come from a range of degree programs. Students take these classes for a variety of reasons. For some, these classes are requirements of their program of studies. For others they are interested in becoming fluent in French.

The data for this study was collected in French I, II, III and IV classes offered at the WLE during the spring 2007 session. Recruiting study participants from these classes allowed learners possessing differing proficiency levels to be included in the investigation. It is not uncommon for native speaking or students with near native-like proficiency to take the third

and fourth semester classes. Therefore, student participants ranged from complete beginner to native or native-like in terms of proficiency.

In order to recruit student participants the researcher visited various classes in the WLE. In his visits, he distributed an open letter to students that described the study as well as the benefits to the student participants. The letter contained the researcher's contact information. In turn, interested students contacted the researcher and research appointments were negotiated. When there was difficulty recruiting students, the researcher asked instructors to identify potential student participants and ask them to participate.

Mediator Participants

The mediator participants in this study were graduate teaching assistants, either native speakers (NS) or non-native speakers (NNS) of French at the same university. All have experience teaching French as a foreign language to university students. None of the mediators were teaching classes that contained any of the student participants in this study. However, it is possible that the mediators and students knew one another either as a former teacher or students, or on a social basis.

The researcher in this study is an insider in the WLE. He offers an insider's view (Patton, 2002) of the study setting. He taught classes in this language department for the last four years. His position as the department's language lab director offered him the opportunity to work with many of these instructors as a technology mentor. That is, he has conducted various

workshops designed to assist teaching assistants in the WLE successfully integrate technology in their classes. Therefore, recruiting four mediators willing to participate, or agree to spend the hours needed to understand the theoretical underpinnings of DA and successfully mediate students did not pose any difficulty. However, as the study progressed one of the mediators chose to withdrawal from the study. She did so because participating in this study adversely affected the amount of time that she was able to spend on her own research.

Mediator Biographies

Arlene

Arlene is a French national who has lived in the United States for the last twelve years. She is a native speaker of French and is a fluent speaker of English. She has extensive teaching experience of French as a foreign language, foreign language teaching methods and English as a Second Language teaching methods. She is currently a PhD candidate in Second Language Acquisition and Instructional Technology and a visiting assistant professor of English as a Second Language at the same university where this study was conducted.

Eloise

Eloise is a British national. She is a native speaker of English and is a fluent speaker of French, Italian and Turkish. She has extensive teaching experience of French as a foreign language, and English as a Second Language teaching methods. She has taught for the British Council for the

past twenty years, where she oversaw novice teacher formation. She is currently a PhD candidate in Second Language Acquisition and Instructional Technology.

Paul

Paul is also a French national. He has lived in the United States for 10 years. He is a native speaker of French and is a fluent speaker of English. He has extensive teaching experience of French as a foreign language in both face-to-face and distance environments. He is currently a PhD candidate in Second Language Acquisition and Instructional Technology and a French language lecturer at a small liberal arts university in the same city where the research for this study took place.

Vanessa

Vanessa is an American national. She is a native speaker of English and is a fluent speaker of French. She has extensive teaching experience of French as a foreign language, foreign language teaching methods and English as a Second Language teaching methods. She is currently a PhD candidate in Second Language Acquisition and Instructional Technology.

Relationship of the Researcher to the Mediators

The researcher knows every one of the mediators both on a professional and on a social basis. That is to say, he has taught with each of the mediators in either the College of Arts and Sciences or in the College of Education where this study was conducted. Moreover, he has been in social situations with each of the mediators. These social situations range from

departmental Christmas parties to dinners at each other's homes. Also he considers both Eloise and Paul to be close personal friends. The researcher shared office space at the university with both Eloise and Paul. They frequently took classes together and worked collaboratively on academic projects.

The researcher also served as a sort of technology mentor of Arlene, Eloise and Paul. The researcher and Arlene have co-taught a technology class together, with the researcher being the lead instructor. The researcher also offered Eloise and Paul technological guidance for the classes they taught in the language department.

In the previous section the academic context and the study participants, including the students and mediators were described as well as the researcher's relationship to the mediators. In the following sections data collection methodology, and a research time line are detailed. Special attention is paid to what type of research documents will be collected; video-taped and transcribed DA training and mediation sessions, interviews with students and mediators as well as a researcher journal.

Method

In order to determine the effect of DA training on instruction, as well as how certain tools, such as verbalized language and cultural artifacts mediate language learning the present study began in the Spring 2007 semester. Students and mediators were asked to meet independent of their regular class meetings. Four mediator participants and 13 student participants were

recruited for this study. These numbers allowed for each mediator (except for Vanessa who withdrew from the study) to work with four students. Each student represented each of the four language experience levels. Each mediator was assigned one student from each class; French I – IV.

Case study research methodology was adopted in this context. These data were constructed through video transcription, interviews and a research journal. Four different cases (DA mediation sessions) were examined through comparative case research (Merriam, 1997). These cases were chosen in consultation with the researcher's mentors. It was decided that due to the similarities of strategic behaviors in the all of the language experience levels, only the strategic behaviors at the first and fourth levels would be detailed. It was also decided, again with the guidance of the researcher's mentors, that only 2 cases at each language experience level would be investigated. This was due to the quantity and quality of the data collected. The investigation of 2 cases per language experience level provided data that was thick and rich, and provided a reasonable level of data saturation (Miles and Huberman, 1994). Figure 11 illustrates the way in which each data collection tool connects with each research question.

Figure 11. Data collection tools and research questions

Data collection tools	Research questions
<ul style="list-style-type: none"> • Video-taped DA training sessions/video taped mediation sessions • Interviews • Researcher journal 	What are the implications of a DA training session on mediation?
<ul style="list-style-type: none"> • Video-taped mediation sessions • Interviews • Researcher journal 	What are the strategic behaviors that occur during DA sessions and how do these behaviors vary for the different levels of language learner experience?
<ul style="list-style-type: none"> • Video-taped mediation sessions • Interviews • Researcher journal 	How do learners and teachers externalize reciprocity of mediation, mediational sensitivity and mediational management?

The research project began in February. Mediators were trained in DA methods and were presented with its theoretical underpinnings. Mediators were given the opportunity to work through actual dynamic assessments. Student participants and expert mediators were paired up and asked to work through a level appropriate listening DA. Mediation was delivered following *cake* metaphor of DA² (Sternberg and Grigorenko, 2002). That is, students worked through the assessment with a mediator question by question. Interviews with students and mediators were also conducted in order to determine what tools mediate cognitive development within the DA sessions. An overview of this research timeline is shown below.

² Sternberg and Grigorenko (2002) provide two metaphors that can be used to describe the intervention that occurs in DA; sandwich and cake. The sandwich metaphor describes interaction that occurs between a pretest and posttest. The cake metaphor describes interaction that occurs directly after a learner has attempted a question. For a more detailed explanation of these two metaphors see chapter 2.

Figure 12. Research timeline

February		February, March and April	April and May	
DA Training		Mediation	Interviews	
Two four-five hour sessions	Individual reflective sessions	Four mediational sessions (representing the four levels of language experience) per mediator	Mediators	Students
			Focus group	Focus group
			Individual	Individual
Researcher Journal				

DA Training

The DA training sessions were working meetings that bridged theory to practice. While it was initially schedule for a three to four hour block of time, it took much longer³. There are several possible reasons for this. Perhaps the researcher misunderstood the participants’ understanding of SCT or maybe he underestimated the time needed for such training.

During the DA training, special attention was paid to the practical aspects of administering the assessments. This was done through different case study and mediational creation activities. Also, the mediators watched and discussed video taped mediational sessions that were given to the researcher by his colleagues at the Center for Advanced Language Proficiency Education (CALPER) housed at Penn State. Participants were given the opportunity to work through a DA with the researcher in the study acting as the mediator and guiding the intervention. This practical experience in administering DA was expanded by giving the mediators the opportunity to mediate with a practice student before and after the training. The mediational

³ Initially a lesser training experience was envisioned, however it became apparent during the course of the training that one session was not sufficient. The evolution of the DA training session is outlined in chapter 4.

opportunity before the training was done in order to answer the first research question dealing with the effects of training on mediation. Mediators also mediated students after having completed the training.

Additionally, mediators were given the chance to become familiar with the assessments that they administered to students. That is each mediator was given the written transcript of the listening texts, as well as questions and correct answers that corresponded to each passage.

Pre- and Post-Training Mediation

Before the training began, mediators were paired with a student so that they might practice mediation before having received any training. This was done in order to investigate the effects of the DA training. After the training, participants were again paired with practice students. It is important to note that the neither the before or after practice students were involved in the actual DA mediation sessions.

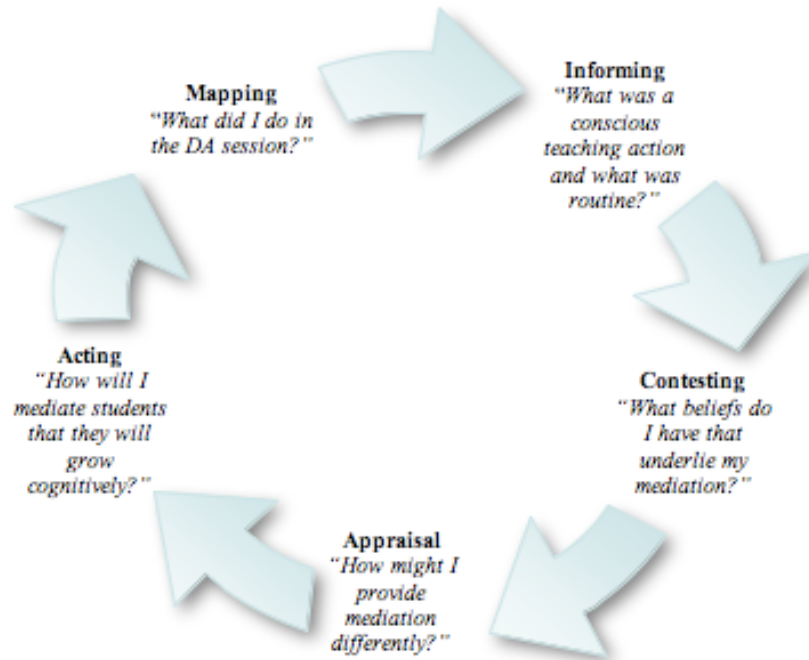
Reflection on Mediation

After the post training mediation, mediators were asked to reflectively examine their mediation sessions using Bartlett's (1990) model of reflective teaching. This five-step model is designed to facilitate reflective teaching. It begins with an examination of teaching behaviors, the ideas underpinning these behaviors, and the formulation of different methods of teaching. Just as Bartlett (1990) cautions, this reflective system does not end with the acting phase. He states "acting is listed here chronologically as the last phase in the process leading to reflective teaching, but it is not the final phase" (p. 213).

Instead the process feeds back into itself. It starts over again and continues to refine teaching behaviors. The following chart details Bartlett's reflective circle and the example questions that will be used to guide the mediators through the reflective process.

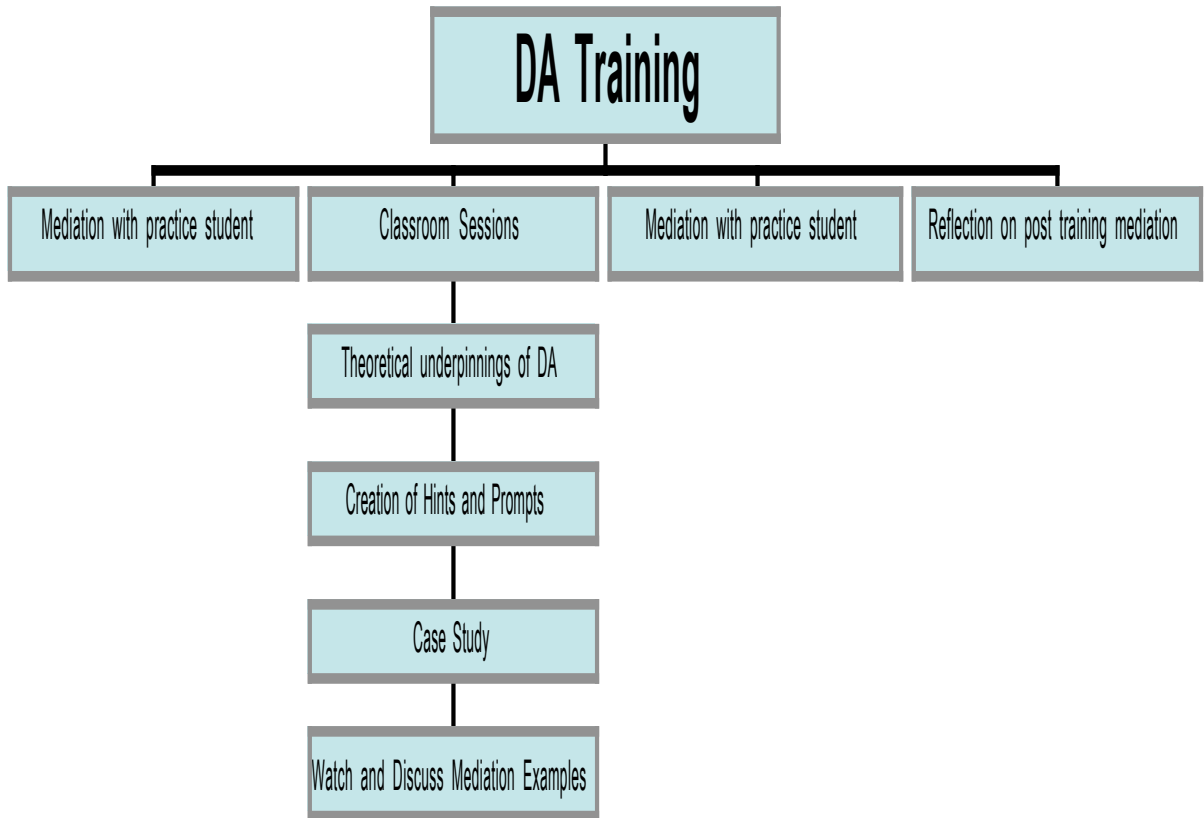
For instance, *mapping*, the first step in Bartlett's elements of reflective teaching, was accomplished by video-taping mediation sessions. This facilitated reflection as mediators were able to see concrete examples of their mediational behaviors. The next step of Bartlett's reflective teaching model is *informing*. In this phase mediators revisited their mediation and decided what was a conscious teaching action and what was routine. The third phase is *contesting* and uncovers beliefs that underpin a teacher's actions. The contesting phase was initially to be done in groups. Mediators were going to work together to examine why they mediated a student in a certain manner. However, the teaching and research schedules of all of the mediator participants did not permit group contesting. Fourth, in the *appraisal* phase, mediators examined their teaching practices for different way of approaching a situation. The last step is entitled *acting*. Here mediators reformulated their mediation with the goal of making it more suited to the promotion of cognitive growth within the student. The elements of reflective mediation are shown in figure 13.

Figure 13. Elements of reflective mediation



Keep in mind that mediators worked with students both before and after the DA training session. After the DA training session it was expected that mediators would possess a heightened sense of proper mediation as well as the manner in which it should be delivered to students. An outline of the DA training is located in appendix B and a chart that graphically represents its stages is shown in the following figure.

Figure 14. Graphic representation of DA training

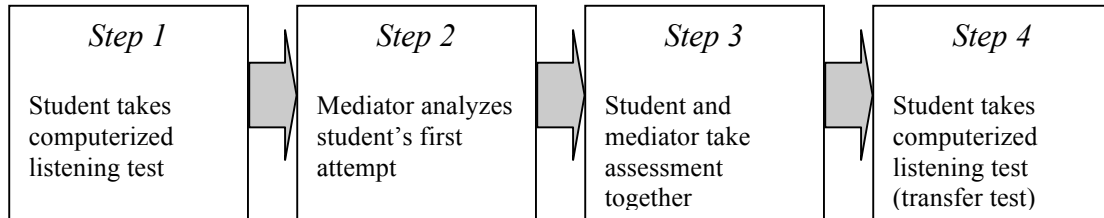


Mediational Experiences

The intervention in the DA sessions (after the DA training workshop) followed the *cake* model as proposed by Sternberg and Grigorenko (2002). Initially, students took the assessment without assistance. Next they worked through the assessment, but this time with assistance provided by the mediator. That is to say, they work question by question with the mediator. The student did not know if they got the answer right or not. Students completed the DA experiences by taking a posttest based on the same types of structures (but not the same questions) that were presented in the previous

assessment. The manner in which the assessments were administered is detailed in figure 15.

Figure 15. Steps in DA Sessions

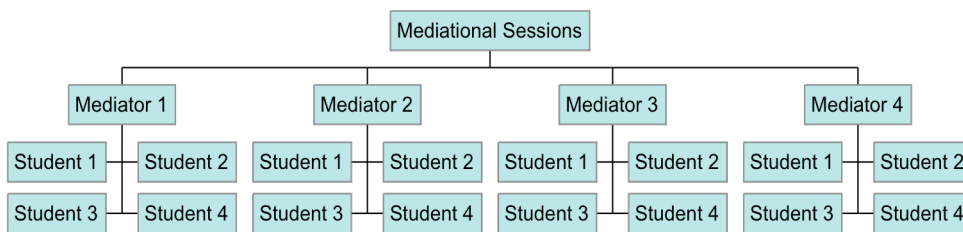


The assessments that were administered in this study were based on texts and ancillary materials that have been chosen as the curriculum of the respective first, second, third and fourth semester French classes. Listening passages will be taken from class materials and if needed questions will be developed by the researcher. In turn these passages and the questions that accompany them, were converted to an electronic format.

The first step in the DA session was the student working alone through the computerized assessment. The distribution of the assessment was facilitated via Blackboard, a courseware system in place at the university where the study was conducted. The second step in the DA sessions was the mediator's analysis of the student's performance on the assessment. It was hoped this analysis would allow the mediators to draw on their teacher knowledge and experience to formulate an informal action plan that would guide mediation during the third phase of the DA session. In the third step, the student and the mediator worked in dialogic union with the aim of completing the assignment. The fourth and final step of the mediation session was for the student to take a transfer test or a test that contains the

same structures that were included in the first test. This is done because of Feuerstein’s (1988) insistence on transcendence as an integral part of the MLE. These four steps were all completed on the same day. Each student was mediated only once. That is, each mediator mediated a total of four students; one for each language experience level. A graphic representation of the relationship of mediators and students is shown in the following figure. Keep in mind that student one, is at the first level of language experience. Student two is at the second level of language experience. Student three is at the third level of language experience and student four is at the fourth level of language experience.

Figure 16. Relationship of mediators and students



Blackboard as a Facilitator of Assessments

A feature of blackboard is the electronic distribution of documents, including assessments. Any student who is enrolled at this university has a Blackboard account; as does any instructor. Based on the researcher’s personal experience with testing features within Blackboard, he feels that students are generally positive concerning testing feedback, grading and administration issues. Anecdotally, he feels that they appreciate the fact they do not have to wait for a grade to be calculated. Their scores are displayed

immediately after they have completed the exam and their answers have been submitted. Responses of instructors, with whom the researcher have worked, have been similarly positive. They tend to appreciate the ability of the courseware to provide students with immediate feedback and the way in which multimedia materials can be embedded into the assessment itself.

Every aspect of the DA sessions was video recorded. These video recordings captured the various semiotic tools that mediate student learning in the ZPD. Four of these video recording were analyzed using thematic analysis (Boyatzis, 1998). NVIVO, qualitative analysis software that facilitated the study and the thematic analysis of the data.

Student and Mediator Interviews

Interviews with students and mediators were conducted. It was initially planned that focus groups with both populations would take place took place and the results of these focus groups would lead to one-on-one interviews. However, this proved impossible with the students. Due to mediator and student class obligations and teaching constraints, mediational sessions did not end until finals week of the Fall 2007 semester. The researcher tried to hold a focus group with students, but was unable to find a date to that was convenient to participants. He was therefore forced to abandon the idea of having a focus group and instead held individual interviews with three of the 13 students that participated. Three interviews were conducted, because these were the only students that were willing to meet during summer vacation.

However, the researcher was able to conduct a focus group with the mediators. The results of this focus group lead to individual interviews with each mediator.

All of these interviews were semi-structured. That is, they consisted of a predetermined set of questions, but left room for unanticipated interviewing opportunities. Patton (2002) calls this the "interview guide approach" (pg. 349). The purpose of these interviews was to provide an opportunity to the study participants to discuss their conceptualizations of successful mediational behaviors that occurred during the study, and also the implications of DA training and its effect on their mediation. Moreover, these interviews provided the researcher with an opportunity to member check.

Transcription of the Video Data

The transcription of the video data was done in two different phases. First the audio was stripped from the video, and converted to a .mp3 format. These .mp3 files were archived on the researcher's computer and transcribed, word for word, by the researcher. To facilitate this process a transcription foot pedal and speech recognition software was used. It is important to note that the speech recognition software did not analyze the mediators' and students' speech. Instead the researcher trained the software to recognize his speech. In turn he listened to the .mp3 files and dictated the spoken data. The software then transformed his speech into text.

After having completed the audio transcription, the researcher watched the video data and catalogued the use of gesture. The cataloguing of

gestures was facilitated by McCafferty's gesture classification scheme. This scheme is shown in the following figure.

Figure 17. Classification of gestures

Gesture type	Gesture use	Example of Gesture
Iconic	Represent movement	Moving hands up and down to signify the rocking motion of a boat
Metaphoric	Represent an idea or thought	Point to your temple and making a circular motion to indicate that a person or idea is crazy
Beats	Emphasize part of a conversation that a speaker finds important	Snapping a pattern to indicate a sequence of events
Cohesive	Bridges two thoughts together	Intertwining of fingers to show the interrelatedness of two concepts
Deictic	Draw attention to a specific item in the discourse	Point to a speaker and indicate that a specific action happened to that individual
Emblematic	Represents an idea or thought, the type of gesture with which most people are familiar	Rubbing together of the thumb and index finger to indicate that something is expensive

Researcher Journal

Throughout this study the researcher kept a diary of his experiences conducting the research. This journal chronicled his understanding of the mediational processes that occurred during the training session as well as during the student and mediator DA sessions. He used it to describe his

thoughts and reflections on every interaction that he had with the mediators and with the students. Moreover, it served as a tool to mediate his personal conceptualization of his role as a researcher. Last it provided an important method to triangulate the data that was obtained during the DA training sessions and the DA mediation sessions.

In the researcher's journal particular attention was paid to: 1) the atmosphere of the training or mediational session and interviews; 2) the salient issues that occurred during the DA training sessions, the mediational sessions and the interviews; 3) the role of the researcher in the collection of the data and as a facilitator in the study. The data collected in the researcher's journal helped the researcher recall what took place during the training and mediational sessions as well as in the interviews.

The researcher journal was analyzed using thematic analysis (Boyatzis, 1998). The themes that emerged from this analysis are detailed in chapter four and discussed in chapter 5.

In the previous section the data collection method, a research timeline, the structure of the DA training sessions and the DA sessions between students and mediators was examined. The harvesting of data through video-taped interactions, interviews and a researcher journal was set forth. In the next section, the type of DA that was administered to the students will be explained as well as the method of data analysis that will be used to examine the data.

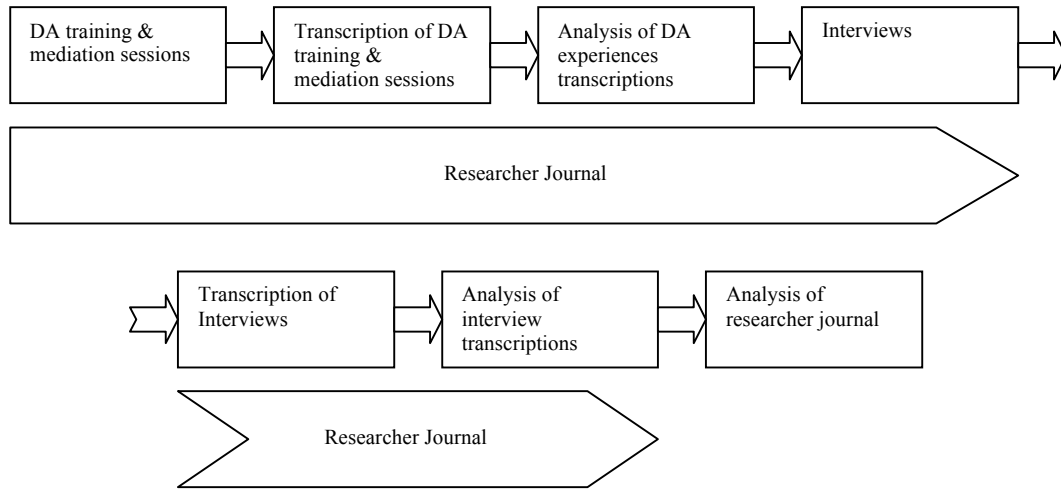
Data Analysis

Transcripts from the video taped DA training session, the actual DA session and the interviews, as well as the researcher journal, served as research documents for this study. The purpose of collecting these documents is to mediate the researcher's understanding of the regulatory behaviors that occur during mediation in DA contexts. When one wishes to extract data from research documents, the first decision that must be made is the method by which the data gleaned will be analyzed. For clarity, figure 18 lists the research questions, the data that was collected, and the method of data analysis. Also, in order to further explicate the data collection and analysis, figure 19, data analysis and collection sequence is provided below.

Figure 18. Research questions, data to be collected and analysis

Overarching Question:		
How does the use of semiotic tools mediate language learning in a DA environment?		
Sub-questions:	Data	Analysis
What are the implications of a DA training session on mediation?	Video-taped DA training, video-taped mediation sessions, interviews, researcher journal	Transcription, analysis for emerging themes (thematic analysis)
What are the strategic behaviors that occur during DA sessions and how do these behaviors vary for the different levels of language learner experience?	Video-taped mediation sessions, interviews, researcher journal	Transcription, analysis for strategic behaviors (thematic analysis)
How do learners and teachers externalize reciprocity of mediation, mediational sensitivity and mediational management?	Video-taped mediation sessions, interviews, researcher journal	Transcription, analysis for strategic behaviors (thematic analysis)

Figure 19. Data collection and analysis sequence



Thematic Analysis

According to Boyatzis (1998), thematic analysis is a method of recognizing patterns and themes of a specific phenomenon. Within thematic analysis, a theme is “a pattern found in the information that at a minimum describes and organizes the possible observations and at a maximum interprets aspects of the phenomenon” (Boyatzis 1998, pg. 4). Boyatzis (1998) posits that there are several purposes of thematic analysis. However, only the ones that are pertinent to this study will be discussed here. For instance, thematic analysis can be used to analyze qualitative information. Also, it can be used to systematically observe a person, a group of people or interpersonal interactions. In this study it was used to make sense of the data that was gathered from individual and group interactions during DA mediation and training, as well as data from individual and group interviews.

Within thematic analysis, there are two types of analysis; inductive and deductive. In the inductive method the researcher codes the data “without

trying to fit it into a preexisting coding frame, or the researcher’s preconceptions” (Braun and Clarke 2006, pg. 83). On the other hand, deductive thematic analysis is “driven by the researcher’s theoretical or analytic interest in the area and is thus more explicitly analyst-driven” (Braun and Clarke 2006, pg. 84). In this study the inductive method of thematic analysis was used. This is because the view that the researcher in this study holds of the ZPD is one of a non-quantifiable descriptor and not as a heuristic. Therefore, using a pre-determined set of codes of strategic behaviors, as might be done in deductive thematic analysis, would not be commensurate with his conceptualization of cognitive development.

Boyatzis (1998) outlines five steps that guide inductive thematic analysis. Notice that the last step in thematic analysis determines the reliability of the code by comparing data to determine statistical significance. This study therefore modifies Boyatzis’ model of thematic analysis and does not include the step that uses statistical measures. For clarity’s sake the five steps of thematic analysis are detailed in the following chart.

Figure 20. Steps of thematic analysis

Reducing the raw information
Identifying Themes within sub-samples
Comparing themes across sub-samples
Creating a Code
Determining the reliability of the code

The researcher in the reducing the raw information phase immerses themselves in the data in order internalize it as much as possible. In Boyatzis’ words an integral part of the reduction phase is to “bring it (the data)

into conscious functioning and at least medium-term memory” (1998 pg. 69). Once this is done the researcher is able to produce a shorter outline form of the data on a case-by-case basis. This can in turn be used for making across case comparisons.

Once the researcher has reduced the raw data and created outlines, then themes can be identified in sub-samples. After having immersed themselves in the data, researchers can more easily perceive themes in the outlines that were created in the reduction stage. One should not be concerned with a detailed and precise description of the theme at this stage of inductive thematic analysis, but instead be cognizant of “any glimmer of themes or patterns” (Boyatzis 1998, pg 86) in the cases.

After the researcher has “exhausted the potential themes within each subset” or case, (Boyatzis 1998, pg 87) comparison of themes across cases begins. This is done by examining the themes contained in the outlines of the separate cases and comparing them across cases. Themes are revised and made more precise by returning to original data in the individual cases. Out of this entire process one set of themes that are present across cases is created.

After the themes are compared across cases, they are rewritten in order to increase clarity and provide the simplest explanation of a case. The rewritten themes then provide the researcher with a code. In turn the code has four parts; the label or the code itself, the definition of the code, indicators

of the code (quotations that illustrate the meaning of the code) and differentiation or the specific cases in which the code is or is not found.

In the final step of thematic analysis the reliability of the code is determined. That is, are the themes that emerged in the qualitative coding found in significantly different populations or not. This step assumes that the goal of thematic analysis conducted in this study is the comparison of different populations. It is not. In fact, the goal of the thematic analysis in this study is the classification of student and mediator behaviors and not the comparison of the behaviors across different populations. This is keeping with the ideas of Feuerstein et al. (1979) where he asserts that the goal of DA is not to generalize to a larger and perhaps artificial population, but instead to provide a more complete picture of an individual's unique developmental evolution.

Generalizability

It is important to realize that case study is not the investigation of a representative group in order to generalize findings. In fact, research that is concerned with generalizability, that is empirical studies, sometimes hide striking details that are central to the understanding of an event (Merriam, 1997). However, that is not to say that case study research is without viability. Indeed Stake (1995), Yin (2003) and Feagin, Orum, & Sjoberg (1991) have all established methods for ensuring the accuracy of the data reported; this procedure is called triangulation. Triangulation is accomplished by comparing various sources of data. It is a method of corroborating a

person's perceptions, not a way of ascertaining if a person's perceptions are accurate or not.

A favored point of contention among critics of case study research is that it does not produce findings that can be generalized to a larger population. However, according to Stake (1995) this is not the goal of case study research. Indeed he states "Case study seems a poor basis for generalization" (p.7). He goes on to add,

The real business of case study is particularization, not generalization. We take a particular case and come to know it well, not primarily as to how it is different from others but what it is; what it does. There is an emphasis on uniqueness and that implies knowledge of others that the case is different from, but the first emphasis is on understanding the case itself (p. 8).

Case study methodology is particularly suited to this study. The researcher is not interested in producing study results that can be applied to a larger population. Instead he is interested in investigating DA training and uncovering the mediational processes that occur between student and mediator dyads. His belief that the ZPD varies from individual to individual requires a case study approach to data collection and analysis. In fact, the underlying beliefs as set forth in SCT and DA reject the binary interpretation of data. Following the ideas of Smagorinsky (1995), the researcher believes that when one tries to control for research effects by minimizing the role of the researcher or research tools, the primary tenant of SCT is abandoned;

namely the belief that cognitive development is created in the interpsychological realm.

The previous section outlined the case study approach and the reasons why this approach has been adopted for this study. Particular attention is given to the ideas of individualism, generalizability and trustworthiness. This last issue, trustworthiness, will be discussed in more detail in the following section.

Trustworthiness

The goal of this section is to illustrate the concept of trustworthiness and show what steps will be taken in order to ensure the integrity of the study. In particular the concept of triangulation will be discussed and how it will be implemented in this research.

Just as reliability and validity are important concepts in traditional statistical research they are equally important in qualitative research and more specifically case study (Merriam, 1997). The ability to trust research is of paramount importance. Before recommendations based on research can be implemented their trustworthiness must be investigated. In this instance trustworthiness can be defined as the ability to establish reliable and valid results (Janesick, 2003). The way in which trustworthiness is illustrated in a qualitative study is by providing a description rich enough to allow the reader to draw the same conclusion at which the researcher logically arrived (Firestone, 1987).

According to Merriam (1997) there are two subdivisions of validity; internal validity and external validity. In internal validity the researcher is concerned with whether or not what is being measured is an accurate reflection of the reality of the situation being investigated. The researcher in this study believes that there are indeed multiple realities. That is, the way in which individuals conceptualize their surroundings is unique. In fact, Merriam (1997) believes that the existence of multiple realities is an assumption that underlies qualitative research

Six different strategies have been proposed by Merriam (1997) in order for a study to be trustworthy and are shown in figure 22.

Figure 21. Strategies to illustrate study trustworthiness
Merriam (1997)

1. triangulation,
2. member checks,
3. long term observation,
4. peer examination,
5. collaborative research,
6. clarification of researcher's biases

Triangulation is probably the best known of the strategies, and involves using multiple data sources in order to gain a more comprehensive understanding of the case (Patton, 2002). There are four separate types of triangulation; data triangulation or the combination of different data types, investigator triangulation or the collaboration of different researcher insights

into order to provide a more holistic interpretation of the situation, theoretical triangulation or the combination of different theoretical paradigms, and lastly methodological triangulation or the combination of different methodologies (Denzin, 1970).

In the present the study, trustworthiness was ensured by the use of data triangulation and investigator triangulation (the use of an inter-rater during the data coding and analysis). The researcher has decided that the remaining two types of triangulation are not appropriate for use in this study. Mediation sessions between students and mediators were videotaped. These recordings were transcribed and analyzed for pertinent mediational behaviors, movement in students' regulatory schemes, situational definition, and negotiation of intersubjectivity. Moreover, these transcriptions were supplemented with the researcher's field notes, as well as interviews with student participants and the teacher mediators.

Moreover, member checking was utilized throughout the study by comparing the researcher's interpretation of the data with the conceptualization of the event as described by the participants.

The researcher's biases are seen as a strength rather than as a liability. His belief that the human mind is mediated by social interaction is very much in keeping with the core beliefs of Vygotsky. Furthermore, the epistemological stance of the researcher in this study meshes well with the belief that there are indeed multiple realities. Moreover, the fact that the ZPD was never meant to be used as a heuristic (Minick, 1987) eschews

quantitative methodology. Statistical rhetoric, which is based on normative groups and the generalizability of results is not compatible with the investigation of the individual; as is necessary when working within a SCT paradigm.

External validity examines the possibility that a study can be duplicated given similar circumstances. This is otherwise known as generalizability. However, case study methodology does not lend itself to the ability to generalize to larger populations. In fact, Merriam feels “an investigator can go too far in controlling for factors that might influence outcomes, with the results that findings can be generalized only to other highly controlled, largely artificial situations” (1997 p. 207). This type of generalization is hardly useful when conducting research within a SCT framework, as mediation that occurs in the ZPD is highly individualized and occurs in naturalistic settings.

To enhance external validity researchers should provide a description that is both thick and rich. That is, they should provide a description of the participants, the situation and other contextual factors that is explicit enough to allow for critical analysis. This study will provide for external validity by offering thick and rich description of the research context and participants through video-taped mediation sessions, researcher journals and interviews with both the student and teacher participants.

In the previous section the idea of trustworthiness was explored. Using the six steps, outlined by Merriam (1997), this study ensured that the

phenomena reported by this study will be supported by the research data collected.

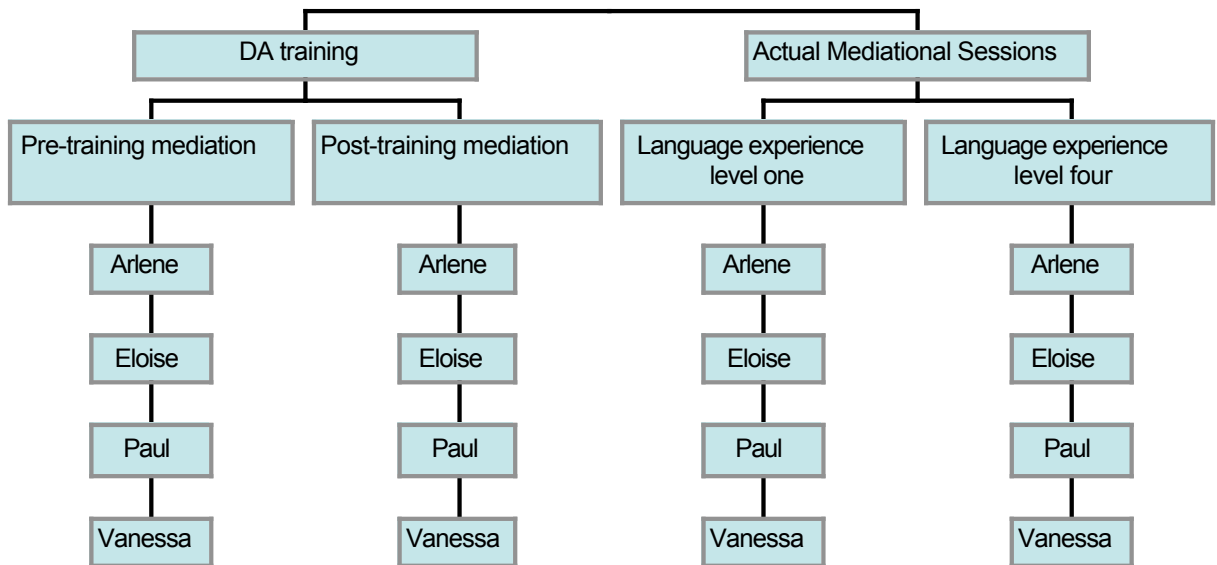
Conclusion

This chapter has described this study's methodology in order to uncover and categorize the behaviors that occur while two individuals work collaboratively through an assessment. It describes the driving question behind the study, as well as the sub-questions which were designed to provide a more complete understanding how of DA training affects mediation and how semiotic tool use, constructs of assessment and language learning, and cultural artifacts mediate language learning. The case study method was described and its appropriateness concerning the research questions was addressed. Moreover, thematic analysis was explored as a method of data analysis. Special attention was given to trustworthiness and the establishment of a study is viable.

Chapter 4

There are five parts in this chapter; a description of the DA training session; a description of the strategic behaviors in pre- and post-DA training mediation; a description of the strategic behaviors from mediators and students in the first and fourth level of language experience; a presentation of the data that came out of the post DA session interviews; and the themes that emerged from the analysis of the researcher's journal. To clarify, mediational data in this chapter comes from three different mediational sessions: pre-training mediation, post-training mediation and actual mediation. The term actual mediation is used to describe the interaction that occurred between students and mediators after the DA training had been completed. To facilitate understanding of the data the following chart details the areas from which the strategic behaviors emerged.

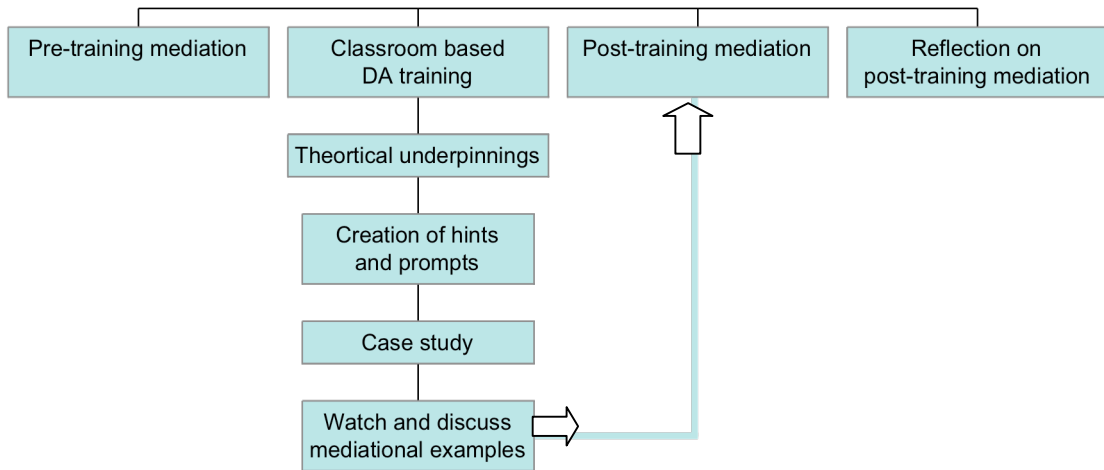
Figure 22. General structure of data collection



DA Training Session

The DA training session followed a workshop format. That is to say that mediators were taught both the theoretical and practical underpinnings of conducting DA. There were four distinct pieces to the DA workshop: pre-training mediation with a practice student, classroom-based DA training, post-training mediation with a practice student; and reflection on post-training mediation. The following chart provides a graphic representation of the DA training session format.

Figure 23. DA training session format



As illustrated in the chart above mediators worked with students before they received training. They then were trained in the theoretical underpinnings of DA; namely Vygotskian cognitive psychology. Next, as a group, they looked at sample exam questions and created hints and prompts that could be offered as mediation. A case study of a student and a mediator engaged in DA was examined. The training concluded by watching a video detailing mediation and discussing the different ways in which mediation could be offered to students. After the classroom-based part of the training was complete, mediators worked with a student through an assessment. This followed the same pattern as the pre-training mediation, except that this time the mediators had been trained. This mediation was video taped and was reviewed with the mediator using Bartlett's (1990) reflective circle. This reflective process was done with mediators on an individual basis.

Mediators mediated students at the same level in pre- and post-training. That is to say Eloise mediated a level one student, Paul mediated a

level two student, Arlene mediated a level three student and Vanessa mediated a level four student. The mediators mediated students at the same level in the pre- and post-training in order to give the mediators the opportunity to work with the same assessment and utilize mediational strategies with which they were already familiar.

Validity of the Assessments

A test that is said to be valid “if it measures accurately what it is intended to measure” (Hughes 2003, p. 26). The establishment of validity is important due to the importance that is placed on assessments in contemporary educational research, and the push for accountability of teachers and students. The assessments in this study were proven to have face validity and content validity and each is discussed below.

Face Validity

The computer-mediated assessments in this study were based on the university-adopted curriculum for each course. Listening texts were selected based on their accessibility in a computer-mediated environment.

The validity of each assessment was established. For instance, to determine the face validity of the questions, 14 students of French as a foreign language were asked to rate each assessment in terms of its surface creditability as described by Ingram (1977). The survey was administered to students via Blackboard. The results of the validity study are listed in the following chart.

Figure 24. Face validity of listening assessments

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Authentic	35.7%	50%	7%	7%	-
Appropriate to the language experience level	7%	50%	21.4%	21.4%	-
Clear in terms of expected student behaviors	64.2%	35.7%	-	-	-
Clear in terms of instructions	71.4%	28.6%	-	-	-

The most important distinction to make between face and content validity is that in content validity studies one “gathers the judgments of ‘experts’: people whose judgments one is prepared to trust, even if it disagrees with one’s own” (Alderson, Chapman and Wall, 2003, p. 173), while in face validity the test constructor seeks the judgment of people who are “not necessarily the ‘expert’” (Alderson, Chapman and Wall, 2003, p. 172).

Content Validity

To determine the content validity of the listening assessments five Second Language Acquisition (SLA) experts were asked to compare each assessment to the course curriculum. The experts’ judgments were mediated by an adapted version of Bachman’s (1990) Framework of Communicative Language Ability and Test Method Facets. Despite the fact that the underlying beliefs concerning cognition in Communicative Language Teaching (CLT) and SCT are incommensurate (Johnson, 2004), Bachman’s

framework, in a modified form, proved useful. The modifications were done to make the framework commensurate with the researcher's understanding of SCT. The results of the questionnaire are listed below.

Figure 25. Content validity of listening assessments

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Authenticity	80%	20%	-	-	-
Appropriateness to language experience level	60%	40%	-	-	-
Frequency of vocabulary	40%	60%	-	20%	-
Speed of the listening text	20%	60%	-	20%	-
Length of the listening text	20%	80%	-	-	-
Contextualization of the listening text	20%	60%	-	40%	-
Genre of the listening text	40%	60%	-	-	-

Interrater and Intrarater Reliability

In order to validate the presence of the strategic behaviors that emerged through the thematic analysis of the data, a second researcher was asked to code a sample of the pre- and post-DA training mediational sessions. After having selected a sample of the transcribed data, the interrater independently identified strategic behaviors in the mediation. Following Miles and Huberman (1994) interrater reliability between the interrater and the researchers was calculated by dividing the number of agreements by the total number of units included in the sample. The interrater reliability calculation

yielded a 72% agreement. The same procedure was followed to establish interrater reliability in the level one and level four mediation. The reliability calculation yielded a 76% and a 69% agreement, respectively. The following chart offers a graphic representation of the interrater reliability coefficient data.

Figure 26. Distribution of inter-rater reliability coefficients

<i>Mediational episode</i>	<i>Interrater reliability coefficient data</i>
Pre- and post-DA training	.72
Language experience level one	.76
Language experience level four	.69

Due to the relatively low interrater reliability coefficient, intrarater reliability was established by reexamining pre- and post-DA training mediational transcripts. An intrarater reliability of 100% was calculated. That is to say all of the data that the research coded as belonging to a specific strategic behavior, was coded a second time as the belonging to the same behavior. The same procedure was followed to establish intrarater reliability in the level one and level four mediation. The reliability calculation yielded a 96% and a 100% agreement, respectively. The following chart offers a graphic representation of the intrarater reliability coefficient data.

Figure 27. Distribution of Intrarater Reliability Coefficients

<i>Mediational episode</i>	<i>Intrarater reliability coefficient data</i>
Pre- and post-DA training	1.00
Language experience level one	.96
Language experience level four	1.00

One possible explanation for the low interrater reliability coefficient is the interrater's lack of experience with DA. While she is an experienced teacher of ESOL and an expert in SCT, she confided in the researcher that her knowledge of DA is minimal.

Another explanation for the low interrater reliability coefficient is the fact that according to Nickerson and Nagle "interrater reliability coefficients vary widely and are consistently lower than test-retest and internal consistency coefficients" (2001, p. 300) when researchers are working with behavioral rating scales. It is true that in this study, a behavioral rating scale is not being used but instead created. However, Simpson (1989) has posited that the teacher's frame of reference, or in this instance the interrater's frame of reference, can affect their classification of a student's behavior. It is well possible the researcher of this study and the interrater do not share the same frame of reference for teaching.

Strategic behaviors in pre- and post-DA training mediation

The following section details the strategic behaviors that emerged as mediators dialogically engaged with students both before and after the mediators had participated in a DA training workshop. These pre- and post-

training mediational episodes were videotaped and transcribed. The transcriptions were then analyzed using a modified form of thematic analysis (Boyatzis, 1998). The analysis was facilitated using NVIVO, a software package that aids in the organization and creation of matrices and graphic displays of data (Miles and Huberman, 1994).

During the thematic analysis eleven distinct themes emerged, through thematic analysis as described in the previous section, from the data that was collected in the pre- and post-training mediational sessions. The choice of the names of the themes is arbitrary. Themes were given these names because, in the opinion of the researcher, they best capture the meaning of the strategic behavior. These themes are outlined and described in the following chart.

Figure 28. Coding definitions from pre- and post-training mediational sessions

<i>Strategic Behaviors</i>	<i>Definitions and Examples</i>
create collaborative frame	Language is used in order to create a relaxed environment.
create sense of accomplishment	Praise concerning a correct answer or other achievement, <i>e.g. you did a super job.</i>
comprehension check	Asking a question or prompting with the aim of gauging a student's understanding of a word or concept, <i>e.g. As-tu compris?</i>
direct translation	Translation from one language to another, <i>e.g. proche means near</i>
provide correct response	Giving the student the correct answer.
transfer to novel situation	When something that was learned in a previous situation is applied in a new situation.
student requests mediation	Student asking specific questions.
elicit student response	The mediator leading a student to an understand of something that they did not previously know, <i>e.g. Les papiers sont entre le stylo et le clavier. Alors, Steve est _____ le supermarché et la rue Casino.</i>
moving the mediation along	Bring the student back on task or changing the direction of the mediation, <i>e.g. Ok, let's look at the next one.</i>
use of a physical tool	Student or mediator use of a tangible instrument with the aim of promoting deeper understanding, <i>e.g. student referring to notes that they took in previously in the mediation session.</i>

For the most part the instances of the themes' occurrences increased in the after-training mediation sessions. The increase in instances of occurrence of the themes after the training reflects the more robust manner in which mediation was carried out. This is to say, the interaction between

students and mediators was richer after the DA training than before. The instances of each theme's occurrence are outlined in the following chart.

Figure 29. Occurrence of strategic behaviors in pre- and post-training mediation

Strategic Behaviors	Before training	After training
creation of a collaborative environment	9	22
create sense of accomplishment	21	34
comprehension check	3	20
direct translation	13	0
provide correct answer	5	0
transfer to novel situation	2	0
student requests mediation	4	23
elicit student answer	0	14
moving the mediation along	0	6
use of physical tool	0	5

There is a relative dearth of research into DA in second language settings. Of the studies that exist, none examine the strategic behaviors that occur between mediators and students. However, Lidz (1991) has catalogued what she terms effective strategic behaviors that occur between mediators and special needs children. While the goal of her research (effective DA based classification of special needs children) is somewhat different from the goal of this study, the behaviors that posit meaningful interaction within DA settings is outlined the following figure.

Figure 30. Effective behaviors in the Mediated Learning Experience (Lidz, 1991)

1. intentionality	consciously attempting to influence the child's action
2. meaning	promote understanding by highlighting what is important to notice
3. transcendence	helping to make associations with past and future experiences
4. joint regard	seeing the activity through the child's eyes
5. sharing of experience	telling the child something that they weren't aware of
6. task regulation	manipulating the task to facilitate problem solving, stating a principle of solution or introducing strategic thinking in the child
7. praise/encouragement	keeping the child's self esteem high
8. challenge	maintain the activity within the limits of the child's ZPD
9. psychological differentiation	keeping in mind that the task is the child's and not the mediator's
10. contingent responsibility	the ability to read the child's behavior and respond appropriately
11. affective involvement	expressing warmth to the child
12. change	communicating that some change has been made

Jensen and Feuerstein (1987) have also done work to define the behaviors that mediators and students undergo in DA situations. Just as in Lidz's work, Jensen and Feuerstein work with special needs children. In order to ensure that the mediation that occurs between mediators and children is effective, they propose the following components of the Mediated Learning Experience (MLE). It is important to note that Feuerstein (1979) believes that the MLE is situationally dependant and will therefore change depending on the mediator and the child with which he is working.

Figure 31. Components of the Mediated Learning Experience (Jensen and Feuerstein 1987)

1. Intentionality & Reciprocity	A focused attempt to mediate the task—the goal of the mediation is development	must be present in any situation where the MLE occurs
2. Transcendence	The transfer of learning to a new situation	
3. Mediation of Meaning	Direct the student in a way that they understand what is important to recognize—objects and activities. This understanding is culturally defined.	
4. Feelings of Competence	Offering assistance to complete a task that is seen as too difficult for the student. Creation of feelings of competency in the learner.	May be present in different situations where the MLE occurs
5. Regulation and Control of Behavior	Controlling the behavior of the learner with the aim that they might control it themselves in the future	
6. Sharing Behavior	The manner in which the mediator selects and imparts stimuli to the learner. —eye contact, pointing, gestures---This ensures the effectiveness of the mediation. Can be considered a fundamental part of the MLE.	
7. Individualization and Psychological Differentiation	Encouragement of the understanding that individuals are different and possess different points of view.	
8. goal seeking, setting, planning and achieving	Structuring of the task so that it leads to the development of self regulation	
9. Challenge	Learner should be challenged to complete a task that is above their level of actual development, but the task should not be so difficult as to discourage the learner	
10. Awareness of change	The mediation of the awareness that people are capable of change	
11. Optimistic Alternative	Mediation of the fact that learners can become more than their present abilities suggest.	

When one compares the Lidz's (1991) catalogue of effective mediational behaviors with the strategic behaviors that emerged through the thematic analysis of this data, it is clear that there is some overlap. For instance, Lidz puts forth a behavior that she entitles 'praise and encouragement.' This is very similar to the theme that emerged in the pre- and post-training mediational session entitled 'create sense of accomplishment.' In both cases mediators used positive language to complement the learner encourage them to continue working through the assessment.

There also exists some areas of overlap among the strategic behaviors that emerged in this study and the components of the MLE as set forth by Jensen and Feuerstein (1987). For example, in this study a theme that the research entitled 'elicit student answer' is somewhat parallel to the behavior that Jensen and Feuerstein label 'challenge.' In both of behaviors the mediator provides the student with a task that they could not complete on their own.

In the previous section the DA training session was described and the strategic behaviors in pre- and post DA training mediations detailed. Two charts, unique to this study, were also presented; one giving the coding definitions used in the pre-and post DA training mediational sessions and the other giving the occurrence of the strategic behaviors in the pre-and post DA training mediational sessions. Additionally the way in which this data meshes with previously conducted studies is briefly detailed.

In the following sections each theme from the pre- and post-DA training mediation will be individually discussed and examples drawn from the data collected will be given.

Creation of a Collaborative Frame

In this study, the theme entitled *creation of a collaborative frame* is defined as the use of language in order to create a relaxed environment. Recall that mediators dialogically engaged students before and after DA training. In the mediation that occurred before the training, nine instances of the creation of a collaborative frame were identified. After the DA training twenty-two instances of the creation of a collaborative frame were identified. The following quote from a post training mediational session between Eloise and Joanne, a student, demonstrates this theme.

Eloise: OK, you got four right and you got two wrong. What I would like to do is go through the questions for the reasons that you got them right and the reasons that you got the wrong. You know, just as a learning thing. OK, so the first one, you're right. Do you remember this one? Do you remember thinking about what you heard?

Joanne: Yes

Eloise: because I found this one difficult.

Before DA training the mediators Paul and Vanessa manifested 3 instances of the creation of a collaborative frame, while Eloise and Arlene had two instances and one instance respectively. The pre and post training instances of strategic behaviors, divided by mediator are found in the following chart.

Figure 32. Occurrences of creation of a collaborative frame, pre- and post-training

Creation of a collaborative frame	before training	after training
Paul	3	3
Eloise	2	8
Arlene	1	9
Vanessa	3	1
totals	9	22

After training Vanessa decreased the number of times she attempted to create a collaborative frame. Notice that she is the only one of the mediator that did so. She had three instances before training and just one after training. A possible explanation for this decrease is found in the researcher's journal. Describing the mediation before training, he states, "Vanessa told me she found it hard to mediate a student who got all the answers correct. It made her feel uncomfortable." Because she herself was ill at ease, it may be that she wanted to control the teaching environment, making it a more relaxed place for both her and her student.

Paul showed no change in number of times he created a collaborative environment in the pre and post training mediational episodes. However, both Eloise and Arlene greatly increased in the number of times they created a collaborative frame. Eloise increased from two to eight instances, while Arlene increased from one sole instance to nine instances after the DA training. Both Eloise and Arlene reported to the researcher that they both felt more comfortable mediating students after they had some understanding of what happens in a DA situation. In fact Eloise recounted some difficulty she

had with her student in the post training mediation. Again reported in the researcher's journal she stated,

We got off to a rough start. It's hard to mediate someone who you don't know. She really didn't seem to be receptive to what I was trying to do until I stopped and explained to her that I wasn't trying to judge her ability in French or to give her a grade, but rather to get a better feel for her strengths and areas that we want to focus on.

This seems to indicate, in the mind of Eloise, the importance of creating an environment in which the student and mediator are both comfortable.

The theme creation of a collaborative frame seems to roughly correspond to the part of MLE Jensen and Feuerstein (1987) label as intentionality. This is because in both strategic behavior definitions, mediators are working with a student in order to create an environment that is conducive to language development.

Creation of a Sense of Accomplishment

The theme entitled *Creation of a sense of accomplishment* is defined as praise concerning a correct answer or other achievement. In order to more clearly illustrate this strategic behavior, an example pulled from the post training mediational session between Arlene and Cody is included.

Arlene: That's wonderful. The fact that you were able to answer four questions out of seven says a lot. It says most about your testing strategies.

Interestingly enough every mediator, with the exception of Paul, had an increase in the instances of creating a sense of accomplishment in their students. Notice that Paul's decrease in this mediator behavior is slight. In

order to facilitate the discussion of the pre and post training instances of the strategic behavior entitled *creation of a sense of accomplishment*, the following chart divides the occurrences of this behavior among mediators and between pre- and post-training.

Figure 33. Occurrences of creation of sense of accomplishment, pre- and post-DA training

creation of a sense of accomplishment	before training	after training
Paul	8	7
Eloise	7	10
Arlene	2	10
Vanessa	4	7
totals	21	34

Before training, in Paul’s mediation, eight instances of this theme were located and after training seven instances emerged. The reason for this is not readily apparent, however, Paul did report to the researcher that he knew the student that he mediated after training on a social basis and that, “ her French is very good.” Therefore, it is possible that he felt her language level was more advanced and she did not need as much encouragement as his pre-training student did. Paul’s impression of his second student is further evidenced by the pre- and post-training students’ scores on the activity. Paul’s first student answered two of the five questions correctly while his second student answered all questions correctly.

The other three mediators all manifested increased instances of the creation of a sense of accomplishment. Eloise, Arlene and Vanessa were

found to have seven, two, and four instances of this theme in the pre-training mediation and ten, ten, and seven instances after the DA training a possible explanation for this increase was uncovered, and is somewhat similar to the explanation given by Paul. Arlene stated, “The first time Joanne (the student that she mediated) got all but one question right. There really wasn’t much to talk about, except for the question that she missed.” Vanessa next added, “This time I looked at all the questions, not just the ones that the student missed.” Additionally, probing students’ understanding of questions that they answered correctly offered the mediators the opportunity to encourage student efforts in a positive manner. This may be why there is a general increase in this behavior in the post training mediational sessions.

The strategic behavior coded as creation of sense of accomplishment is present in Lidz (1991) taxonomy of effective mediational behaviors. Lidz labels this behavior as praise/encouragement. She defines this as an action taken by the mediator in order to keep the child’s self-esteem high.

The same behavior is also found in Jensen and Feurestein’s (1987) components of the MLE. They label this behavior as feelings of competence or giving praise to the child in order to encourage their performance.

Comprehension Check

In order to verify a student’s understanding of an aspect of the activity in which they participated, mediators engaged in comprehension checks. In this study, a *comprehension check* is defined as asking a question or prompting with the aim of gauging a student’s understanding of a word or

concept. In order to more clearly illustrate this strategic behavior, an example pulled from the post-training mediational session between Paul and Josie is included.

Paul: parce qu'il n'était pas dans son assiette, il était....ok, hum, mais regarde les réponses, on va les regarder ensemble, d'accord? avoir assez mangé, être très à l'aise, ça va? Tu comprends? Dis-moi si tu ne comprends pas ok?
[Paul: because he wasn't in his plate, he wasn't...ok, hum, but look at the answers, we're going to look at them together, ok? have eaten enough, to be very comfortable, ok? You understand? Tell me if you don't understand ok?]
Josie: ok

Before the DA training session only Paul and Eloise conducted any comprehension checks. Paul had one instance while Eloise had two. In the post DA training mediation, Paul showed no change, while Eloise increased to ten. Arlene also increased to ten and Vanessa increased to seven. To facilitate a comparison of the number of instances of comprehension checks in the pre and post training mediational sessions, the following chart is provided.

Figure 34. Occurrences of comprehension check, pre- and post-training DA training

comprehension check	before training	after training
Paul	1	1
Eloise	2	12
Arlene	0	4
Vanessa	0	3
totals	3	20

The increased number of comprehension checks present in the post-DA training data may again be attributed to the mediator's understanding of

the effective manner in which to conduct DA. As reported in Vanessa's post-DA training reflective session, she attests to the fact that perhaps the student she mediated before the DA training answered some questions correctly despite the fact that he might not possess a complete understanding of the listening test. She mused,

As a teacher we don't always know if a student got a question right because they understood the question or just guessed. They can also be affected by the structure of the assessment...Bob, (the student that she mediated in the pre-training assessment) didn't understand at first that at the beginning of the passage is a summary of the rest of the newscast, but he still got a perfect score on the test. The next time I mediated, I wanted to make sure that they understood the entire passage and the nuances of the questions.

Vanessa's impression is echoed in the researcher's journal where he noted, "everyone (the mediators) seem to be asking more questions this time (post training), especially Vanessa and Arlene. Both of them are spending much more time mediating their students."

While the researcher would like to cite other studies that catalogue the strategic behaviors that mediator and students engage in while in DA situations, there is a lack of research concerning DA. More specifically, there are only five studies that address DA in second language situations. None of these studies address the strategic behavior of students and mediators.

Direct Translation

Direct translation occurs when a mediator translates from one language to another. Direct translation could take the form of a statement as overt as "can you translate that into French?" Or it may be less specific

sounding something like “do you know another way to say copine (friend)?” In order to more clearly illustrate the strategic behavior of direct translation, an example pulled from the pre-training mediational session between Eloise and Veronica is included.

Eloise: Right, Do you have any idea what the questions mean? It's similar to Italian.

Veronica: What time do they come? What time are they coming?

Eloise: Fermé is actually closed.

Veronica: Ok, fermé is closed. Oh ok, what time do they close?

There is a striking difference in the number of instances of direct translation that occurred in mediation before DA training and after DA training. The only mediator that engaged in any instances of direct translation before DA training was Eloise. In fact, thirteen passages that reflect her engagement in direct translation were identified before mediation training, while there were no direct translation instances after training. This trend is also found in the other mediators. Not one of them used direct translation in their pre or post training mediational sessions. The following table highlights the instances of the theme entitled direct translation in the pre and post mediational sessions.

Figure 35. Occurrences of direct translation, pre- ad post-DA training

direct translation	before training	after training
Paul	0	0
Eloise	13	0
Arlene	0	0
Vanessa	0	0
totals	13	0

A possible explanation for Eloise's use of direct translation in the pre-training mediational session is present in the researcher's journal. Referring to her pre-training mediation, the researcher states, " Eloise seems uncomfortable with her mediation. She keeps on saying how hard it is to mediate someone who has limited French proficiency." It is important to note that in pre-training DA, Eloise mediated a student at the beginning level of language experience. Moreover, Eloise's student confided in the researcher that her French was, "not very good."

The use of L1 in this context mirrors Anton and DiCamilla's (1998) study where they showed that the use of the first language facilitates joint activities. Moreover, they posit that the use of L1 in collaborative contexts helps to establish and maintain intersubjectivity.

Brooks and Donato (1994) also found that the use of L1 in collaborative activities serves an important purpose. More specifically they found that the first language was used to comment on L2 use, to form a joint understanding of the task and to set goals. In summary they found that the use of the L1 "facilitates L2 production and allow learners both to initiate and sustain verbal interaction with one another."(p.268)

Provide Correct Answer

In this study, when a mediator provides a student with the correct answer without attempting to elicit the answer from the student, this falls into the theme entitled *Provide correct Answer*. The following extract of pre-

training interaction between Paul and Sara is provided with the aim of illustrating this theme.

Paul: Non, je vais relire le passage, d'accord. Doucement. Le docteur dit, «Je vais vous prescrire des antibiotiques et pour aujourd'hui j'exige que vous vous reposiez. D'ici 48 heures vous devriez vous sentir mieux.... D'ici 48 heures...[No, I'm going to read the passage again ok. Slowly. The doctor says "I'm going to prescribe some antibiotic for you and for today I insist that you rest. 48 hours from now you should feel better...48 hours from now...]
Sara: d'ici...[from now...]
Paul: 48 heures...[48 hours...]

Instances of mediators providing the correct answer to their students without attempting to lead them to the answer occurred five times in the pre-training mediation. Of all the mediators, only Paul and Eloise provided the correct answers to their students. Data analysis revealed three instances of the behavior in Paul's mediation and two instances in Eloise's mediational behavior. Recall that the instances were manifested only in the pre-training mediational episodes. The following matrix provides the reader with the number of instances that each theme occurred in the pre and post training mediational sessions, divided by mediator.

Occurrences of provide correct answer, pre- and post-training

provide correct answer	before training	after training
Paul	3	0
Eloise	2	0
Arlene	0	0
Vanessa	0	0
totals	5	0

In an interview, Eloise commented that she, “Wanted to give mediation to her students that was contingent on their needs and graduated.” Such sentiment is found in the work of Aljaafreh and Lantolf (1998) where they posit that effective mediation in the ZPD should be no more than the learner needs to achieve self-regulation and range from implicit to explicit (p.463). It is important to recall that this study was the basis for a case study that took place in the DA training. Paul has a similar understanding of quality mediation, in that he outlined his desire to not, “put words in their mouths,” and instead help his students to discover for themselves why an answer is either correct or incorrect.

Transfer to Novel Situation

For the purpose of this study, the theme *Transfer to Novel Situation* is defined as a situation in which something (a word or concept) that was learned by a student in a previous situation is applied in a new context. As outlined in Chapter Two, according to Feuerstein (1994) transcendence of learning is one of the three strategic behaviors that must be present for the Mediated Learning Experience (MLE) to occur. The theme of transfer to a novel situation, mirrors Feuerstein’s concept of transcendence. With the aim of illustrating the mediational behavior entitled *transfer to novel situation*, the following quote is provided from the mediational data between Eloise and Joanne.

Eloise: Right, So now we have to decide where the pastry shop is. Right now, rue [road], so in the previous question we had rue du pape [road of the Pope]

Veronica: street

Eloise: right

Of all the themes that were uncovered from the investigation of the data from the pre- and post-training mediational sessions, this one is present the least number of times. That is to say that transfer to a novel situation occurs only twice in the data. Moreover, these two instances are manifested in just the data of the pre- training mediational sessions conducted by Eloise. No clear reason for the disparity of the behavior is found in either the researcher's journal or in the post-DA training interviews. Feuerstein's idea of the MLE was discussed in the DA training sessions as well as the components of it. Despite this relatively few examples of the behavior emerged from the data. In order to graphically represent the instances for the theme transfer to novel situation the following figure is provided.

Figure 36. Occurrences of transfer to novel situation, pre- and post-DA training

transfer to novel situation	before training	after training
Paul	0	0
Eloise	2	0
Arlene	0	0
Vanessa	0	0
totals	2	0

The lack of this theme in the post-DA training sessions is particularly interesting. As Feuerstein (1979) puts forth, there are three components of that must be present for MLE to occur; intentionality and reciprocity,

transcendence and mediation of meaning. The strategic behavior coded as transfer to novel situation is very close to Feuerstein's concept of transcendence. There are several possible explanations for the lack of transcendence in the post-DA training mediational episodes. For example, as stated in the researcher's journal, the mediators did not seem to "buy into" the idea of DA and working with students within their ZPDs. Moreover, the DA training session provided to the mediators might not have been sufficient or accessible to someone with little or no knowledge of SCT.

Despite the fact that only two instances of transfer to novel situation occurred in the pre-DA training and none instances of transfer to novel situation occurred in post-training mediation, every student in language experience level one and four showed an increase in their score from the first time that they completed the assessment and a subsequent time that they completed an follow up assessment. It is important to note that the follow up assessment was based on the same listening text as the initial assessment. However testing effect problems are of little concern here. Indeed as Smagorinsky (1995) states attempts to separate the social environment from testing or research instruments is in "violation with the basic tenants of SCT." (p. 201)

Student Requests Mediation

The behavior that emerged from a thematic analysis from the data collected both pre and post DA training yielded a theme entitled *Student Requests Mediation*. This theme is defined as the students asking specific

questions of the mediator in either English or French. The following extract of the post-training mediational session between Vanessa and Cody is provided with the aim of illustrating this behavior.

Cody: I don't understand that part.
Vanessa: Ont cloturé les grilles, les grilles. [chained the window bars, the window bars] How would that look if you could see it written? Grilles. [window bars] G g-g
Cody: G-r-i-r-i-e? I have no idea
Vanessa: grilles, (writing on a piece of paper)
Cody: ok, grenouille?[frog?]
Vanessa: that's a good guess, because they sound alike
Cody: oh, grille [bars]
Vanessa: here you go. Ils ont clôturé les grilles [They chained the window bars]
Cody: closed the gate?

Before DA training there were instances, albeit rare, where students requested mediation. However, after DA training twenty-three instances of students requesting mediation were uncovered. The following table details both the pre and post instances of this behavior and their occurrences divided by mediator.

Figure 37. Occurrences of student requesting mediation, pre- and post-DA training

student requesting mediation	before training	after training
Paul	1	0
Eloise	3	1
Arlene	0	6
Vanessa	0	16
totals	4	33

This change in student behavior is puzzling until one considers that perhaps a change in the mediator's strategic behaviors in some way caused

students to feel more comfortable asking questions. While the research is unable to definitely state the cause of this change, he is able to speculate that student felt more comfortable asking questions in the post-DA training mediation, because mediators were more at ease. Their increased comfort was noticed by their students and in turn the students were more comfortable as well. Eloise's reflection on her post training mediation nicely illustrates this supposition. She states, " This was hard (referring to post training mediation) particularly since we didn't know each other. I had to really work with her to get her to open up. By the end, I had her eating out of my hand." In a follow up interview designed to further examine some issues raised in previous interactions with the researcher, Eloise explained, "she learned how to play the game. She was the student and I was the teacher. I wasn't just some unknown woman, but someone interested in her development."

In the pre-training session only Paul and Eloise had student requests for mediation in their mediational sessions. Arlene and Vanessa did not. Through thematic analysis one instance of a student requesting mediation was found in Paul's session and three in Eloise's session. Recall that Arlene and Vanessa did not probe their students in the pre- training DA sessions to ensure that they understood the listening test, but instead only relied their student's correct or incorrect answers to guide the interaction. The same could be said for Paul. He did not probe for student comprehension either. This is despite the fact that there is one instance of a student requesting mediation in his pre- training interaction.

In the post training mediational sessions, all mediators experienced an increase in the number of instances the theme student requests mediation, except for Paul. In fact, Paul's student in the post training did not request mediation at all. However, Eloise and Arlene both experienced increased request for mediation, with six and one instances respectively.

A particularly rich example of increase of students requesting mediation from pre to post training mediational sessions was experienced by Vanessa. No instances of student requests were found in pre-training, yet sixteen were found in the post training mediation. These may be attributed to an illustration that Vanessa gave in order to lead her student to understanding the word *défendre* (to forbid). She told of the French student riots of 1968 and their slogan, "il est défendu de défendre (it is forbidden to forbid)." This piqued her student's interest and it is from this exchange that the majority of her student's requests for mediation originate.

Morgan (1993) has pointed out that students' motivation and interest are among the most important factors for the learning of a foreign language. It appears that in this mediational episode, Vanessa is appealing to Cody's interest in French culture and thus motivating her to continue working through the listening assessment.

Elicit Student Response

In this study, when a student is led to an understanding of something that they did not previously know, it is labeled *elicit student response*. This theme differs from the theme provide correct answer in that elicitation, as

defined within the context of this study, refers to the process of giving the student the least explicit hint possible to lead them to the correct response. The theme *provides correct response* does not offer graduated help to the learner, but instead provides them with the correct answer without leading them to it. In order to illustrate the mediational behavior entitled *elicit student response* the excerpt from the post training mediational interaction between Vanessa and Cody is provided.

*Vanessa: You yell au secours, au secours, [help, help] What's the place that you go in the hospital labeled in France, when you have a big problem? For the first place that you go. If you're bringing in somebody with a gunshot wound. It's the...
Cody: Hospital?*

The mediation that transpired before training manifests no instances of elicit student response. On the other hand, there were five instances of provide correct response in the pre-training mediational sessions. The contrary is true in the post training mediation. That is to say, fourteen instances of the theme entitled illicit student response emerged from the data collected from the post training sessions. No instances of mediators providing the correct answer in post training mediation emerged. The following table provides a graphic representation of this mediational behavior.

Figure 38. Occurrences of elicit student response, pre- and post-DA training

elicit student response	before training	after training
Paul	0	0
Eloise	0	1
Arlene	0	5
Vanessa	0	8
totals	0	14

The disparate nature of this behavior in pre and post mediational sessions, may be due to the fact that during the DA training specific attention was paid to a study by Aljaafreh and Lantolf (1994) that emphasizes that mediation should be delivered on a contingent basis and in a graduated manner. In other words, the mediation which a student receives should be based on their needs and never be too explicit. Instead effective mediation should lead a student to a correct answer. This is particularly interesting because it means that in interactionist DA mediation will be different for every student.

In the post training mediational sessions, Paul's interaction with his student yielded no instances of elicitation. Eloise's interaction yielded one instance, while Arlene and Vanessa's interactions yielded five and eight instances respectively. The researcher's journal offers some interesting insight into the increased elicitation. Here he remarked, "Vanessa seems to be engaging her student. She is getting her interested and helping her to arrive at a shared understanding of the question. They are trying to reach intersubjectivity." When directly questioned about her ability elicit student

responses, Vanessa replied, “that’s just the way that I teach. I want students to draw their own conclusions and arrive at their own answers. That’s what teaching’s about.”

Moving the Mediation Along

The theme *moving the mediation along* is defined in this study as the mediator bringing the student back on task or changing the direction of the mediation. The following excerpt from the post-training mediational interaction between Vanessa and Cody is provided in order to illustrate this mediational behavior.

Vanessa: Ok, so now let go back to the question. If so, why couldn't they easily go into the church?

For this theme, no instances were found in the pre-training mediation. However, four instances of this behavior emerged from the post training mediational session data. Broken down by mediator, both Paul and Eloise used this strategy twice during post training mediation. Arlene and Vanessa used this strategy once each during the post training mediation with their students. In order to facilitate the comparison of pre and post training occurrence of the theme moving the mediation along, a chart that details the instances divided by mediator is included in the following figure.

Figure 39. Occurrences of moving mediation along, pre- and post-DA training

moving mediation along	before training	after training
Paul	0	2
Eloise	0	2
Arlene	0	1
Vanessa	0	1
totals	0	4

Paul moved the mediation along by using phrases such as, “alors, (so)” or “continue (continue)” or “donc (therefore)” or “continue alors (so continue).” Eloise did something similar, however, her mediation was in English. She said, “ Do you have any questions or have you had enough?” It is interesting to note that both Arlene and Vanessa also chose to move the mediation along in English. The issue of language choice in mediational sessions is interesting and warrants further study.

In an interview session during which Arlene reflected on her mediation, a possible explanation for the emergence of this behavior after training was flagged. She said, “ I felt that the second time (after the training) I had a better idea of what to do and what to expect out of the student.” This quote reflects Arlene’s feeling that she was more at ease after the training and perhaps felt more comfortable steering the student through different mediational behaviors.

The strategic behavior, moving the mediation along, is similar to the component of the MLE that Jensen and Feuerstein (1987) label as mediation of meaning of meaning. In mediation of meaning a mediator directs the

student to what is important to understand. This can be done by keeping a student on task, as mediators in this study are doing when they are moving the mediation along.

Use of a Physical Tool

The final theme that emerged from a thematic analysis of the data collected from the pre- and post-training mediational sessions in this study is the *use of a physical tool*. The theme *use of a physical tool* is defined as a student or a mediator using a tangible instrument with the aim of facilitating deeper understanding of a word or concept. This behavior is exemplified by the following mediational interaction between Eloise and Joanne.

Eloise: entre la clé, le stylo, qu'est-ce que c'est? Le crayon. Le crayon, la clé, l'ordinateur est entre le crayon et la clé. Entre. Les papiers sont entre Eloise et Joanne. [between the key, the pencil, what is there? The pencil. The pencil, the key, the computer is between the pencil and the key. Between. The papers are between Eloise and Joanne.]

Interestingly enough there were no instances of physical tools being used in the pre-training mediation. This is with the exception of the use of the computer as a tool. Its use was not included because all of the activities were facilitated via the computer. While it is true that the computer was a tool that mediated the assessment, it is no more of a tool than a pen and paper being used during a traditional test would be.

In the post training mediational sessions, five total instances of physical tool usage emerged. However, this theme was present in only two of the mediators, Eloise and Vanessa. Eloise's mediation manifested this theme four times while Vanessa's did so once. To illustrate the theme use of

physical tool, the following chart lists the instances of this theme; broken down by mediator, both pre-and post DA training.

Figure 40. Occurrences of use of a physical tool, pre- and post-DA training

use of a physical tool	before training	after training
Paul	0	0
Eloise	0	4
Arlene	0	0
Vanessa	0	1
totals	0	5


The appearance of this theme after the mediation may be explained by the discussion of validity and reliability during the training. The researcher spoke directly about tool use and its effects on validity and reliability in the SCT conceptualization. In SCT, collaboration, whether with people or semantic tools, does not threaten validity, but instead is the source of the development of higher order thinking skills. Therefore, mediators were encouraged to make use of the listening test transcription, dictionaries or other materials they believed might be helpful in providing mediation.

Eloise made use of physical tools four times during her mediation. Twice she offered a pen and paper for her student to use to take notes or write out a problematic structure. Once she showed her student the transcripts of the text and the other time she illustrated the meaning of the preposition “entre (between)” by placing papers between the computer and her keys. Vanessa made a physical tool available to her student when she

was having difficulty picturing the spelling of a word in her head. Once she spelled the word out on paper the student did indeed comprehend the word.

From reading the themes and their explanation, one can see the complexity the strategic behaviors in which mediators engage. Overall there seems to be a trend that strategic behaviors that offer implicit instead of explicit mediation increase in terms of occurrence in the post-training mediation. A case in point would be the theme *comprehension check*. Before DA training there were three instances of this behavior. After DA training there were twenty instances of mediators performing a comprehension check. This can be contrasted with the theme *provide correct answer*. In the pre-training mediation there were five instances of this strategic behavior. In post-training there were no instances of this behavior. A comparison of these two themes illustrates a trend offering students more implicit hints after mediators had undergone training. The following chart illustrates the trend of mediation becoming more implicit after the DA training. Notice that two strategic behaviors are not included in this chart; student requests mediation and transfer to novel situation. This is because, in the estimation of the researcher these themes cannot be classified as either implicit or explicit.

Figure 20. Comparison of implicit and explicit mediational behaviors in pre- and post-DA training sessions

Implicit	Strategic Behaviors	Before training	After training	Net gain after training
	creation of a collaborative environment	9	22	+
	create sense of accomplishment	21	34	+
	moving the mediation along	0	6	+
	comprehension check	3	20	+
	focus on problem area	39	75	+
	elicit student answer	0	14	+
	use of physical tool	0	5	+
	direct translation	13	0	-
	provide correct answer	5	0	-
	Explicit			

The previous sections define eleven themes that emerged through a thematic analysis of data collected in both pre- and post-mediational sessions that included four different mediators and eight different students. Each theme was specifically discussed; examples given and possible explanations cited for the increase or decrease of the occurrence of the themes from pre- to post-training sessions or vice versa. The explanations came from the video-taped mediational sessions, the researcher’s journal, and focus and individual interviews with mediators and students.

The following section reports on the data that was collected after the DA training session was complete. Students from four different language experience levels were asked to participate in the study. It is important to note that language experience is simply a measure of seat-time in a language class. For instance, a student at the first level of language experience would be enrolled in first semester French. While a student in the third level of

language experience would be enrolled in a third semester class. In order to facilitate understanding of the structure of the data collection, the following chart is offered.

The study initially proposed to investigate the differences in the strategic behaviors of the mediators at the four different levels of language experience. However, initial analysis of the data indicated that there is little difference in the manner in which students are mediated from language experience level one to language experience level two. Also, there is little difference in the way that students are mediated from language experience level two to three. Therefore, in conjunction with the committee overseeing this study, the two language experience levels that seem to manifest the most differences are detailed; language experience level one and four. The following chart provides a graphic representation of the strategic behaviors and their distribution across the levels of language experience.

Figure 41. Distribution of strategic behaviors across language experience levels

<i>Strategic Behaviors</i>	<i>Language Experience Level</i>			
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
ask student to describe strategy	X			
ask student to justify response	X	X	X	
ask student to translate	X	X	X	X
comprehension check	X	X	X	X
create collaborative frame	X	X	X	X
create sense of accomplishment	X	X	X	X
direct translation by mediator	X	X	X	X
elicit student response	X	X	X	X
mediator speaks key phrase	X	X	X	X
moving the mediation along	X	X	X	X
review question correctly answered	X	X	X	X
student requests mediation		X	X	X
targeted listening	X	X	X	X
use of physical tool	X	X	X	X

The following section reports on the strategic behaviors that emerged from the thematic analysis of mediators and students engaged in DA, after the DA training was completed, at the first level of language experience.

Strategic Behaviors in Language Experience Level One

Mediational sessions between mediators and students were conducted at various levels of language experience. That is to say mediators worked in dialogic engagement with students that were, at the time of the study, enrolled in the first, second, third and fourth semesters of university level

French. The following sections report on the mediational session of two mediators; Paul and Arlene who worked with first semester students Brittany and Liz. These mediators were chosen because, in general, their mediational exchanges with students at this language experience were richer than their counterparts.

A thematic analysis⁴ of the interactions of the Paul and Brittany dyad, as well as the Arlene and Liz dyad, yielded fourteen strategic behaviors present in the mediational sessions. These strategic behaviors (of the level one mediators) are listed and defined in the following chart.

⁴ For a detailed explanation of thematic analysis see chapter three

Figure 42. Coding definitions for level one mediation

<i>Strategic Behaviors</i>	<i>Definitions and Examples</i>
ask student to describe strategy	Mediator asks student to describe the strategy that they used to arrive at an answer, e.g. <i>how did you eliminate the wrong answers?</i>
ask student to justify response	Mediator asks student to clarify the reason that they answered in such a way, e.g. <i>why did you pick voison?</i>
ask student to translate	Mediator asks student to translate from French to English or vice versa.
comprehension check	Asking a question or prompting with the aim of gauging a student's understanding of a word or concept, e.g. <i>Qu'est-ce que ça veut dire?</i>
create collaborative frame	Language or gestures are used in order to create a relaxed environment.
create sense of accomplishment	Praise concerning a correct answer or other achievement, e.g. <i>you did a super job.</i>
direct translation by mediator	Translation from one language to another on the part of the mediator, e.g. <i>proche means near</i>
elicit student response	The mediator leading a student to an understand of something that they did not previously know, e.g. <i>Les papiers sont entre le stylo et le clavier. Alors, Steve est _____ le supermarché et la rue Casino.</i>
mediator speaks key phrase	Mediator repeats a phrase that is important to the student's understanding of a word, concept or context of the listening text.
moving the mediation along	Bring the student back on task or changing the direction of the mediation, e.g. <i>Ok, let's look at the next one.</i>
student requests mediation	Student asking specific questions either in French or English.
targeted listening	Listening to a specific part of the text
use of physical tool	Student or mediator use of a tangible instrument with the aim of promoting deeper understanding, e.g. <i>student referring to notes that they took in previously in the mediation session.</i>

Ask Student to Describe Strategy

Thematic analysis, as previously described, revealed no instances of asking students to describe strategies in the Paul and Brittany dyad. There are however, five separate instances of this strategic behavior in the interaction that occurred between Arlene and Liz. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 43. Dyadic distribution of ask student to describe strategy in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	0
Arlene	Liz	5
Total		5

In order to illustrate the strategic behavior *ask student to describe strategy*, a particularly rich example of this behavior on the part of the mediator is shown in the following text.

Arlene : Quand la maison de la presse est-elle fermée ? [When is the maison de la presse closed ?] Did you understand this question?

Liz : What time the place closes?

Arlene: right and you got the right answer Which is le dimanche à 18h [Sunday at 6pm]

Liz: yes

Arlene: And how did you get to that answer?

Liz: I heard the dimanche [Sunday] part and that's how I picked up on that, But definitely the dimanche [Sunday] part is the one that stuck out.

Arlene: So what did you do? Did you listen to the text first? Or did you read the questions first?

Liz: I tend to look at the questions first so that I can remember the answers and then I listened to the text. And then I try to have the text up on the screen so that I can look at the answers while listening and if I still don't get I try to listen to the text again and keep the answers in mind.

Arlene: How did you develop these strategies? Have you always done this?

Liz: If that's how I've always been told that while your listening to a text to read over the questions first that way when you hear the answer you already have it. So you'll be like oh, that makes sense. That's the way that I did in Spanish in high school, I guess.

Arlene's initial question is a comprehension check. She seeks to know if Liz has understood the question. Liz answers in the affirmative and then goes on to add that because of the wording of the question, she listened for a specific date. Arlene then goes on to discuss a subsequent question. Here, she begins with a comprehension check. In response Liz translates the question. Arlene replies by praising Liz's translation and then asks Liz to justify why she chose the correct answer. Liz explains that she noticed a key word in the question and set forth in the listening text to find this word in order to target the correct answer. Perhaps in order to clarify her own understanding of Liz's strategy, Arlene next reiterates Liz's answer justification and Liz responds, affirming and offering additional detail. The interaction then concludes with Arlene asking how Liz developed her test taking strategies and Liz responding that she was taught to approach listening activities in this manner during her high school Spanish classes.

In this mediational exchange there is not just one strategic behavior that is used by the mediator. Indeed, there are four distinct strategic

behaviors in this one passage. However, a careful reading by the researcher of this passage points to the belief that Arlene's underlying goal of this mediational interaction was to discover the testing strategies employed by her student. This is supported by an entry in the researcher's journal directly after Arlene and Liz's mediational session. He states, "After walking back to the office with Arlene she kept talking about Liz's listening strategies. She seems to think that this student's success on the assessment can be attributed to sound test taking strategies." Whether or not the student did indeed use sound test taking strategies is not the focus of DA. Rather, DA's focus is the development of higher order thinking skills through dialogic engagement, as well as the shift, on the part of the student from other regulation to self-regulations. Arlene's insistence on the importance of test taking strategies may reflect a fundamental misunderstanding of DA, as well as a misunderstanding of its theoretical roots in Vygotskian cognitive psychology. This is because of her investigation strategy, or reliance on object regulation as discussed by Frawley and Lanolf (2001), instead of leading Liz to self-regulation through hints and prompts.

Ask Student to Justify Response

In both the Paul and Brittany dyad and the Arlene and Liz dyad, there are five separate instances where the mediator asked the student to justify the reason they chose their answer. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 44. Dyadic distribution of ask student to justify response in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	5
Arlene	Liz	5
Total		10

A particularly interesting example of this strategic behavior is found in Paul and Brittany's interaction while taking account the last question of the activity, one that Brittany answered incorrectly. Paul asks Brittany to discuss why she chose her answer. Keep in mind that the interaction detailed below occurs after Paul and Brittany jointly arrive at the conclusion that the answer that she has chosen is incorrect.

Paul: Why did you pick voison [neighbor]?

Brittany: I just picked randomly

Paul: voison means neighbor. If you wanted to do this again let's say tomorrow, do you think that you would know the answers?

Brittany: oh yeah, definitely. Seeing what you got wrong and why you got it wrong helps to get it in your head.

This interaction begins with Paul asking Brittany to justify her response. In this case it is an incorrect response. Brittany replied that she simply guessed. Then Paul provides a direct translation of the word in question. Next he questions Brittany about future instances of listening assessment that she might participate in, to which she replies that these types of activities help students to internalize language.

Asking a student to justify their response is not the only strategic behavior present in this excerpt of Paul and Brittany's interaction. In fact, there are three separate instances of strategic behaviors present here. At the beginning Paul asks Brittany to justify her answer. Next he provides a direct translation of a word when it becomes evident that she is not familiar with it. The interaction then comes to a close with Paul addressing future learning and Brittany assenting that this DA interaction is helpful to her. This last part of the interaction has been coded as the creation of a collaborative frame. That is to say Paul and Brittany end their interaction with a discussion that is relatively low stakes.

A second example of asking a student to justify why they chose a certain answer is found in the interaction between Arlene and Liz. In this passage, Arlene is reviewing a question that Liz answered correctly.

Arlene: ok so the next question, quelle est l'adresse de la maison de la presse? [What is the address of the maison de la presse ?] Right ? and you said dix-neuf rue du pape [nineteen Pope road], So what does that mean?

Liz: What's the address of the place, I remember being a little confused about one because I didn't think of numbers matched up with the actual address but we still put it because I heard the du pape part. But I thought that it said dix-huit [eighteen] and not dix-neuf [nineteen], but I put dix-neuf [nineteen] (listening) oh, that's not right

Arlene: That's OK though, you got the right answer. Now the next, où se trouve la pâtisserie à laquelle Jean-Yves a téléphoné ? [where is the pastry shop located that Jean-Yves telephoned] what does the question ask?

This interaction begins with Arlene reading the question aloud and then reviewing the student's response. Next the mediator asks the student to explain why she responded in such a way. Liz responds, explaining that she

only heard a part of the correct answer. Arlene, seeing a mediational opportunity, advances the listening text to the appropriate point where the address of the establishment (the location mentioned in the question being mediated) is mentioned. Without verbal intervention from Arlene, Liz is able to determine that she misunderstood and is then able to self-correct. Arlene closes this passage with praise and moves the mediation to the following quiz question.

As with the previously detailed interactions, there is not just one sole strategic behavior present. In fact, there are four distinct strategic behaviors represented in this interaction. Arlene speaks a key phrase and at the same time moves the mediation along. Arlene ends this passage with a targeted listening of the audio text that leads Liz to understand the audio in a more complete manner through asking Liz to justify her answer. Arlene is able to assist Liz in becoming self-regulated. Evidence of self-regulation is shown when Liz is able to explain her misunderstanding after having listened to the text once more.

Support for the existence of this strategic behavior is offered in both the researcher's journal and a post mediational session focus group. Firstly, in the researcher's journal, it is noted,

the mediators all are asking their students to explain why they chose an answer, despite it being right or wrong. I say this is because of the time we spent in the training on seeing if a student guessed a correct answer or not.

Moreover, Eloise spoke to the importance of knowing if a student "got an answer right for the right reasons." The other participants all agreed that this

was an important part of determining if a student truly understood a question or concept.

Ask Student to Translate

The strategic behavior, *ask student to translate*, is defined as a mediator suggesting that a student translate a word or phrase from French or English or vice versa. In the mediational sessions between Paul and Brittany there are four separate instances of this strategic behavior. In the mediational sessions between Arlene and Liz there are two instances of this strategic behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 45. Dyadic distribution of ask student to translate in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	4
Arlene	Liz	2
Total		6

The behavior of asking a student to translate, as illustrated in the interaction between Paul and Brittany, is included in the following section.

*Paul :...she said, nous fermons à 19h tous les jours sauf le dimanche [we close at 7pm everyday except for Sundays]
 Brittany: tous les jours ?[everyday]
 Paul: Um hum, means what ?
 Brittany: Two or three times a week?
 Paul: tous—les—jours, toutes les chaise [all of the chairs] (says pointing to the chairs in the room) tous les étudiants [all of the*

students], tous les jours [everyday], tous, tous, non ?[all, all, no ?]

Brittany: All of them together?

Paul : yes so, nous fermons à 19h tous les jours [we close at 7pm everyday], meaning ?

Brittany: we close every day of the week

Paul: à 19h [at 7pm]

Brittany: yeah, at nineteen

Paul: yes, 7pm

Brittany: ok, 7pm

This excerpt begins with Paul asking Brittany to translate a sentence. At first, Brittany's translation is incomplete. However, Paul questions again and Brittany notices her omission and repairs her translation. In order ensure complete understanding on the part of Brittany, Paul converts time from the twenty-four hour clock to the twelve-hour clock. At the closing of this interaction, Paul adds another phrase at the end of the phrase he originally asked her to translate. Brittany responds by translating the added piece into English.

The way that Paul goes about providing this mediation in the passage is the same manner suggested by Aljaafreh and Lantolf (1994). That is, Paul's mediation is contingent on Brittany's mediational needs. When she omits some information, Paul probes with the aim of discovering her level of comprehension. When it is clear that she has understood the phrase he moves on to a subsequent question. This passage also reflects what Lidz's concept of psychological differentiation (1991). Here the mediator must be aware that it is the student's job to complete the task and not the mediator's. Paul's attempts at leading Brittany to the correct answer illustrate this.

An additional example of asking a student to translate as a strategic behavior is seen in the mediation session between Arlene and Liz.

Arlene: Very nice, The next question, En faisant des courses, à qui Jean-Yves rend-il un service?[While running errands, who does Jean-Yves do a favor for ?] What does that mean?

Liz: When he's doing his errands, who does he something, something

Arlene: Qu'est-ce que c'est un service?[What is a favor ?]

Liz: I don't know.

Arlene: Par exemple, tu a cassé la chaise. Tu dis, Jeannie, s'il te plaît, est-ce que tu peux amener ma chaise pour la faire réparer ? [For example, you broke the chair. You say, Jeannie, please, can you take my chair in order to have it repaired ?]

Liz: la chaise ?[chair ?]

Arlene: rendre un service, c'est quand quelqu'un t'aide [to do a favor, its when someone helps you]

Liz: no

Arlene: Tu dis, est-ce que tu peux m'aider ? Est-ce que tu peux faire quelque chose pour moi ? [You say, can you help me ? Can you do something for me ?]

Liz: No, I get nervous when we do this. I don't know why do that. Ha ha

Arlene: rendre un service [to do a favor], c'est to do a favor

The passage begins with Arlene asking Liz to translate the question. Liz responds, but is unable to translate the entire phrase. Next, Arlene responds, in French, directly asking Liz what a specific word means. When Liz responses that she is unfamiliar with that word, Arlene then attempts to illustrate the meaning of the word by using it in context. Liz still does not understand and then sates that she is becoming nervous because she has not comprehended the question. Arlene responds to Liz's nervousness by providing the translation, when Liz is unable to do so.

The prevailing strategic behavior in this interaction between Arlene and Liz is *ask a student to translate*, but there are also other strategic behaviors

present. For example, when it becomes evident to Arlene that Liz is not familiar with the word “service” (favor), she switches to French in order to illustrate the meaning of the word. When this is not successful, she uses the strategic behavior of *direct translation*. In this case from French to English, to ensure that Liz has understood the meaning of the word as well as the entire question.

As with the pre- and post-DA training sessions, the L1 has been used to scaffold the L2 when mediators and students participate in the strategic behavior labeled *direct translation*. Anton and DiCamilla (1998) showed that the use of the first language facilitates joint activities when students are involved in peer revision of writing. Moreover, Brooks and Donato (1994) found that the first language was used to comment on L2 use to form a joint understanding of the task and to set goals

Comprehension Check

In the study, a *comprehension check* is defined as a mediator asking a question or providing a student with some kind of prompt with the aim of gauging a student’s understanding of a word or concept. Paul and Brittany’s mediational intervention has one sole comprehension check, while Arlene and Liz’s interactions contain seven separate instances of comprehension checks. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 46. Dyadic distribution of comprehension check in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	1
Arlene	Liz	7
Total		8

In the following section the sole comprehension check between Paul and Brittany is detailed.

Paul: And he [the researcher] said that at the beginning to that you might have trouble with the last one. En faisant des course, à qui Jean-Yves rend-il un service ? [While running errands, who does Jean-Yves do a favor for] Do you understand the question by itself?

Brittany: I would say when he goes shopping, when they go shopping, who will they go with? Or who will help them check out. Maybe? I don't know.

Paul: The first part, yes you're right. That's the hard when you know, because, faire des course means to go shopping. À qui Jean-Yves rend-il un service [Who does Jean-Yves do a favor for] means something else. Rendre un service [to do a favor], for example you need more coffee and you ask me oh, can you get me a coffee?

Brittany: rendre a service?

Paul: yes, ok, so...

The interaction began with Paul referring to a discussion that he and the researcher had before the mediation began. During their talk, the researcher shared with Paul that several students had trouble with a particular question. It is to that discussion that Paul referred in the beginning of this passage. He then repeated the question and checked to see if Brittany

understood. From her response it is clear to Paul that she understood only part of the question. Next, he confirmed that part that she correctly understood and attempted to lead Brittany to an understanding of the last part of the question (the part she misinterpreted). She was then able to respond, but in a non-English like form. Paul accepted this translation and decided to move on.

While the main purpose of this interaction between Paul and Brittany seems to be a comprehension check, there are several other strategic behaviors embed within it. For instance, this passage began with Paul attempting to create a collaborative frame. He did this by telling Brittany that the item they are presently reviewing is a difficult one for the other students at her level. He then completed a comprehension check. Brittany responded, but in a partially correct manner. Therefore, Paul identified the part that Brittany misunderstood and used the unknown term in context. After this, Brittany understood the term. Brittany showed her understanding through the use of a somewhat mal-formed English phrase.

The following passage also illustrates the strategic behavior comprehension check that occurred between Arlene and Liz.

Arlene: Did you get the gist of the text ?

Liz: If the last one, it seems like it was a news report about a helicopter that crashed and then there's something with the church and maybe a bomb. And then there was something about environmentalism. There's also something to do with politics or the government. And then I felt like it summarized everything because it was over.

Arlene: What about the first one, what's your memory about it?

Liz: that was the one with the time and the directions. He was calling someplace to find something and about the time and

something about where they were located. I don't remember the last two questions.

Arlene: Did you get Jean-Yves fait des courses (Jean-Yves runs errands) ?

Liz: Yes that's familiar that's the first one.

Arlene: I think that you did more than you were supposed to.

Liz: I'm sorry

Arlene: That's all right to the contrary it is very good. On this one you did real good. You made three of four. That's pretty good. You see, the first three they are right. It's just the last one.

This passage begins with Arlene asking if Liz understands the main ideas of the listening text. In response Liz begins talking about a different listening activity. Arlene realizes this and directs Liz to talk about the first listening text. Liz then recounts the main ideas of the first listening activity and Arlene then inquires about a specific question in the first activity. Once Arlene has confirmed that Liz has indeed done additional listening activities that were not intended for her level of language experiences, she shares this fact with Liz.

The opening line of this interaction was dual coded as both the creation of a collaborative frame and a comprehension check. This is because, according to the context of the interaction, it seems to have two purposes. The first one is to create a relaxed environment where learning can occur and the second one is to assess Liz's overall comprehension of the listening text. When Liz responds with an account of an activity that was intended for students in the fourth level of language experience, Arlene counters with a more specific comprehension check. To make sure that both she and Liz are discussing the same activity, Arlene makes one more

comprehension check. Once Liz responds, Arlene shares with her the fact that she did too many activities.

Create Collaborative Frame

Thematic analysis of data collected from mediational sessions with students at the first level of language experience, reveals a strategic behavior that was coded as *create a collaborative frame*. This theme is defined as the mediator working to establish a relaxed learning environment. There are three instances of the emergence of this strategic behavior in both the Paul and Brittany dyad and the Arlene and Liz dyad. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 47. Dyadic distribution of create collaborative frame in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	3
Arlene	Liz	3
Total		6

Because an example from Arlene and Liz’s mediational session was provided in the previous section, the sole example given in this section will be from Paul and Brittany’s mediation. This example is founding the following text.

Paul: Est-ce que c'était facile?[Was it easy ?]

Brittany: oui [yes]

Paul: On va voir. [We'll see.]

Brittany: there were some difficulties with the last question.

Paul: You did the first four questions right?

Brittany: yes

Paul: all right, so we're going to talk about your answers. You did a very good job.

Paul begins this interaction in French. He asks a general question to Brittany to which she responds in the affirmative. Paul continues, still in French, letting Brittany know that they will look at the questions together. Next Brittany responds, this time in English, telling her mediator that she had trouble with the last question. Paul tells her they will discuss all of her answers and ends by praising her work.

Within this interaction there are two different strategic behaviors present. Firstly, Paul creates collaborative frame with Brittany by asking a general question. Their discussion continues and then ends with Paul praising her work. It is interesting to note that both Paul and Arlene begin their mediational sessions with the creation of a collaborative frame. The prevalence of such behavior is illustrated by an observation in the researcher's journal. He remarks, "the mediators all want to engage in small talk and niceties with their students. In particular, I remember a time where Paul began talking his student in the hallway, before the mediation began and the camera was shut off."

The presence of the strategic behavior entitled create collaborative frame in the level one mediational sessions is also found in the work of Lidz

(1991). She labels this effective mediational behavior *praise/encouragement* and argues that this is done in order to keep the child's self-esteem high. Additionally Jensen and Feuerstein (1987) feel that in the creation of the MLE a component of labeled *feelings of competence* may be present. Jensen and Feuerstein (1987) argue that three behaviors must be present for the creation of the MLE; intentionally and reciprocity, transcendence and mediation of meaning. Other behaviors may be present depending on the mediator and the needs of the student. The behavior *feelings of competence* is similar to the behavior that emerged in this study labeled *create collaborative frame*.

Create Sense of Accomplishment

When a mediator praises a student for a specific achievement, it has been coded as *create sense of accomplishment*. In the Paul and Brittany case, this strategic behavior manifested itself on seven different occasions. In the mediational session between Arlene and Liz there were four instances of this theme. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 48. Dyadic distribution of create sense of accomplishment in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	7
Arlene	Liz	4
Total		11

In the subsequent sections examples from both the Paul and Brittany case, as well as the Arlene and Liz case are outlined. An example from Paul and Brittany's interaction directly follows.

Paul: You did the first four questions right?

Brittany: yes

Paul: all right, So we're going to talk about your answers. You did a very good job.

Notice that this passage is part of the larger passage used to illustrate the theme create collaborative frame. This excerpt begins with Paul asking a question to which he knows the answer. Brittany answers in the affirmative and then Paul describes the way in which mediation will progress. He ends this exchange by praising Brittany's work through the activity.

In this interaction Paul's creation of a sense of accomplishment in Brittany occurs within his establishment of a collaborative environment in which to work. As with the other strategic behaviors that have been discussed thus far, this behavior does not occur in isolation. Indeed, in this interaction the focus seems to be the creation of the collaborative frame and praise the student, or creating a sense of accomplishment in them, is a part of this process.

The following passage details an interaction between Arlene and Liz. During this interactions Arlene creates a sense of accomplishment in Liz by praising her unassisted and assisted performance.

Arlene: Did you get Jean-Yves fait des courses [Jean-Yves runs errands] ?

Liz: Yes that's familiar that's the first one.

*Arlene: I think that you did more than you were supposed to.
Liz: I'm sorry
Arlene: That's all right to the contrary it is very good. On this one you did real good. You made three of four. That's pretty good. You see, the first three they are right. It's just the last one.*

This passage is the part of the passage that previously appeared in the discussion of the strategic behavior entitled comprehension check. In this interaction Arlene begins with a question designed to anchor Liz in the first activity that she completed. Liz did additional activities that were not targeted to her language experience level. Liz responds that she is familiar with that activity and then Arlene informs Liz that she went beyond the scope of that she was to do. Liz apologizes, to which Arlene replies that she did well. Specifically she answered three of the four questions correctly. The interaction ends with Arlene revealing which question Liz incorrectly answered.

Direct Translation by Mediator

During the course of the mediation, the mediator translated from French to English or vice versa. When it occurred it was coded as *direct translation by mediator*. In the mediational session between Paul and Brittany there are three occurrences of direct translation, while in the Arlene and Liz dyad there is one instance of this strategic behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 49. Dyadic distribution of direct translation by mediator in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	3
Arlene	Liz	1
Total		4

The following excerpt is from Paul and Brittany's interaction. It is given with the aim of illustrating a mediator directly translating from French to English or vice versa.

Paul: So that's good they give you a chance to see, that is exactly the point of this exercise. That's good you're right it's a friend. Why did you pick voison [neighbor]]?
Brittany: If I just picked randomly
Paul: voison means neighbor.

At the beginning of this passage Paul compliments Brittany on her performance thus far. He also reiterates the goal of this activity, which he says is, "give you a chance to see." This means that by working with the mediator, Paul believes that a student will gain a deeper understanding of the material. He again praises her for showing her understanding of two synonyms in French; copain and ami (friend). Following his compliment he asks Brittany to detail the reason she chose her answer. She responds that her choice was just a random guess. It is at that point that Paul directly translates her response into English.

Even though this passage is included to illustrate the theme direct translation by mediator there are a number of strategic behaviors present. For instance, Paul begins the passage by creating a sense of accomplishment in Brittany. He praises her for coming to the understanding of a previously unknown word. Next, he creates a collaborative frame by detailing what he considers to be the goal of the exercise. He then again creates a sense of accomplishment in Brittany by praising her, and follows by asking her to justify her response. When she does, she reveals that her choice was just a random guess. When Paul realizes this he decides to provide a direct translation of the term.

The following passage also illustrates the strategic behavior direct translation by mediator. However, this example comes from the mediational session between Arlene and Liz.

Arlene: rendre un servie, c'est quand quelqu'un t'aide [to do a favor, it's when someone helps you]

Liz: no

Arlene: Tu dis, est-ce que tu peux m'aider [You say, can you help me] ? Est-ce que tu peux faire quelque chose pour moi [Can you do something for me] ?

Liz: No, I get nervous when we do this. I don't know why do that. Ha ha

Arlene: rendre un service [to do a favor], c'est to do a favor

This passage occurs just after Arlene has noticed that Liz has not understood the last question of the activity. Arlene attempts to lead Liz to an understanding of the phrase by using the phrase “rendre un service” (to do a favor) in a sentence. Notice that Arlene does so in French. Liz responds in the negative to Arlene's statement, and Arlene seems to interpret this as an

indication of her lack of comprehension. Arlene again asks a question that gets at the essence of the phrase that Liz does not understand. Liz responds by stating that she is becoming nervous. It is at that point that Arlene provides Liz with a translation of the phrase.

Just as the passage between Paul and Brittany contains more than one strategic behavior, so do the passage from the mediational session between Arlene and Liz. Arlene begins this passage by using the problematic phrase in a sentence. This sentence is entirely in French. Liz indicates that she has not understood what Arlene has said and offers more mediation' still in French. Liz responses that this is making her uncomfortable and at that point, Arlene provides a direct translation from French to English.

In previous sections the necessity of using the L1 in the classroom, as described by Antón and Dicamilla (1999) and Brooks and Donato (1994), in collaborative activities has been detailed. The use of L1 as a teaching tool was outlined by Cook (2001). She believes that the use of the mother tongue can be used by “teachers to convey meaning” and that “the first language can be a useful element in creating authentic L2 users rather than something to be shunned at all costs.” (p. 402) The strategic behavior *direct translation by mediator* reflects Cook’s understanding of L1 use in the language classroom.

Elicit Student Response

Thematic analysis revealed the presence of a strategic behavior that has been entitled, *elicit student response*. This behavior is defined as the mediator leading a student to an understanding of some thing that they

previously did not know. It differs from the strategic behavior entitled *direct translation*, in that *elicit student response* offers feedback that is more implicit. *Direct translation* offers feedback that is very explicit. In the mediational session between Paul and Brittany there are five occurrences of elicit student response, while in the Arlene and Liz dyad there are three instance of this strategic behavior.

Figure 50. Dyadic distribution of elicit student response in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	5
Arlene	Liz	3
Total		8

The following passage, taken from the mediational session between Paul and Brittany illustrates this strategic behavior.

Paul: Could you translate the question now?
Brittany: Who works better to help them go shopping Or checking out maybe. Where's he going? Is he going to the supermarket? He's going to the pastry shop.
Paul: Yes, he's going to the pastry shop. That's right. So, by going there...
Brittany: Who is it that he knows that's there?

The previous passage takes place after Paul has asked Brittany to translate a question. From her translation it is evident that she has not fully comprehended what is being asked of her. Therefore, Paul decides to try to

lead Liz to an understanding of the question by speaking an incomplete sentence and pausing for her to complete it. However, unable to do so, she instead asks a question that reflects that she still does not comprehend what is being asked of her.

The sole strategic behavior on the part of the mediator that is present in this passage is elicit student response. However, it is directly located after Paul has asked Brittany to translate a phrase into English.

Another example of the strategic behavior, Elicit Student Response is found in the mediational session that took place between Arlene and Liz. To further illustrate this theme, a passage from their interaction is included below.

Arlene: rendre un service, c'est quand quelqu'un t'aide [to do a favor, it's when someone helps you]

Liz: no

Arlene: Tu dis, est-ce que tu peux m'aider [You say, can you help me] ? Est-ce que tu peux faire quelque chose pour moi [Can you do something for me] ?

Liz: No, I get nervous when we do this. I don't know why do that. Ha ha

Arlene: rendre un service [to do a favor], c'est to do a favor

In this passage Arlene describes the action of doing someone a favor in French. Liz becomes blocked by a word that she seemingly does not know that Arlene included in her explanation. Arlene then focuses Liz's attention back on the purpose of her mediation on the passage. She focuses namely on the reaching a shared understanding of the term "rendre un service (to do a favor)." Liz replies in the negative, indication that she has not understood Arlene's speech. Arlene again tries to lead Liz to an understanding of the

problematic phrase but is unable to do so on Liz confides that activities, such as the one in which she is currently participating, make her nervous. Then Arlene abandons her attempts at leading Arlene to the answer and instead provides it for her.

While the prevailing goal of this passage is to illustrate the strategic behavior entitled elicit student response, there are a number of other themes contained within this mediational sample. The passage begins with Arlene's attempt to illustrate a situation in which someone might do her a favor. This elicitation of a response from Liz is unsuccessful once it becomes clear that Liz has not understood a key word in Arlene's mediational attempt. Arlene then attempts a more explicit form of elicitation, which is still not understood by Liz. Indeed, Liz's misunderstanding leads her express her displeasure at what she considers to be an uncomfortable situation. It is at this point that Arlene becomes the most explicit in her elicitation of Liz's response. Her directly translates the phrase from French to English.

This strategic behavior is in keeping with Aljaafreh and Lantolf's (1994) guidelines that urge mediators working within the ZPD to structure their mediation to be contingent on the learner's needs. This means that mediators should provide hints and prompts that lead students to the correct answer rather than simply providing them with the answer.

Mediator Speaks Key Phrase

When a mediator repeats a phrase that is important to the students' understanding of a word, concept or the context of the listening text, this

strategic behavior has been defined as *mediator speaks key phrase*. In the mediational session that occurred between Paul and Brittany there were seven occurrences of this behavior, while in the interaction that took place between Arlene and Liz there are four instances of this strategic behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 51. Dyadic distribution of mediator speaks key phrase in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	7
Arlene	Liz	4
Total		11

The following example, taken from the mediational session between Paul and Brittany is offered to illustrate this strategic behavior.

Paul : yes so, nous fermons à 19h tous les jours [we close at 7pm everyday], meaning ?
Brittany: we close every day of the week
Paul: à 19h [at 7pm]
Brittany: yeah, at nineteen
Paul: yes, 7pm
Brittany: ok, 7pm
Paul: Nous fermons tous les jours à 19h sauf le dimanche [we close at 7pm everyday except for Sundays]
Brittany: except for Sunday

This same passage was used to illustrate the strategic behavior called ask student to translate, in a previous section. In this excerpt, Paul in working

with Brittany on a question that she answered incorrectly. He begins with asking her to translate a phrase. She does so, but incompletely. Paul then supplies the information that she omitted. Once he believes that she has understood the phrase, he adds more to it. Brittany shows she has comprehended the sentence by accurately translating the item in question.

In this passage Paul makes use of several strategic behaviors in order to help Brittany achieve a deeper understanding of the listening text. He begins by asking her to translate a specific phrase. She is able to only partially complete this task. Therefore, he continues to probe by repeating parts of a key phrase. The complete understanding of this phrase is vital in order to fully understand the question and all the possible responses. Once Brittany has demonstrated her comprehension of the separate parts of the key phrase, Paul repeats the key phrase in its entirety. At that point Brittany provides Paul with a translation of the sentence, although in a piecemeal fashion.

Another example of the strategic behavior mediator speaks key phrase is found in the mediational session between Arlene and Liz.

Arlene: Great (listening) he says, quand fermez-vous [when do you close]?

And she says nous fermons à 18h tous les jours sauf le dimanche [we close at 6pm everyday except for Sunday].

Liz: ok

Arlene: Did you get that?

Liz: Yes, I guess so.

Arlene: Do you understand what I mean?

Liz: I guess so

Arlene: he says à quelle heure fermez-vous [at what time do you close] ?

Liz: What time do you close at?

Arlene: And she says nous fermons à 18h tous les jours sauf le dimanche [we close at 6pm everyday except for Sundays]

Liz: Oh, she says we close at eighteen o'clock every day except for Sunday

Arlene: So how did you get from here to dix-huit heure [6pm]?

Liz: I have no idea then...

Arlene: So basically what you heard is le dimanche [every Sunday]?

Liz: yeah

Arlene: interesting huh?

Liz: yeah

Directly preceding this passage, Arlene has discussed Liz's test-taking strategies. At the beginning of this passage mediation takes the form of a discussion of the opening and closing times of a shop. Arlene begins the mediation by having Liz listen to a specific section of the listening text. After having done so, Arlene repeats what she considers to be some important information contained in the listening text. Next Liz affirmatively replies and Arlene asks two different questions in order to gauge Liz's comprehension. When Liz answers in a noncommittal manner, Arlene decides to probe further by again repeating a phrase from the listening text. It is at that time that Liz provides an English translation of what Arlene has said. In response, Arlene repeats the same phrase again but this time making it more complete. That is to say, she includes all the information that was in the listening passage.

As with most of the other examples of mediators' strategic behaviors illustrated in the previous sections, there is not just one behavior. The same is true of this passage. Arlene begins this interaction with some targeted listening. After having completed the targeted listening she repeats two key

phrases. Liz replies, but it is unclear to Arlene whether or not she has understood. Therefore, Arlene performs two comprehension checks. Because Liz's answers seem somewhat ambiguous, Arlene repeats the key phrase again. It is at that time that Liz translates the phrase into English after the successful translation. Arlene asks Liz to translate another key phrase that she has repeated. Liz does so successfully.

By repeating key phrases, the mediators outlined in this section (Paul and Arlene) are directing the attention of their students to specific groups of words that they feel are important to understand. This is similar to Lidz's (1991) notion of task regulation where the mediator manipulates the task so that it is more accessible to the student. The same is true of the MLE component that Jensen and Feuerstein (1987) term as mediation of meaning. When a mediator uses mediation of meaning they direct a student towards information that the mediator feels is necessary for an understanding of the task, its successful completion and further cognitive development.

Moving the Mediation Along

During their mediational session with students at the first level of language learning experience, mediators brought their students back on task or changed the direction of the mediation. This was coded as *moving the mediation along*. There were no instances of this behavior between Paul and Brittany. With Arlene and Liz there were three instances of this behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 52. Dyadic distribution of moving the mediation along in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	0
Arlene	Liz	3
Total		3

An example of the interaction between Arlene and Liz is given below with the aim of illustrating this strategic behavior of moving the mediation along.

Arlene: So what did you do? Did you listen to the text first or did you read the questions first?

Liz: I tend to look at the questions first so that I can remember the answers and then I listened to the text. And then I try to have the text up on the screen so that I can look at the answers while listening and if I still don't get I try to listen to the text again and keep the answers in mind.

Arlene: If so how did you develop the strategies? Have you always done this?

Liz: That's how I've always been told. While your listening to a text to read over the questions first that way when you hear the answer you already have it. So you'll be like oh, that makes sense. That's the way that I did in Spanish in high school, I guess.

Arlene: great (listening) He says, quand fermez-vous [when do you close]? And she says nous fermons à 18h tous les jours sauf le dimanche [we close at 6pm everyday except for Sundays].

Arlene begins this interaction by questioning Liz about her strategy use in answering the questions. Liz responds by confirming Arlene's understanding of how Liz arrived at the correct answer. In the following

sentence, Arlene poses a rhetorical question to which Liz responds. It is at that point that Arlene decides to switch their conversation to that of the next question.

There are two strategic behaviors contained in this passage. Firstly, thematic analysis reveals the presence of the theme entitled *ask student to describe strategy*. Secondly, the theme *moving the mediation along* was uncovered. This first theme is illustrated by Arlene's initial question, as well as her follow up question. The second theme is shown in the last sentence of the passage where Arlene decides to move the mediation along to the next question.

In the previous section the strategic behavior, mediator speaks key phrase, is likened to Jensen and Feuerstein's (1987) component of the MLE that they call mediation of meaning. The researcher in this study puts forth that two of the strategic behaviors that emerged from this study (mediator speaks key phrase and moving the mediation along) can be considered both to be part of the component of the MLE called mediation of meaning. In mediation of meaning a mediator directs the student to what is important to understand. This can be done by speaking a key phrase to highlight what the mediator considers to be an important part of the task or by keeping a student on task, as mediators in this study are doing when they are moving the mediation along.

Review Individual Question

When a mediator reviewed with a student an individual question that they either correctly or incorrectly answered during their unassisted performance this is defined as *review individual question*. Thematic analysis of the mediational session between Paul and Brittany uncovered four instances of this theme. Additionally, four instances of this theme were also found in the interaction between Arlene and Liz. In both cases, this number corresponds to the number of questions found in the activity designed for students at the first level of language experience. It is interesting to note that unlike the pre-training mediational sessions, in these interactions, all questions (even those that were answered correctly) were reviewed. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 53. Dyadic distribution of review individual question in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	4
Arlene	Liz	4
Total		8

The following passage is taken from the interaction that occurred between Paul and Brittany and illustrates the review of a question that was answered incorrectly.

Paul : En faisant des course, à qui Jean-Yves rend-il un service [While running errands, who does Jean-Yves do a favor for] ? Do you understand the question by itself?

Brittany: I would say when he goes shopping, when they go shopping Who will they go with? Or who will help them check out. Maybe? I don't know.

Paul: The first part, yes you're right. That's the hard when you know because; faire des courses means to go shopping. À qui Jean-Yves rend-il un service [who does Jean-Yves do a favor for] means something else. Rendre un service [to do a favor], for example you need more coffee and you ask me oh, Can you get coffee?

Brittany: rendre a service [to do a favor]?

Paul: yes, ok, so could you translate the question now?

Brittany: Who works better to help them go shopping or checking out maybe. Where's he going? Is he going to the supermarket? He's going to the pastry shop.

Paul: Yes, he's going to the pastry shop. That's right. So, by going there...

Brittany: Who is it that he knows that's there?

Paul: No, rendre un service is to do a favor like you said. So by going grocery shopping who is Jean-Yves...

Brittany: who is he going to help shop?

Paul: Yeah, or do a favor for

Brittany: To do a favor for

Paul: Yeah exactly

Brittany: and I picked up in the word part he kept on saying, he didn't say sa copine [his friend]. If I can't... I'm hearing ami, ami [friend, friend]

Paul: That's why, ami, copine, [friend, pal] it's the same thing

Brittany: Okay I see

Paul begins his review of a question that was incorrectly answered by Brittany by reading the question aloud, and then asking if she understood. She responds with a translation that is only somewhat accurate. Paul mediates Brittany by telling her that the initial part of her translation is acceptable, but the second part is incorrect. He then translates what he considers to be a different structure in French. Moreover, he illustrates another difficult structure by explaining it in French. Brittany accepts the

mediation and offers a translation that is somewhat non-native like in English. Paul accepts her translation of this phrase and again asks her to translate the entire question. She again attempts to do so, but is unable to fully capture the idea of the sentence. Therefore, Paul leads her to an understanding of the question. Once she understands the question she is unable to answer it correctly. She states that she did not hear any of the answers in the listening text. It is at that point that Paul tells her that “ami (friend)” is a synonym for the word copain (pal). Then Brittany is able to understand why the correct answer is correct, even though the specific word in the listening text is not found in the question.

This example is particularly rich in terms of strategic behaviors on the part of the mediator. This excerpt begins with Paul conducting a comprehension check. He then attempts to elicit a response from Brittany. He is successful in doing so but her response is not entirely correct. Therefore, he asks the student to translate. When she does so, he creates a sense of accomplishment in her by praising her attempt. Paul then again attempts to elicit a response in Brittany. During the course of this elicitation he also asks her to perform a direct translation. Once she successfully does so he again words to create a sense of accomplishment in her. However, even though she fully understands the question she is still unable to choose the appropriate response. Paul then uses an unknown word in context, with the aim of leading Brittany to an understanding of the correct answer. Once

she understands the unknown word, he creates a sense of accomplishment in her.

The previous paragraphs replicate Paul's review of a question answered incorrectly in his mediational session with Brittany. The following excerpt is a review of a question answered correctly. This extract is from the first language experience level, mediational session between Arlene and Liz.

Arlene: So, do you remember what this one is about?

Liz: That was the one where we find out about the date. That's what I was looking for, and it was talking about the location. It was talking about what it was near. I did think that he said it was near his friend's house.

Arlene: Let's take a look at the first question. Quand la maison de la presse est-elle fermée [when is the maison de la presse closed]? Did you understand this question?

Liz: What time the place closes?

Arlene: right and you got the right answer which is le dimanche à 18h [Sundays at 6pm].

Liz: yes

Arlene: How did you get to that answer?

Liz: I heard the dimanche [Sunday] part and that's how I picked up on that, but definitely the dimanche [Sunday] part is the one that stuck out.

Arlene: So what did you do? Did you listen to the text first or did you read the questions first?

In this mediational instance Arlene is investigating Liz's comprehension of the first question in the activity. This is a question that Liz answered correctly. Arlene's first question is rather vague, and therefore so is Liz's answer. Arlene then follows up with a more specific question that focuses on Liz's understanding of what is being asked of her. In turn, Liz translates the question and Arlene confirms the translation and provides Liz with the correct answer. This excerpt concludes with Arlene asking Liz how she arrived at the answer.

Within this selected passage, there are two strategic behaviors. That is, in their interaction Arlene reviews an individual question and asks Liz to identify the strategy that she used in arriving at the correct answer. Arlene's review of the question is found at the beginning of this excerpt. Once Liz provides an quasi-correct translation, Arlene provides Liz with the correct one. Simply giving Liz the correct answer does not follow with Aljafreeh and Lantolf's (1994) belief that mediation should range from implicit to explicit. By not attempting to elicit an explanation of the reason that Liz chose this answer, Arlene was not able to create rich dialogic engagement. Moreover, it is possible that the occupation with Liz's strategy use, as described in an earlier section, encourages object regulation instead of self-regulation. Vygotsky (1978) argues that the appropriation of self-regulation, or the movement of other or object regulation to self-regulation, is the primary way in which humans develop higher order thinking skills.

Student Requests Mediation

The theme *student requests mediation* is defined as a student asking a specific question in either French or English. In the mediational sessions between Paul and Brittany there are four instances of this mediational behavior. While in the intervention between Arlene and Liz there are three instances of Liz requesting mediation. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 54. Dyadic distribution of student requests mediation in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	4
Arlene	Liz	3
Total		7

An example passage is given below, from the mediation between Paul and Brittany, where Brittany asks Paul for mediation. No example from the Arlene and Liz dyad will be given, because the way that Liz requests mediation is essentially the same as Brittany.

Paul: Yes, when it's open. Do your member that?

Brittany: no

Paul: Let's see if we can find that. (listening) OK, what did she say? Do you remember? Do you want to listen to it again? (listening) no?

Brittany: Yes, I just picked up on keywords right now. If I can always get all of it.

Paul: Oh, That's right You're in French one I remember. She said, nous fermons à 19h tous les jours sauf le dimanche [we close at 7pm everyday except for Sundays]

Brittany: tous les jours [everyday] ?

Paul: Um hum, means what ?

Brittany: Two or three times a week?

This mediation excerpt begins with Paul asking Brittany a direct question to check her understanding. She answers that she does not remember the phrase, so Paul provides her with some targeted listening. He then performs another comprehension check and she still has not understood. Instead she states that she got the gist of the passage. At this point Paul attempts to build a collaborative frame with her, by stating that she

has done well for her level of French. He then repeats what he considers to be a key phrase. Brittany picks up on the key phrase, but still does not understand it. She then requests mediation by repeating the phrase as a question. Paul does not, in this instance, answer directly, but instead asks her to translate the phrase. She does so, but is unsuccessful. Her repetition of the key phrase in a question form is a subtle request for mediation.

Targeted Listening

Thematic analysis of the data collected from the mediational sessions between Paul and Brittany, as well as those between Arlene and Liz, yielded a strategic behavior entitled *targeted listening*. This behavior is defined as a mediator leading a student to the specific point in the listening text so that they can re-listen to what the mediator believes is a troublesome word or structure. In the mediational session between Paul and Brittany there are two occurrences of targeted listening, while in the Arlene and Liz dyad there is one instance of this strategic behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 55. Dyadic distribution targeted listening in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	2
Arlene	Liz	1
Total		3

In order to illustrate this strategic behavior examples from the dialogic engagement between Paul and Brittany, and also between Arlene and Liz are detailed in the following paragraphs. The first example comes from the Paul and Brittany dyad.

Paul: Yes, when it's open. Do your member that?

Brittany: no

Paul: Let's see if we can find that. (listening) OK, what did she say? Do you remember? Do you want to listen to it again?

(listening) no?

Brittany: Yes, I just picked up on keywords right now.

Paul: Oh, That's right you're in French one I remember. She said, nous fermons à 19h tous les jours sauf le dimanche [We close at 7pm everyday except for Sunday].

At the onset of this interaction, Paul has asked Brittany a question and she is unable to answer it correctly. Therefore, Paul decides to replay a section of the listening text where the answer to his question located. After having listened to the text, Paul asks Brittany a different version of the question that he asked previously she is still unable to answer. In fact this time she does not respond to Paul's query. Next Paul decides to rewind the listening text to a section where he believes the answer to his question is located. After this second time, Brittany is still unable to answer, but she does report having picked up on some key words. Then Paul repeats the phrase where the answer is located.

There are a number of different strategic behaviors that surround Paul's *targeted listening* mediation with Brittany. Indeed, the interaction begins where Paul asks Brittany a question; he asks her to recall some

specific information. When she is unable to do so, her engages her in targeted listening. Then he asks her to repeat what the voice in the recorded text said. She is unable to do this once more. So, they do targeted listening again. She responds, but not in the manner Paul anticipated. Therefore, he repeats a key phrase to her.

The strategic behavior of Targeted Listening is also illustrated in the mediational session between Arlene and Liz. It is an excerpt of that interaction that is found in the following passage.

Arlene: Ok so the next question, quelle est l'adresse de la maison de la presse [what is the maison de a presse's address]? Right ? and you said dix-neuf rue du pape [nineteen rue du Pape], So what does that mean?

Liz: What's the address of the place, I remember being a little confused about one because I didn't think of numbers matched up with the actual address but still put it because I heard the du pape part. But I thought that it said dix-huit (eighteen) and not dix-neuf (nineteen), but I put dix-neuf (eighteen) (listening) oh, that's not right

Arlene: That's OK though, you got the right answer.

This interaction begins with Arlene prefacing the upcoming mediation. She prepares Liz to be mediated on the subsequent question. She then repeats the question, and then repeats Liz's answer. After having repeated her answer, Arlene asks Liz to explain the reason that she chose this answer. Liz explains that even though she answered correctly she still does not fully understand the question and the listening text that helped her answer this. At this point, Arlene finds a spot in the audio recording to which Liz was referring. After listening again with Arlene, Liz is able to self-correct and this shows a greater comprehension that she had previously. Arlene ends the interaction by praising Liz's attempt.

Within this specific interactional episode, there are five separate strategic behaviors in play. Arlene begins by speaking a key phrase to mediate Liz's understanding of the question. At the same time she is signaling a change in mediation. By doing this, Arlene is moving the mediation along to the subsequent question. Once Liz's misunderstanding of the listening text that is associated with the question is evident. Arlene decides to engage in targeted listening. That is, she selects a section from the audio recording that she believes will help Liz in her comprehension of the spoken text. Directly after the targeted listening, Liz is able to self-correct, or she becomes self-regulated. Arlene ends this interaction by praising Liz.

This excerpt of a mediational session illustrates DA's ability to uncover subtleties in student comprehension that other traditional forms of assessment do not provide. Following Poehner (2005), Arlene's mediation with Liz uncovers the fact that, despite having correctly answered the question, Liz does not possess a full understanding of the nuances (the numbers included in the address) in the audio recording.

Use of Physical Tool

In this study, through thematic analysis, emerged a theme labeled as *use of physical tool*. This strategic behavior is defined as the mediator using a tangible instrument in order to promote a deeper understanding of some word or concept. In both the mediational sessions between Paul and Brittany, and between Arlene and Liz, there is one instance each of this mediational

behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level one mediation.

Figure 56. Dyadic distribution of use of physical tool in level one mediation

Mediator	Student	Occurrence of Strategic Behavior
Paul	Brittany	1
Arlene	Liz	1
Total		2

The following excerpt comes from the mediational session between Paul and Brittany. It illustrates Paul's use of a physical tool to hasten comprehension in his student.

Paul: Oh, that's right, you're in French one I remember. She said, nous fermons à 19h tous les jours sauf le dimanche [we close at 7pm everyday except for Sundays]
Brittany: tous les jours [everyday] ?
Paul : Um hum, means what ?
Brittany: Two or three times a week?
Paul: tous—les—jours [everyday], toutes les chaises [all the chairs] (says pointing to the chairs in the room) tous les étudiants [all the students], tous les jours [everyday], tous, tous non (all, all, no) ?
Brittany: All of them together?
Paul : yes so...

The initial interaction of this mediational excerpt is Paul attempting to lighten the atmosphere and keep Brittany from losing face. He follows this by repeating a phrase from the listening. He does this because in previous mediation Brittany asks Paul for mediation by repeating something that he had said which she did not understand. Paul responds by asking her the

meaning of that phrase, to which she incorrectly responds. It is at that point that Paul illustrates the meaning of the word "toutes (all)", by pointing to all of the chairs in the room. This extract ends with Brittany confirming that she understood the phrase Paul was illustrating by using the chairs.

After Brittany has experienced some problems in a previous mediational excerpt, Paul attempts to create a collaborative frame in which they both can work. After having done so, he repeats a key phrase from the listening text. It is obvious that Brittany does not understand, therefore Paul uses a physical tool to illustrate the meaning of a troublesome word. This is done by pointing to all the chairs in the room and repeating the phrase "toutes les chaises (all of the chairs)." It should be noted that this instance was dual as to include use of unknown words in context. He goes on to use the word in other illustrations of the word "toutes". Directly after this tool use, Brittany understands the meaning of the word.

As previously noted, there is also an instance of the use of a physical tool in the mediational session between Arlene and Liz. The following excerpt is provided to further illustrate the use of a physical tool.

Arlene: And the answer is? Entre la pharmacie and le supermarché (between the pharmacy and the supermarket).

What is this called?

Liz: Something the pharmacy and the supermarché (supermarket)

Arlene: so is it entre (between) that you don't understand?

Liz: No, I know that I've learned but don't remember it.

Arlene: On a ce papier là, le papier est entre nous [We have this paper here, the paper is between us].

Liz: oh, in between

This passage begins with Arlene asking Liz a question with the aim of determining whether or not she understood a specific word. Liz responds by saying that the word is familiar to her, but she cannot recall what it means. Therefore, Arlene takes a sheet of paper and places it between herself and Liz. Liz is then able to illustrate understanding of the word "entre (between)".

A comprehension check on the part of Arlene is found at the onset of this mediational excerpt. When Liz responds to this comprehension check in the negative, Arlene employs the use of a physical tool to illustrate this preposition. This passage ends with Liz demonstrating her knowledge of Arlene's tool use.

The use of a physical tool in this context, to denote the term 'entre' in French is reflective of concept based pedagogy. According to Leontiev (1981) communication should not be viewed as a system of rules but rather as a system of semiotic artifacts that combine language and thought. Lantolf and Johnson (2007) takes this idea of concept based pedagogy further by urging teachers to promote conceptual knowledge by creating a "visualization of the concept in the form of a concrete schema" (p. 882). Arlene creates the visualization of the concept by placing the paper between herself and the student that she is mediating.

The previous section reports on the fourteen separate strategic behaviors that emerged from a thematic analysis of mediator and student DA interactions. These students were at the first level of language experience. That is to say, they were either enrolled in French one, or had completed

French one and were not taking French two at the time of the study. Each strategic behavior in this section was defined and examples drawn from the data were given.

The next section reports on the DA interactions of mediators and students at the fourth level of language experience. This means that students were either enrolled in fourth semester French, or had completed fourth semester French and were not enrolled in fifth semester French at the time of the study. The different strategic behaviors that emerged from the thematic analysis of the data will be outlined, defined and examples given.

Strategic Behaviors in Language Experience Level Four

Mediational sessions between mediators and students were conducted at various levels of language experience. For the purposes of this experiment language experience is defined as the “seat-time” that a student has spent in a class. Therefore a student is classified at language experience level four if they were enrolled in fourth semester French or had completed fourth semester French and not enrolled in fifth semester French at the time of the study. The following sections report on the mediational sessions of two mediators; Eloise and Vanessa who worked with two fourth semester students Ginger and Caroline. Following the rationale used in the selection of the mediators for the first level of language experience, these mediational groups were chosen because they provide data that is richer than the DA interactions of the other mediators.

The thematic analysis⁵ (Boyatzis, 1998) of the Eloise and Ginger dyad as well as the Vanessa and Caroline dyad yielded eleven strategic behaviors present in the mediational section. These strategic behaviors are listed and defined in the following chart.

Figure 57. Coding definitions for level four mediation

<i>Strategic Behaviors</i>	<i>Definitions and Examples</i>
ask student to translate	Mediator asks student to translate from French to English or vice versa.
comprehension check	Asking a question or prompting with the aim of gauging a student's understanding of a word or concept, <i>e.g. Qu'est-ce que ça veut dire?</i>
create collaborative frame	Language or gestures are used in order to create a relaxed environment.
create sense of accomplishment	Praise concerning a correct answer or other achievement, <i>e.g. you did a super job.</i>
direct translation by mediator	Translation from one language to another on the part of the mediator, <i>e.g. proche means near</i>
elicit student response	The mediator leading a student to an understand of something that they did not previously know, <i>e.g. Les papiers sont entre le stylo et le clavier. Alors, Steve est _____ le supermarché et la rue Casino.</i>
mediator speaks key phrase	Mediator repeats a phrase that is important to the student's understanding of a word, concept or context of the listening text.
moving the mediation along	Bring the student back on task or changing the direction of the mediation, <i>e.g. Ok, let's look at the next one.</i>
student requests mediation	Student asking specific questions either in French or English.
targeted listening	Listening to a specific part of the text
use of physical tool	Student or mediator use of a tangible instrument with the aim of promoting deeper understanding, <i>e.g. student referring to notes that they took in previously in the mediation session.</i>

⁵ For a detailed explanation of thematic analysis see chapter 3

Ask student to Translate

When a mediator asks a student to give the equivalent of a word in either French or English, this strategic behavior is defined as *ask student to translate*. In the mediational sessions between Eloise and Ginger there are three separate instances where a student is asked to translate. In the Vanessa and Caroline dyad there are none. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 58. Dyadic distribution of ask student to translate in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	3
Vanessa	Caroline	0
Total		3

An example of this behavior, which is drawn from the interaction between Eloise and Ginger, is presented below.

Eloise: You can translate that one?
Ginger: Yes, But she did not...
Eloise: What is she? What does that refer to?
Ginger: I thought that it was one of the people that were speaking because there is a representative that was speaking.
Eloise: ok, I'm not sure it is. I think that it refers to something in the question.
Ginger: the reason, the church?
Eloise: right it's either the reason or the church. What do you think? Given the rest of the sentence, what do you think?
Ginger: I would probably say the church.
Eloise: right, that would make sense.

This interaction begins with Eloise directly asking Ginger if she is able to translate what she believes is an important part of the listening passage. Ginger responds but does so incorrectly. In this specific instance there is a sentence that includes a personal pronoun that refers to an object. Ginger has misunderstood and believes that the pronoun refers to the woman speaking in the interview. Once it is clear to Eloise that Ginger has misunderstood the antecedent of the pronoun, she redirects Ginger to the question. Ginger sees her mistake and is able to show her understanding of the sentence by correctly translating a portion of it.

In the passage detailed above, Eloise makes use of the L1 in mediating her student. Moreover she asks her student to respond in their L1. This reflects the manner in which Antón and Dicamilla (1999) conceptualize the use of a shared language in the facilitation of collaborative activities such as DA. In fact , their entire interaction is in Eloise and Ginger's common language.

Comprehension Check

In this study a *comprehension check* is defined as asking a question or prompting with the aim of gaining an idea of a students' understanding of a word or a concept. In level four mediational sessions this strategic behavior occurred once in the Eloise and Ginger dyad and once in the Vanessa and Caroline dyad. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 59. Dyadic distribution of comprehension check in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	1
Vanessa	Caroline	1
Total		2

An illustration of this strategic behavior from the Eloise and Ginger dyad is included in the following section.

*Eloise: ...we're gonna do this in English because my French is so rusty. Combien de personnes ont péri dans le.... [How many people perished in the...] Did you understand all the words?
Ginger: yes, I understand that one.*

In this interaction Eloise begins by creating a collaborative frame with Ginger. Eloise does so by excusing her level of French and stating that she will do her mediation in English. She then repeats a key phrase. In fact, she repeats what she believes to be an important part of the question that Ginger was asked to answer. Eloise then follows her repetition of the key phrase with the comprehension check. She does this in English.

There is also an example of a comprehension check in the interaction between Vanessa and Caroline. The following text is pulled from their interaction.

*Vanessa: here you go. Ils ont clôturé les grilles (they closed the window bars)
Caroline : closed the gate ?*

Vanessa: yes and how did they do it?

Just as in the Eloise and Ginger dyad Vanessa begins her comprehension check by repeating a key phrase. However, instead of repeating a key part of the question as Eloise did, Vanessa repeats a key part of the listening text. It appears that she did this in order to verify whether Caroline actually understood the phrase. Caroline replies to Vanessa's query by translating the key phrase in English. While this comprehension check is not as overt as the one in Eloise's and Ginger's interaction, it is none the less classified as a comprehension check. This is due to the fact that Vanessa repeats the key phrase as if it were a question.

Students in mediational episodes where comprehension checks are performed are other regulated. That is to say, they are unable to complete a task without assistance. They therefore rely collaboration with the mediator. Other regulation is a crucial step for the student in order to become self-regulated. In fact, a learner must pass from being object-regulation to self-regulation for development to occur. Lantolf, Labarca and den Tuinder (1985) argue that "for other-regulation to be successful requires an awareness of the individual's zone of proximal development and this awareness can only come about as a result of observing and interacting with individual learners" (p. 863). Comprehension checks as a strategic behavior embody the idea of mediators having an awareness of a student's ZPD.

Create Collaborative Frame

When a mediator uses language in order to converse with a student, this is coded as *create collaborative frame*. In the mediational interaction between Eloise and Ginger seven separate instance of this theme emerged from thematic analysis of the data. However, analyses of the Vanessa and Caroline dyad did not yield any manifestations of this theme. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 60. Dyadic distribution of create collaborative frame in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	7
Vanessa	Caroline	0
Total		7

Two example passages are given in the following section with the aim of illustrating this strategic behavior.

Eloise: The first question, Will do is we'll make sure that you understand all the stuff and the question and then we can listen again and recheck your answer. And we're gonna do this in English because my French is so rusty. Combien de personnes ont péri dans le.... (how many people died in the...) Did you understand all the words?

Ginger: yes, I understand that one. If the people that died in the accident. It wasn't a family. It wasn't four military people. It was the third one. The three government people with a pilot. That's what I put.

This interaction comes at the beginning of Eloise and Ginger's mediational session. Eloise begins by stating that they will start with the first question. She goes on to explain that this will be done so that Ginger understands the question. They will then proceed to listening to the text together; again making sure that Ginger understands what is being discussed. After it is clear to Eloise that Ginger has understood both the question and the relevant part of the listening text, they will check Ginger's answers. Also interesting to note is the fact that Eloise chooses to do all of her mediation in English and explains this to Ginger. In fact, Eloise puts the blame on herself, asserting that the reason mediation will be in English is because her own French is "rusty." Eloise repeats the question and asks Ginger if she has understood it. Ginger responds by stating that she has in fact understood the question and then goes on to translate all of the possible answers. She concludes this excerpt by revealing her answer to the question.

The second example detailed here comes from about halfway through the mediational session. It is directly after an episode in the listening that Ginger found particularly difficult.

Eloise: OK, so going back to the question, which ones can we eliminate?

Ginger: Well, We can eliminate the first one, and I guess the second one and the third one, maybe the fourth one? I would say that was good. I like that one.

Eloise: And the fifth one?

Ginger: We can get rid of that one too.

Eloise: alright, so?

Ginger: I'm thinking the 4th one.

Eloise: isn't that an interesting way of putting that? avait condamné l'accès [having closed access]

Ginger: That doesn't sound right.

Eloise: Yes, that's weird. It's an interesting way to turn a phrase.

Ginger: So, that's the one and I got wrong.

Ginger has had a particularly difficult time understanding the question and the answers that are being discussed in the mediational excerpt. Because of this, Eloise asks Ginger to eliminate answers that could not be correct. After Ginger has finally understood the specific information that can be used to answer a question that she missed, Eloise comments on the structure of the phrase after which she repeats the key phrase. Ginger responds that the phrase sounds incorrect to her to which Eloise replies that even though the phrase is correct it seems odd to her as well. She goes on to say that the French language structure used in the listening text is interesting. The interaction concludes with Ginger solidifying her understanding of the question and realizing that the answer that she chose is incorrect.

As was detailed in the section that details the mediation that occurred between mediators and students at the first language experience level, the strategic behavior entitled *create collaborative frame* is similar to the effective mediational behavior that Lidz (1991) calls *praise/encouragement*. Moreover, Jensen and Feuerstein (1987) put forth a component of the MLE labeled *feelings of competence*. The *creation of a collaborative frame* in this study is similar to this notion.

Create Sense of Accomplishment

During the course of the mediation when the mediator praised the student about answering a question correctly, showing that they have understood some language structure or when they have accomplished some task, it was coded as *create sense of accomplishment*. In the Eloise and Ginger dyad there are eight separate instances of this strategic behavior while in the interaction between Vanessa and Caroline there are four instances of this theme. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 61. Dyadic distribution create sense of accomplishment in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	8
Vanessa	Caroline	4
Total		12

The following section offers a passage drawn from the interaction between Eloise and Ginger with the aim of illustrating this strategic behavior.

Eloise: so she says les forces de l'ordre ont eu du mal à pénétrer [the police had a difficult time penetrating] or something (listening) Now that's really hard. She uses hard language here. OK, this is the sentence. (showing transcript)
Ginger: oh, ok, clôturé...[closed]
Eloise: Isn't that great word?
Ginger: yes,
Eloise: Difficult that was very difficult it was difficult to pick out. What does that mean?

Just before this example Eloise and Ginger have been working on a troublesome section in the listening passage. Specifically Ginger has been having trouble determining the meaning of one word based on its context within the passage. Once she has finally understood it, she repeats a difficult word. Eloise replies and shows her satisfaction with Ginger. Ginger responds back. Eloise concludes this episode by praising Ginger for her good work and her ability to isolate a complex and difficult verb from the listening passage and by asking her to demonstrate that she has understood the question.

The following passage from the mediation sessions between Vanessa and Caroline illustrates the way in which the mediator creates a collaborative frame with the student.

Caroline: OK, in the next one is the police didn't have the right to enter, enter religious, religious buildings?

Vanessa: Um hum

Caroline: buildings in France

Vanessa: and that would make sense because there is a big, important separation of church and state in France. So it's a possible answer as far as being reasonable, but is it what appeared in a text?

In this interaction Caroline begins by translating one of the possible responses for a question and then Vanessa responds affirmatively to Caroline. Continuing their engagement, Caroline adds some information to her original statement. It is at this point that Vanessa changes her mediation. She seems to realize that even though Caroline has understood the question, she has misunderstood the listening text. She, therefore, comments that even

though Caroline’s answer is plausible, due to the emphasis placed on the separation between Church and State in France, her choice is not correct because nowhere is her choice specifically mentioned. She then directs Caroline to reexamine the listening text in order to find the correct answer.

Elicit Student Response

When a mediator led a student to a correct answer, instead of a simply providing them with it, this strategic behavior was coded as *elicit student answer*. In the mediation between Eloise and Ginger there were twelve instances of this behavior. In the mediation between Vanessa and Caroline there were four manifestations of this strategic behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 62. Dyadic distribution elicit student response in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	12
Vanessa	Caroline	4
Total		16

The following passage is pulled from the interaction in the Eloise and Ginger dyad. It is offered to illustrate the theme entitled *elicit student response*.

Eloise: there's the train
Ginger: I thought that he was saying en train de [in the midst of doing something], like you are doing something
Eloise: non, un train de déchets [a garbage train]
Ginger: alright (listening)
Eloise: alright, so what is this train ?
Ginger: I totally don't know. (listening) something about Normandy
Eloise: before Normandy, they talk about the Hague (listening) un train de déchets nucléaires [a nuclear waste train]
Ginger: something about nuclear
Eloise: right, what would be nuclear on a train? Déchets [waste]
Ginger: I hope nothing, unless it's a military train
Eloise: déchets nucléaires [nuclear waste], Have you seen this word? (shows word on paper)
Ginger: no
Eloise: Do you have any idea what would be on a train that's nuclear that's traveling in France?
Ginger: a bomb?
Eloise: It's actually waste, rubbish, les déchets is the waste, rubbish that you throw away

This excerpt begins with Eloise directly translating a word into English. At that point Ginger requests mediation to which Eloise responds by speaking a key phrase. Ginger affirmatively responds and then Eloise provides some targeted listening. After this she asks a question to perform a comprehension check. Ginger is unable to correctly respond so Eloise repeats a key phrase and then provides more targeted listening. Eloise asks a couple more questions to which Ginger is unable to correctly respond, so she uses a physical tool (paper and a pen) to write a key word. Once it becomes apparent that Ginger is unfamiliar with this word, Eloise translates into English. She goes on to provide a targeted listening opportunity to and perform several comprehension checks. Ginger responds correctly to some of the comprehension checks and incorrectly to others. Eloise then concludes

the mediational interaction with another episode of targeted listening and finally provides Ginger with the correct answer.

Of all of the mediational exchanges in which the strategic behaviors occur, elicitation of student response is the most expansive. That is to say, the manner by which student responses are elicited is more complex and therefore uses more language than other strategic behaviors. This also is true of the mediation between Vanessa and Caroline. The ways that Vanessa elicited Caroline's responses produced some of their richest mediational episodes. An excerpt that illustrates this mediational behavior follows.

Vanessa: what does il y a, il y avait [there is, there was] mean?

Caroline: oh, there was

Vanessa : um hum

Caroline: There was the alert of a bomb. No, is that word bomb in English?

Vanessa: That's not a false cognate. That's a real cognate.

So, there was a

Caroline: I don't know that word means I don't remember it.

There was an alert at the bomb? It doesn't make any sense. I don't know what it translates to. There was an alert at the bomb?

Vanessa: So, why couldn't the police go easily into the church, because there was something to do with the bomb? What happens in Hillsborough County high schools?

Caroline: Oh, A bomb threat.

In the previous mediational interaction Vanessa and Caroline are working on a question that Caroline answered incorrectly. It seems that Vanessa has misunderstood the possible answers because she is not familiar with the word *bombe* [bomb] in French. This appears to be puzzling to Vanessa because this word is very close to the English word "bomb." Therefore, Vanessa draws on the experience of Caroline as a high school

student in a district where bomb threats are a common occurrence. During this interaction Caroline understands the meaning of the phrase in question and correctly translates it into English. Caroline then goes on to ask if she has chosen the correct answer. Vanessa refuses to confirm or deny her choice, but instead urges her to decide herself.

Just as was detailed in the discussion of the strategic behavior *elicit student response* in the mediational sessions from the first language experience level, leading a student to the correct answer follows Aljaafreh and Lantolf's (1994) directive by providing the learner with assistance that is contingent on their needs. This means that mediators should provide hints and prompts that lead students to the correct answer rather than simply providing them with the answer.

Mediator Speaks Key Phrase

When the mediator repeated a phrase that they deem important to the students understanding of a word, concept or the context of the listening passage, this was coded as the theme *mediator speaks key phrase*. From the thematic analysis of the data there are sixteen instances of this strategic behavior in the interaction between Eloise and Ginger. In the Vanessa and Caroline mediation there are two examples of this behavior. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 63. Dyadic distribution mediator speaks key phrase in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	16
Vanessa	Caroline	2
Total		18

To more fully illustrate this theme an excerpt of the mediational interaction between Eloise and Ginger is given in the following section.

*Ginger: The police had a hard time penetrating the building because the refugees had something the grills by chains.
 Eloise: Any idea? clôturé? Can you make a guess?
 Ginger: I don't know. Enclosed?
 Eloise: right...*

This interaction begins with Ginger translating a part of the listening text. She has not understood a word and replaces it with the filler *something*. Eloise then repeating what she considers to be an important phrase. In fact she repeats the word that Ginger was unable to translate and replaced by *something*. Ginger's response makes it clear to Eloise that she has misunderstood the content of the passage. Eloise then urges Ginger to guess at the meaning of the word. Caroline does so, and it is apparent that she has in fact understood the word *clôturé* [closed]. This interaction highlights the power of working with DA. Using traditional testing methods, one would not have been able to know that Ginger did indeed understand part of the listening passage. It was only through dialogue engagement with Eloise that

Ginger's true understanding was uncovered. This reflects the findings of Poehner (2005). In his study he found that DA has the ability to uncover differences in students that traditional testing methods do not (p. 205).

There were also instances of the strategic behavior coded as *mediator speaks key phrase* in the Vanessa and Caroline mediation. The following passage is offered to illustrate this theme.

Vanessa : et puis la dernière-là. André Jammotte a assisté au congrès en tant que... [and now the last one here. André Jammotte attended the conference as a...]

Caroline : For that one I don't know the difference between marine and oceanographer. I know that the talk and pollution and fish. But I didn't know the difference between those words.

Vanessa: So it's a vocabulary problem. You don't know the difference between marin [sailor] and océanographe [oceanographer].

Caroline: Right. But I heard marine so maybe that's where I got that from. But it's probably not marine. That's not right is it?

Vanessa: Well, it's similar. Do you know what branch of the military the marines are actually formally under? Because the marines are not a separate branch. Are they part of the army, the navy, or the air force? Its subset of one of those three.

This excerpt begins with Vanessa repeating a key phrase that Caroline must understand to move on. In fact, it is the question itself that Vanessa repeats. After doing so, she pauses, perhaps expecting an answer. Caroline responds by explaining the reason that she did not completely understand the question or the possible responses. Vanessa picks up on this and therefore adjusts her mediation. In fact, she targets the vocabulary with which Caroline is not familiar and implicitly leads her to an understanding of the question and the possible responses.

As with many of the mediational excerpts highlighted in this chapter, there are a number of strategic behaviors that occur in each passage. While this passage begins with the mediator speaking a key phrase, it also contains the behavior coded as *elicit student response*. This excerpt helps to reinforce the fact that strategic mediational behaviors generally do not occur in isolation but instead are found surrounded by other behaviors.

Direct Translation by Mediator

In this study when a mediator translated from one language to another, it was coded as *direct translation by mediator*. In the mediational interaction that occurred between Eloise and Ginger there are seven instances of this behavior. In the mediation between Vanessa and Caroline two instances of this behavior emerged from the thematic analysis of their interaction. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 64. Dyadic distribution of direct translation by mediator in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	7
Vanessa	Caroline	2
Total		9

With the aim of illustrating this behavior, the following section contains an excerpt from the mediation between Eloise and Ginger.

Eloise: ok, manifestar [to protest]? Une manifestation [a protest]? Manifestants, they are demonstrators

Ginger: oh, demonstrators, OK I understand

Eloise: and une manifestation, it's a demonstration

This interaction occurs directly after the dyad has worked on a particularly difficult part of the listening for Ginger. Eloise has moved from being implicit in her prompts to being explicit. In the first part of this excerpt she directly translates a word. Ginger responds affirmatively, and Eloise goes on to translate another phrase into English.

In the mediational episode between Vanessa and Caroline, *direct translation by mediator* also occurred. The following section details the way in which this strategic behavior occurred in this dyad.

Vanessa: it's also what's on the side of the truck with the big red-cross on at the comes and get you to take you to the hospital

Caroline: oh, they pulled on the handle of the ambulance?

Vanessa: It's not the ambulance. It is the reason that the ambulance comes.

Caroline: Emergency?

Vanessa: There you go.

Caroline: They pulled on the emergency handle?

Vanessa: Yeah,

Caroline: They destroyed the locomotive engine?

Vanessa: Yes so, they parked a car on the train track or they broke the rails, or they tied themselves to the track, or they pulled on the emergency brake or they destroyed the locomotive. Which one is it? (listening)

Caroline: Oh, they attached themselves to the rail.

Vanessa: With what?

Caroline: chains? They chained themselves to the railroad tracks?

Vanessa: That's it...

In this mediational excerpt, Vanessa is reviewing a question that Caroline answered incorrectly. She begins by implicitly leading Caroline to an

understand of a phrase with which she is not familiar, “une poignée de secours (emergency handle).” After it is clear that Caroline has understood the term used for emergency handle, Vanessa praises her. Next Caroline translates each answer and waits for Vanessa to confirm her translation. Vanessa does so each time and prompts Caroline to provide more information if needed. The mediational episode ends with Vanessa translating the question and its accompanying answers into English. After translating she then provides some targeted listening so that Caroline may correctly answer the question. Caroline does so and mediation goes to the next question.

In the mediational episodes outlined in the previous section, both mediators have led their student using explicit and implicit hints and prompts. These passages highlight the time that the mediators chose to become more explicit in their mediation. This change from implicit to explicit mediation mirrors the way in which the researcher in Aljaafreh and Lantolf (1994) study used explicit prompts when there was a breakdown in communication or when it was clear that the student lacked the understanding of a word or concept that was necessary for the completion of the task.

Moving the Mediation Along

In this study when a mediator brings a student back on task or changes the direction of their mediation, this was coded as moving the mediation along. Eloise and Ginger’s mediation has two instances of moving the mediation along. However, from the mediation between Vanessa and

Caroline, only one instance of this strategic behavior emerged from the thematic analysis of their interaction. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 65. Dyadic distribution moving the mediation along in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	2
Vanessa	Caroline	1
Total		3

In the following section an example of moving the mediation along from Vanessa and Caroline is given. No illustrative example from Eloise and Ginger is provided, as the examples of the strategic behaviors are essentially the same in both dyads.

Eloise: Ok, so now let go back to the question. If so, why couldn't easily going to church?
Caroline: The first one.

This excerpt begins with Vanessa urging Caroline to come back to the question. She then restates a portion of the question to which Caroline responds. From the first phrase of this mediational excerpt, it is clear that Vanessa wants to bring Caroline back to the task of discussing the question and its answer.

By directing the student to is important to understand, a mediator is participating in a behavior that Jensen and Feuerstein (1987) call *mediation of meaning*. As was described in the section on moving the mediation along in level one mediation, keeping the student on task, by moving the mediation along, is an important part of helping a student successfully complete the assessment.

Student Requests Mediation

The theme *student requests mediation* is defined as a student asking a specific question in either French or English. In the mediational sessions between Eloise and Ginger there are nine instances of this mediational behavior. While in the intervention between Vanessa and Caroline there are eight instances of Caroline requesting mediation. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 66. Dyadic distribution of student requests mediation in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	9
Vanessa	Caroline	8
Total		17

An example passage is given below, from the mediation between Eloise and Ginger, where Ginger asks Eloise a specific question.

Eloise: ok good, ok, so, comment ont-ils réussi à bloqué le train [how did they succeed in blocking the train]? Did you get that?
Ginger: Isn't that tires? They popped the tires?
Eloise: That was a great guess.
Ginger: But it's not right...
Eloise: tire?
Ginger: ripped, tore?
Eloise: again great job, it's poussez [push] and tirez [pull]
Ginger: oh, pull?
Eloise: um hum, la poignée de secours [emergency handle], poignée [handle] ? secours [help] ?
Ginger: I know that it is something about safety. I know that it's something about helping
Eloise: so they pulled something having to do with help
Ginger: the help button?
Eloise: exactly that...

This mediation excerpt begins with Ginger directly asking Eloise a question. Eloise responds with a compliment, despite the fact that Ginger's understanding of the phrase is incorrect. Ginger sees that she has incorrectly answered and offers another guess. Again Eloise compliments her effort, but again Ginger's guess is wrong. Next Eloise repeats a key phrase. It is at this point that Ginger correctly translates the word in question. Eloise then tries to expand on the phrase, by repeating a larger section of words that are important to correctly answer the question. Ginger responds with some vague knowledge of what is being discussed but is unable to be more precise. Next Eloise rephrases the pieces that Ginger has understood. It is at this point that Ginger understands and correctly answers the question.

The mediational excerpt from Vanessa and Caroline's interaction that illustrates the theme *student requests mediation* is similar to the excerpt that illustrates the same in the theme in the Eloise and Ginger dyad. Indeed, both mediational excerpts come from the interaction based on the same question.

The following excerpt comes from the mediation between Vanessa and Caroline.

Caroline: They... What does that word mean? Oh, I know that word. They did something to the handle of something.

Vanessa: au secours! Au secours! [help !, help !]

Caroline: What does that mean? Help? What does this word mean? I know that I know what it means.

Vanessa: (miming the motion of pulling something)

Caroline: pulled, oh, they pulled the handle.....

This excerpt begins with Caroline asking Vanessa a specific question. Caroline then states that she knows the phrase in question and then proceeds to translate part of the sentence into English. At this point Vanessa repeats a key phrase, but in a slightly different context from how it was used in the listening passage. Then Caroline asks three direct questions of Vanessa, and then states that she knows what the word means. Vanessa responds using a gesture to mime the motion of pulling something. Caroline is then able to correctly translate the word into English. Next Vanessa expands her mediation and wants Caroline to put the two pieces that she has understood together to form a complete thought. Caroline is able to do so and the mediational session about this structure ends.

According to Feuerstein (1979) the engagement of the child in the act of mediation is essential. In fact if the child is not engaged with the mediator then the MLE does not occur. Lidz (2002) agrees but draws a distinction between mediational behaviors and learner reciprocity. She feels that researchers should exclude student behaviors from mediational behaviors because of statistical measures that showed that reciprocity made a

insignificant difference to a her mediational rating scale and from her personal experience as a school psychologist. She states “determining the reciprocity of a child is neither a clear nor easy task. There are many children that do not appear to be attending to or taking in what is happening, but who later demonstrate that they were really very much aware.” (p. 72)

The act of a student asking a question very clearly demonstrates, in the mind of the research of this study, that students are engaged in the mediation. However, this does not necessarily guarantee that development in the student will occur.

Targeted Listening

Thematic analysis of data collected from mediational sessions with student at the fourth level of language experience reveals a strategic behavior that was coded as *targeted listening*. This theme is defined as the mediator directing a student to listen to a specific part of the text. This behavior emerged eighteen times in the interaction between Eloise and Ginger and six times in the mediational session between Vanessa and Caroline. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 67. Dyadic distribution of targeted listening in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	18
Vanessa	Caroline	6
Total		7

The following example is offered to illustrate this strategic behavior and is drawn from the session between Eloise and Ginger.

Eloise: And obviously you've dealt well with the passage, but my job now is to focus on stuff and clear up little things that were problematic.

Ginger: Got it

Eloise: So what does that mean?

Ginger: The demonstrators have blocked access.

Eloise: ok, good and then la police [the police]...

Ginger: They don't have the right to enter religious buildings in France

Eloise: ok, and you put about the...

Ginger: The representative defended...

Eloise: ah, défendre à quelqu'un de faire quelque chose [forbid someone to do something]. Je... ne touche pas [I...don't touch], n'entrez pas [don't enter]

Ginger: right, right

Eloise: but it's to prohibit someone to... to command someone not to do something. Forbid that's the word that I'm looking for.

Ginger: great, so it's not really defend

Eloise: OK, so let's have a listen to that and see if you can find where it says that. (listening)

This excerpt begins with Eloise explaining to Ginger that they will listen to a specific part of the text in order to determine whether or not Ginger has correctly answered a question and to make sure that Ginger has understood

the nuances of the listening text. Next Eloise asks a question about individual parts of the listening to determine what Ginger has understood and what she has not. Ginger shows that she has understood the part of the text to which they listened, but she is unable to answer an additional question. It is at this point that Eloise decides to have Ginger listen to part of the listening text again.

Within this excerpt there are three separate instances of Eloise using targeted listening as a strategic behavior. The prevalence of this theme in this excerpt is illustrative of the rest of Eloise's and Ginger's mediational session. The strategic behavior of targeted listening occurred more than any other behavior that Eloise and Ginger used.

Targeted listening also occurred in the mediation between Vanessa and Caroline, although to a lesser extent. The following excerpt is drawn from their mediational session with the aim of further demonstrating this strategic behavior.

Vanessa: ...so these are our choices then. The church representative would not let them go in. The police don't have the right to go into religious buildings in France. There was a bomb threat. The protesters blocked the access or it could only hold fifteen people. Let's go listen to it again. (listening)
Caroline: Oh, it's the first one. (listening)
Vanessa: Les forces ont eu du mal a pénétrer l'église a cause de [the police had a difficult time entering the church because]
Caroline : because
Vanessa: Ok, let's listen again

This section begins with Vanessa translating the answer choices of a particular question into English. It seems that she does so in order to give Caroline the part she should listen for. Next Vanessa replays the listening

text. After completing the first targeted listening Vanessa pauses the recording and Caroline incorrectly answers the question. At this point Vanessa rewinds the recording and asks Caroline to listen again. After listening again Vanessa repeats a key phrase from the targeted passage. She does so in an attempt to get Caroline to complete the sentence. Caroline is unable to do so. In fact, she states that she does not understand the first part of the key phrase that Vanessa spoke. Here Vanessa decides to provide targeted listening, after which Caroline answers the question correctly.

In both of these mediational excerpts the students are pointing out to the student what is important for them to understand. They do this by rewinding or advancing the listening text to what they consider a critical point. It is important to note that mediators were not consciously focusing on an area that they had targeted as potentially difficult before the mediation began. Instead they relied on their knowledge as a teacher and their understanding. This is very much in keeping with Feuerstein's (1979) belief that mediation should be unscripted and dependant on the individual needs of the learner.

Use of Physical Tool

When a mediator makes use of a tangible instrument with the aim of promoting deeper understanding, it was codes as *use of physical tool*. In the Eloise and Ginger case this strategic behavior manifested itself on three different occasions. While in the Vanessa and Ginger dyad this behavior only

occurred once. The chart below offers a graphic representation of the distribution of this strategic behavior in level four mediation.

Figure 68. Dyadic distribution of use of a physical tool in level four mediation

Mediator	Student	Occurrence of Strategic Behavior
Eloise	Ginger	3
Vanessa	Caroline	1
Total		4

The following excerpt is drawn from the interaction between Eloise and Ginger and is given with the aim of illustrating use of Physical Tool.

Eloise: so she says les forces de l'ordre ont eu du mal à pénétrer (the police had a hard time entering) or something (listening) Now that's really hard. She uses hard language here. OK, this is the sentence. (showing transcript)
Ginger: oh, ok, clôturé...
Eloise: Isn't that great word?
Ginger: yes,
Eloise: Difficult that was very difficult it was difficult to pick out.

In this passage Eloise has been working with Ginger for quite some time. It has become clear that Ginger is unable to understand what is being said in the listening text. Therefore, Eloise begins by repeating a key phrase and then provides some targeted listening. She concludes this interaction by using a physical tool to help Ginger. That is to say, Eloise shows Ginger the written transcript of the listening text. It is at this point that Ginger understands the key phrase.

To further illustrate how a physical tool was used to facilitate understanding of the listening text, the following excerpt from the interaction between Vanessa and Caroline is detailed below.

Caroline: closed the gate ?

*Vanessa: The and how did they do it? Listen again. (listening)
Ils avaient clôturé les grilles par des chaines [They have closed the window bars with chains]. (writing on paper)*

Caroline : Oh, chains

Vanessa: Ok, so now let go back to the question.

This interaction occurs directly after Caroline has incorrectly answered a question because she has misunderstood a key word. Vanessa decides to provide some targeted listening and repeats a key phrase. However Caroline still does not understand the phrase in question. It is at this point that Vanessa decided to write the difficult structure on a piece of paper for Caroline to see. After seeing this phrase written down, Caroline is able to show her understanding of this section of the listening text.

In traditional testing contexts the use of notes or looking at the transcript of a listening text in order to answer questions would be seen as cheating. However, in the Vygotskian view of assessment object-regulation (reliance on the listening text transcript) and the evolution to other- and then self-regulation is the way that higher order thinking skills are developed (Frawley and Lantolf (2001). The students' use of tools (paper and pencil, transcripts) illustrates their appropriation of these tools and perhaps eventual cognitive development.

The previous section reports on the eleven strategic behaviors that emerged from a thematic analysis of the mediators and students interacting at

the fourth level of language experience. The behaviors were defined and examples given and discussed. Recall that being classified at the fourth level of language experience means that students were either enrolled in fourth semester French as a foreign language or had completed fourth semester French and had not enrolled in another, higher level class.

In the following section the interviews with the mediators will be detailed. Recall that there were four mediators. Each was fluent in both French and English. Two were native speakers of French and two were native speakers of English. Two major themes emerged from the thematic analysis of the data. These are discussed in the following section and example quotation from the mediators are included to further illustrate their understandings of their mediation.

Interviews with Mediators

The researcher and three of the four mediators gathered together to debrief, in the form of a focus group, and share their understandings of the DA process. Vanessa, the mediator that was not present in the focus group, withdrew from the study due.

The interview was semi structured. That is to say, the researcher had prepared a list of questions, but was open to deviation for his list if a topic came up that he felt warranted further investigation. The interview lasted approximately one and half hours was transcribed and analyzed by thematic analysis that was facilitated by NVIVO Qualitative Coding Software. Thematic analysis uncovered two major themes; DA did not lead to learning, and

mediators failed to plan. The following sections discuss each theme and provide quotations to support the readers' understanding of the theme.

DA Did Not Lead to Learning

During the after training interview, the mediators raised several points. The one discussed in this section, DA did not lead to learning, was the most surprising to the researcher. While there is much research that details the effectiveness of DA leading to language development (Poehner 2005; Lantolf and Poehner 2004; Feuerstein 1981; Anton cited in Lantolf and Thorne 2006; Poehner and Lantolf 2005) there is no research that shows DA is not effective in facilitating learning. Given the relative dearth of research concerning DA and its applications to foreign language pedagogy, the reason that no research is available may simply be the infancy of the field.

However, it is important to note that the type of learning that is being described in these studies that take SCT as their theoretical framework is different from the type of learning that is being described by the mediators. The researcher believes that the mediators hold traditional views concerning learning. They believe that learning is demonstrated by autonomous performance; that cognition is biologically formed. SCT rejects this view (Dunn and Lantolf 1998, Kinginger 2002, Thorne 2003) and instead argues that learning is a product of social interaction with tool and other humans.

The following quote highlights Arlene's belief that DA training did not lead to learning.

My feeling was... at the end of the DA session, I was not able to see progress, and whether it is my fault or not, or if it was the

assignment itself. I did not think that students got out of there with any more knowledge than when they came in.

In a similar exchange between the researcher and Eloise, they discuss the students' ability to transfer what they learned in the first DA session to subsequent assessments.

Could they take what they learned from the mediation and apply it to another situation? That really depends on the mediation, you know. What was focused on and how it was focused on. They (the students) ended up basically translating... but of course she did better on the second test because they understood more.

Arlene then expands on Eloise's commentary by adding,

I had this one kid, I think he was the last one, I mean he did not even understand the questions. I really had the feeling that he did not understand much. I'm not sure what he got out of it. I helped him with the text, but I did not help him learn anything to use in class.

These quotes are interesting because while they both point to the fact that DA in the opinion of the mediators, did not lead to learning. However, both mediators argue that the student has understood more of the listening text, due to the fact that the mediators and students worked together through the assessment. It is not clear why this contradiction is present in the data. One possible reason may be the inability of the mediators to resolve their epistemological differences between SCT and their personal beliefs concerning language learning. The following exchange between the researcher, Eloise and Arlene illustrates this point.

Researcher: If you were advisor to someone creating a DA training, what would you do differently from what we did in our training? Do you feel that the main points of the workshop were effectively covered?

Arlene: To the extent that we disagreed with the premises of DA...laughter...it's difficult to say that we covered them sufficiently in my opinion. I was not convinced. To me it was all good teaching.

Eloise: I think that the SCT discussion was very useful. It was fine to have that, but having an idea of the assessment aspect of DA would have been useful.

Arlene: Right, to actually see how it was an assessment. All that we've seen is the mediation, how it was analyzed would have made the whole thing much clearer. The assessment was just getting us, getting me frustrated cause I couldn't see learning.

The previous interaction highlights the fact that neither Arlene nor Eloise is convinced that DA is a viable assessment. Arlene's opinions are very clear. She goes as far to say that she "is not convinced " and that she "couldn't see learning." Eloise subtly laments that some clarification concerning exactly how DA assesses student learning would have furthered her understanding of DA.

In follow-up interviews, the researcher investigated the mediator's comments and their belief that DA did not lead to learning. In an interview with Eloise, she believes that DA might lead to learning if she was more clear on what learning is. She states,

I'm not sure that I see what learning is in the ZPD or in DA. I know that it's different from what we traditionally view learning as, but I think that there might be a better way to measure responsiveness to mediation in students. I still don't see how DA is assessment and how learning is created in assessment.

Arlene expands on the thoughts of Eloise when she states,

The students that I worked with just seemed to repeat what I said to them. I saw no evidence of learning. Some of them were so self-conscious that I doubt that they were even able to hear what I was saying. Their answers on the tests didn't reflect that they had mastered the material.

Paul's views on whether or not DA did or did not lead to learning are somewhat different from those of Eloise and Arlene.

The students that I worked it did learn something. Maybe it was a new word or phrase. I remember this one idiom that was difficult for most of the students. I think that if I were to go and talk to them now they would remember it... in the long term, does DA help students to develop higher order thinking skills? I don't know. In the short term they understood, but will that help them be smarter? I'm just not sure.

None of the three mediators seems to be convinced that working with a student and being responsive to their ZPD will lead to the development of higher order thinking skills. Arlene is has the strongest opinion. She does not see any evidence of learning. Eloise is more balanced in her opinion, but urges a clearer definition of what constitutes learning in DA. Paul sees learning and the transference of knowledge to different situations, but seems to be unconvinced that this learning exists in the long term.

The preceding section outlined the theme that emerged from the mediator interviews. DA did not lead to learning. In the following section, the theme failure to plan is detailed.

Failure to Plan

Thematic analysis revealed a theme that was particularly striking to the researcher; *Failure to Plan*. The emergence of this theme is particularly important in that it offers an explanation for the reason that DA, in the opinion of the mediators, did not lead to learning. In the following excerpt the researcher questioned the mediators about their preparation for working with the students.

Researcher: So, let me ask you, how did you guys prepare for your mediational sessions?

Eloise: That was the problem. I didn't.

Arlene: Neither did I.

Paul: Um hum

Eloise: I mean, I did for the first one. I read the transcripts. I looked at the answers. I didn't form a mediational plan. For one, I was late and I thought, I can't go in there without even having looked at the questions.

Researcher: When you did prepare, what did you focus on?

Eloise: I didn't know what to focus on. I didn't know what kind of questions to ask.

Researcher: Did you look at the student results in Blackboard?

Eloise: shakes head

Arlene: I did that once, but it didn't help me. Each case is different...I did feel that I was preparing, because that was preparation, you see, just not getting in line with that situation.

This excerpt shows that mediators failed to plan their mediation on a consistent basis. It is interesting to note, that this fact was also noticed by the researcher and recorded in his journal.

I don't think that Paul or Arlene are looking a Blackboard to see how their student did before they mediated them. They just don't have time. Once I let them know that the student is finished, they go in immediately and start mediation.

It was made clear to the mediators in the DA workshop that students would complete the activity on Blackboard. After student completed the activity, the mediators were directed to examine student results and then form a mediational plan. Blackboard does not just record a students' score, but also has the ability to detail the amount of time a student spent on each question as well as the distracter that they chose when they answered incorrectly. This information could have been of vital importance when planning for their mediational session, but for some reason, the mediators did not always avail themselves of it.

In follow-up interviews, the researcher investigated the mediator's comments and their failure to plan. In an interview with Eloise, she explains her mediational planning.

I guess in retrospect I should've done it differently. I'm not sure why I didn't. It might have been that this is new to me...that I didn't really see that planning was important. Like a new teacher needs to plan more than an experienced one, I think that an inexperienced mediators needs to plan more than an experienced one.

Eloise goes on to add,

I think that one thing that would have helped me would have been some sort of organizer that would help me plan my mediation. I needed more direction in how to plan. What should I say here? What does it mean when a student answers this way? Something like we give to the students in ESOL one...something that helps them to write a better lesson plan.

Arlene had little to say when she was asked about her mediational planning. She states,

Well I did plan when I could. I understood the listening and the questions... and have taught listening skills before....I don't believe that looking at blackboard helped me to see what a student needed help with. More training would have helped me mediate and understand DA, but it took so much time anyway...

Paul was more contrite when asked about his mediational planning. He stated,

I am sorry that I didn't. It would have helped the mediation been better for the students... It would have been more targeted to their needs...I would have had a better idea of what I should work on during the mediation.

When asked at the end of the interview if there was anything else that he wished to add, he responded, "group work like we did with the students is good for them. Planning the way that the work will progress will help to make it better. I see that planning is important..."

Each of the three mediators interviewed had differing reason for why they did not plan their mediation. Eloise believes that she did not plan because DA and mediation were new concepts for her. Arlene did not feel that planning her mediation by looking at Blackboard was useful. In particular she speaks to the demands on her time to plan her mediation. Paul wishes that he had planned more because he understands the importance of planning in effective collaborative activities.

Lidz (1991) details the importance of planning when conducting DA. In fact, she states, "the assessor interaction with the learner needs to observe and test out how effectively the child utilizes self-regulatory process" (p. 147). In this study this could have been done through a cursory and qualitative analysis of student responses and time on task, yet none of the mediators did so on a consistent basis.

The researcher's journal gives some insight into the mindset of the mediators during the follow-up interviews. It states,

It was obvious to me that they were all uncomfortable talking about the fact that they didn't plan. It was hard to get them to talk and when I did I think that some of them became defensive...I was very neutral and showed no judgment towards their lack of planning, nonetheless they were all reluctant to talk about it.

The previous section details the focus group interview with the mediators, the follow-up interviews with the mediators and the themes that emerged from both of them. The following section details the student interviews and the themes that emerged from their analysis.

Student Interviews

When this study was initially proposed it was planned that four mediators would mediate four students at each of the four language experience levels. This would give a total of sixteen mediational episodes. However, as discussed earlier, one of the mediators, Vanessa, withdrew from the study after having completed the DA training and mediation one student at the fourth level of language experience. This leaves the possibility of interviewing thirteen students. Each student was contacted via email and by telephone when possible. Despite this contact only three students made themselves available for individual interviews with the researcher. In the following sections the data collected from these three interviews is detailed.

As with all the qualitative data in this study, student interview data was analyzed using thematic analysis (Boyatzis, 1998). From the analysis of student interview data, several themes emerged. To facilitate understanding of these themes they can be divided along the lines of mediational strategies that students found helpful and those that they did not find helpful. In the helpful mediational strategies category is included individual attention to a specific student and targeted listening. A mediational strategy that students did not find useful was when mediation was exclusively in French.

Helpful Mediational Strategies

The following section details the mediational strategies that students identified as helpful. Data included in this section came from one-on-one interviews with the researcher in this study.

Direct Interaction

All of the students interviewed in this study agreed that the individual attention that they received was beneficial. This opinion is illustrated in the quote below from a student named Laurie.

The best thing for me was the opportunity for me to work through the French with a native speaker. I liked the fact that they knew what questions I would ask and the best way to answer them... I really learned a lot working with Paul. He was helpful and kind. He didn't make me feel dumb when I didn't understand. He took the time to break things down for me and explained grammar that I didn't know. The one on one attention was great. We don't always get that in classes.

A second student named Susan echoes this same belief as Laurie. In Susan's opinion, one of the most useful parts of the DA sessions was the ability to interact directly with the mediator.

...working with Eloise, she was helpful to have as a resource when there was a word that I didn't know or when there was something in the recording that I just couldn't get. One time I kept on hearing one word that I thought meant to defend, she told me that it was a false cognate and that instead it really means forbid. I could have gone through an entire class and not realize that... it was like having a tutor; someone to work with that really knows and understands the language.

Echoing the same opinion as Susan and Laurie, Vicky detailed the importance of working on an individual basis with the mediator.

I liked being able to ask specific questions to the teacher and she was able to help me. She seemed to know when I was having trouble and spoke slowly.

Translation

Another mediator behavior that students found useful was translation. As reflected in the interviews with Laurie and Susan, they both agree that

having the mediator present to provide translation of unknown or troublesome structures was useful. The following quote is from Susan, where she details the importance, in her opinion, of having someone available to translate.

When there was something that I didn't understand she was able to translate into English for me. There was one word that meant something like in doing. I hadn't ever seen that before, and wouldn't have been able to guess. Eloise translated for me and explained to me how it is made... right now I don't remember the endings but it will be easier next time.

Laurie's ideas about the usefulness of translation are very similar to those of Susan. The following quote encapsulates her belief.

Paul spoke with me mostly in English. My teacher now speaks mainly in French and it's very frustrating. When I don't understand, she just goes on. Paul didn't do that. I think that he understood the recording and the questions.

Students believe that mediation that is in English is useful reflects the research of Antón and Dicamilla (1999) and Brooks and Donato (1994) that states that the common language can be used as a tool in the foreign language classroom. Additionally, students at the university where this study took place are used to the total immersion method (Bartlett, Erben and Garbutcheon-Singh 1996) of teaching foreign languages. The fact that they find the use of the common language in mediation as useful might be due to negative experiences they had in an immersive environment.

Targeted Listening

In this study targeted listening is defined as the mediator bringing to the student's attention a specific section, sentence or word in the listening text to aid in comprehension. Two of the three students interviewed felt that

targeted listening facilitated by the mediators was a useful strategy. This belief is detailed by the following quote from Laurie.

Paul was able to break down the recording and let me listen to the piece that contained the answer. I liked this, because I couldn't always hear what was being said. When I know that they were going to say the answer, I could pay special attention to what was being said... he would also repeat what the recording was saying. He speaks more clearly; maybe it's his accent, than the actors in the recording. That makes it easier to understand.

Being on the same mind as Laurie, Vicky details her beliefs about targeted listening in the following extract drawn from her interview with the researcher.

She selected specific parts of the recording for us to listen to. I liked that; it helped me to understand what they were saying. Sometimes it was really hard and I didn't understand. When she found the part where the answer was and we listened together it helped... it was good too when she said slowly to me what was being said. She was easier to understand there in front of me.

Unhelpful Mediation Behaviors

The majority of the comments from the students in the study were positive, as is evidenced by the previous quotes. However, there were two pieces of data from the student interviews that were not favorable. The interviews with Laurie and Vicky highlight these two unhelpful mediation behaviors on situational influences.

Mediation Only in French

When the mediator interacted only with a student in French, this defines the theme Mediation Only in French. It is worthy of note that this

theme occurs only in the interview between the researcher and Laurie. A quote from this conversation is included below.

I didn't like when he spoke to me only in French. A lot of the class that I am in this semester is taught in English, and I think it's a good idea. That way I can be sure that I understand... during the tutoring Paul began speaking French and I didn't understand. I didn't know what he was saying and became frustrated. When he changed to English I was able to follow him. I know that its supposed to be good for us to hear lots of French, but here I think that everything being in French would be too much.

Angst about Being Recorded

Despite what Laurie says about unhelpful mediational techniques, none of the other interviewees had anything negative to add about the mediation itself. However, Vicky did find the fact that the mediational session was being recorded a hindrance. Her belief about being recorded is highlighted in the following quote.

... we were being taped. It made me nervous. I couldn't put it out of my mind. I knew that people were going to be looking at what I had said and picking apart my French. It made me self-conscious.

Vicky's quote is particularly interesting in that it illustrates the understanding of Smagorinsky (1985) that the researcher and his tools can never be separated from the social situation in which the study is conducted. In fact, attempts to separate the researcher and his tools from the research situation do not respect the basic tenant of SCT and are therefore not valid within the Vygotskian paradigm.

In fact, the social nature of human activity, when viewed from a Vygotskian conceptualization, demands that the researcher be considered in

the research being conducted. Smagorinsky (1995) illustrates this point nicely when he states “data are social constructs developed through the relationship of researcher, research participants, research context (including its historical antecedents), and the means of data collection” (p. 192). He goes on to state that “data on human development are inherently social in nature” (p. 203) and therefore is it not possible to separate the researcher, or the instruments used in data collection from the lived experiences of the participants (Smagorinsky, 1995). To contend that one can separate research on cognition from the social milieu is to misinterpret the development of higher order thinking skills.

Affective Factors

At the end of the student interviews, each interviewee was given the opportunity to add anything they might like to say. Only Laurie and Vicky added to the interview, and among their additional comments emerged several affective behaviors that stood out in the opinion of the researcher. For instance, both Laurie and Vicky would encourage their professors to adopt DA for all their classroom assessments. The following extract from Laurie's interview illustrates this belief.

I'd like for all of my tests to be like this... it gave me the opportunity to be sure of my answers and find the answers to the ones that I wasn't sure about. Maybe my professor next semester will do this?

Vicky also adds, somewhat jokingly, that in the future she would urge her instructors to do something similar in her classes.

Are all French classes going to do this next semester? Just kidding, but I do think it's a good idea. I liked being able to talk about why I made a mistake and not just get a grade without knowing what's behind it. I'd like to see this because I think that you learn more. You don't just learn for the test and forget... you would still have to study, but it wouldn't be as stressful. It would take some of the pressure off.

In the previous section the themes that emerged from the student interviews were outlined. These themes were divided among mediational strategies that students found helpful and those that they found unhelpful.

In the following section the themes that emerged from the thematic analysis of the research journal are outlined and examples of the data included within it, that supports the themes, is given.

Researcher Journal

In this study three types of data were collected with the aim of creating results, which are viable. The researcher's journal and interviews are conducted with the mediator, both as a group and individually. This section reports on the researcher's journal.

Thematic analysis⁶ (Boyatris, 1998) was used to uncover reoccurring patterns and specific themes recorded in the researcher's journal. This analysis reveals three main issues; foreignness of SCT concepts to the participants, differences in understanding of SCT concepts, and validity of DA as an assessment. In the following section each of these themes will be discussed and examples, drawn from the researcher's journal, will be offered.

⁶ A detailed description of thematic analysis is found in chapter 3

Foreignness of SCT Concepts

This section discusses the theme foreignness of SCT concepts that emerged from a thematic analysis of the researcher's journal. That is to say, mediators had different understandings of what DA is and how it promotes development. This theme is defined as unfamiliarity with the concepts that underpin SCT and DA. The researcher's belief that SCT concepts were foreign to the workshop participants is reflected in the following quote taken from this researcher's journal.

It was slow going today. What I had planned to do in four hours is going to take three times that. When I was creating the workshop I believe I took for granted the fact that these guys would have some understanding of DA. Most of them don't. Vanessa is the only one that seems to understand most of what I am talking about. For example, today when I was talking about tools and ways those tools mediate our learning, I got blank stares. It was like when you're teaching in class and it's obvious that the students have not understood you or turned you off. So we took a break, had some snacks and coffee and started back. I went back over the importance of tools and their mediational effects and called it a day. We scheduled the second part to take place this Thursday. In the meantime, I'm going to redo some of the materials and make them more basic.

Within this quotation, there are several phrases that illustrate the foreignness of SCT to the participants. For instance, the fact the researcher noted, "blank stares" from the workshop participants point to his belief that they have not understood. Additionally the fact that he stopped the workshop, asked the participants to take a break, and decided to continue the training after having re-worked some of the teaching materials.

Another example of the foreignness of the concepts that underpin SCT and DA is illustrated in the researcher's notes on a reflective session with

Arlene after she had completed the training. The DA training consisted of mediating a student before having received training, undergoing training, mediating a student and reflecting on their mediation. He noted:

She (Arlene) told me that she didn't want to let the student see the transcript of the listening text. She didn't want to influence their answers. This shows a misunderstanding of what DA really is. She is supposed to influence her students and help them to understand why an answer is or is not correct. I explained this very thing several times in the DA training. I thought they got it. When I explained it to her again in our one on one meeting, she shook her head and said, "I don't know." If they don't understand DA, then they can't do it successfully.

There are many possible reasons for the fact that the concepts within SCT, which form the basis of DA, seem foreign to the mediator in this study. Firstly, only one reports any significant knowledge of DA before beginning the study. This was Vanessa, who herself is conducting research from a Vygotskian perspective. Secondly, as Kinginger (2001) states, the notions that form the basis of SCT are rooted in Soviet psychology, a field that most westerners know little about. Here, it is important to note that all of the participants in this study were educated either in the United States or in Western Europe. Moreover, Lantolf and Poehner (2004) posit that abandoning the traditional notions of validity and reliability in testing may be difficult for educators who are used to being held accountable for their students' progress or lack thereof.

Differing Understandings of SCT Concepts

Habermas (1981) defines a construct that he labels as Communicative Rationality. Within communicative rationality researchers are charged with

the exploration of one another's claims with the goal of raising awareness of a view of the researcher's validity. He believes that no one "has the monopoly on the correct interpretation" (pg 100) of any theory. The researcher in this study agrees with the ideas of Habermas and therefore refuses to be dogmatic with his understanding of SCT and DA. Instead he invites the exploration of divergent opinions on DA and its use. This idea very much underpinned the structure of dialogic engagement that occurred during the DA training, and resulted in differing conceptualizations of DA. For instance, during the DA training, participants viewed actual DA data sent to the researcher in this study from a colleague at another university. Directly after watching a video taped DA session the researcher recorded in his journal,

Today we watched the DA video from Penn State, and it sure piqued Eloise's interest. She made an interesting point. She challenges the wisdom of what she calls a focus on grammar in the video taped DA sessions we saw. I discussed the cognitivists concepts that form the basis of communicative competence and the way that I understand them to be incompatible with SCT. She didn't share my understanding and continued to question why a researcher would focus on language competence instead of language performance. I know that some people think that communicative competence and SCT mesh, but I'm not convinced, and it's obvious that she isn't convinced by my argument. If you've spent 30 years teaching in one way, and then are asked to switch, it's hard. I don't expect this to be a quick process.

Also included in the researcher journal is the following quote that describes Eloise's demeanor immediately after completing a mediational session.

I saw Eloise leaving today after having mediated Jessie. She looked tired and dejected. Maybe she is just tired or maybe she is having problems with the mediation. Does she not think that it

is useful? Is it taking up too much time? Maybe she just doesn't understand everything like she should? I don't know the answers to these questions....She is the one that understands this the best and she is having trouble...

The previous extract from the researcher's journal clearly outlines the differing ways in which the researcher and one of the mediators conceptualized ideal mediation that leads to the development of higher order thinking skills. The next section details the theme DA is not real assessment.

DA is Not Real Assessment

Another interesting theme that emerged from the thematic analysis of the researcher's journal is the belief that DA is not a real assessment. That is to say two participants in the DA training were unconvinced of DA's ability to be used in an effective manner in classrooms where teacher accountability is important. This viewpoint is reflected in the following excerpt.

Eloise kept on asking where is the assessment part of DA. I replied with what my understanding of how DA assesses a student's abilities, but I don't think that she was convinced.

In a second excerpt from the researcher's journal, he reflects on the same situation, Eloise's belief that DA is not a real assessment, but this time on a different day.

She (Eloise) was talking again about her belief that DA doesn't have any real assessment to it. I don't really like to be dictatorial with them. I understand that we are all coming from different perspectives, but I don't think that she gets it. She wants some concrete piece of paper that can be filed away. The description of the ZPD might not enough. Should DA be renamed to DD (Dynamic Description)?

It is interesting to note that Eloise does not seem to be the only mediator that is curious about the assessment part of DA. This statement is

supported by the following quote from the researcher's journal. The following entry was made on the same day as the immediately previous entry.

Arlene was asking about the students scores on the DA activities. We discussed the ways that some people have done their score reports, average, only the last test counting as a grade, and my belief that Vygotsky didn't envision the ZPD to be a heuristic. The problem is that Vygotsky never did really say how he saw DA. There is no final authority and everyone has to make up his or her own mind about it. Paul seems to agree. He was nodding his head during our discussion in support of her. Vanessa suggested that DA is a process and not an assessment. In the end, no one agreed.

The research goes on to reflect on Paul's state of mind during the DA training session. The researcher's journal states,

Overall during the DA training session and the mediation Paul is the quietest one of the bunch. I'm not sure what he thinks. He really doesn't say. The problem might be that we're friends and he doesn't want to hurt my feelings, or maybe he wants to be supportive of my research but doesn't agree with it.

Expanding on the relationship between the mediators and the researcher, the following excerpt from the researcher's journal is offered.

I'm friends with all of them. We see each other on a social basis. I thought that this would strengthen my research and make them more agreeable to learn about a different type of testing. I think that it made them more agreeable to participate, but it has also made them less vocal in their dissent.

Clearly the above quotation outlines some of the challenges that the researcher faced in the course of this study. First he outlines how the researcher journal details the way that SCT concepts seemed foreign to the mediators. Second the researcher journal offers evidences as to how the mediators and the researcher sometimes had differing understandings of SCT

concepts. Finally he outlines the mediators' belief that DA is not a true assessment.

The previous section outlines the themes that emerged from the thematic analysis of the researcher's journal. The three themes that came from the data were described and examples pulled from the data that illustrate these themes were included. In the following section the conclusion of chapter four is offered.

Conclusion

This chapter has outlined the research decisions carried out to conduct the present study. The chapter began with an explanation of the data collection and analysis procedures used to uncover themes from the video taped mediational sessions, the interviews (student and mediator) and the researcher's journal. The various themes that emerged from the data were defined, outlined and examples given.

The following chapter will begin by providing a brief overview of this study, assessment and SCT. Next the focus will shift to answering the research questions posed in chapter two and discussing the significance of these findings. Moreover, it will discuss implications of the present study on theory, practice, assessment policy and DA training. Chapter five concludes with suggestions for further research in the development of DA.

Chapter 5

This study addresses the implications of DA training on mediators, as well as the behaviors that occur during DA mediation sessions among university-level students of French as they take a computerized exam. Greater investigation of DA in L2 contexts is urged by Erben, Ban and Summers (2008) and by Poehner and Lantolf (2005). This study aims to fulfill this call for research.

This section provides the reader with a theoretical and methodological summary of the study with the aim of better situating the discussion of the data. The importance of this topic is detailed and as is the way in which this study is poised to contribute to our understanding of DA in light of the needs of the field.

This chapter contains answers to each of the research questions, along with a discussion of the research findings. Next, the implications of the study are detailed. These implications are divided between DA training and pedagogy. This chapter concludes with directions for future research and potential innovations in DA.

Traditional testing embraces a conceptualization of learning that is incommensurate with my own personal view of learning. Some teachers and researchers feel taking a test in a collaborative manner is less valid than taking a test individually. In fact, collaboration in the psychometric paradigm

of assessment is seen as a threat to measures of reliability and validity (Hughes, 2003). In non-academic language, collaboration is seen as cheating and often carries strict penalties. The belief that collaboration should be discouraged during assessment implies that learning occurs only intrapersonally. If the environment in which the person is situated plays a part in testing, it is of secondary concern. Paradigms other than SCT view the learner as what must be examined. The mental processes that cause cognitive change occur only within the individual. Assessment is done to support educational decision-making: to determine achievement levels, to screen and select, to evaluate systems and program, and to inform instruction. For school systems the two most important questions are: What is the content of the assessment? As well as What is the purpose of the assessment? Both these lead school systems to the “how question” of assessment, namely, How can a teacher assess instructional content and provide information to respond to the purpose of the assessment? In school systems, two main theoretical paradigms underpin how most assessment procedures are carried out, justified, interpreted and explained – behaviorism, and cognitive constructivism / cognitive processing. Whether assessment is carried out as norm-referenced/criterion-referenced, summative/formative, outcomes-based/product-based, assessment is created and administered under one of the above two theoretical understandings.

To review, (1) for the behaviorist observable behaviors are the only aspects of the child that can be reliably studied. Thoughts cannot be

measured with any degree of confidence. Behaviorist learning theory hangs on the process of transmission of knowledge. A common metaphor for this type of learning is filling the empty vessel. (2) for the constructivist emphasis is on the cognitive, social, cultural aspects of learning. In other words, learners construct their own understandings. DA relies on it since abilities are seen as processes that can be developed or modified. So, if learning involves cognitive processing and is carried out by affective or emotional beings within the sociocultural context of their classroom, school, family and community and if school curriculum is activity involving knowledge, skills, strategies, concepts, processes, within cultural and social contexts, assessment must reflect this.

In SCT, development is investigated by the analysis of interactions between people and between people and cultural artifacts. The environment is the source of development (Elkonin, 1998). Working within an SCT framework researchers are not concerned with controlling for environmental effects. In fact, humans and their social environment cannot be understood if separated (Poehner & Lantolf, 2005).

If one adopts the SCT paradigm (the cognitive constructivist / cognitive processing paradigm as described above) toward learning and development, then the future is seen as evolving rather than fixed. These emerging functions are best determined by what an individual is capable of doing with assistance, in other words, to capture and measure a person's potential learning ability or zone of proximal development. This is the essence of DA.

In this study, four experienced teachers of French as a foreign language were recruited from the World Language Education (WLE) department at a large southeastern university and trained in the theoretical and practical applications of DA. In order to determine the implications of DA training, mediators worked with students both before and after the training session. The mediator/student interactions were recorded, transcribed and analyzed for emerging themes using a modified version of Botyatiz's (1998) thematic analysis.

16 university-level students of French as a foreign language were paired with four trained mediators. The students represented four different levels of language experience. The teacher/student groups dialogically worked through an online listening assessment that was appropriate to the student's language level. The assessment followed a quasi-pretest/posttest format. Firstly, a student took an assessment without assistance. The teacher analyzed the test and create an action plan based on the student's score and their classroom experience. Next, the mediator and the student retook the test together; both working jointly to foster cognitive development. The final phase of this process was a transfer test. That is, students took a comparable test that contained similar foreign language structures as in the initial online listening test in the hope that students would avail themselves of the various mediational tools and strategic behaviors that were regulated with them through the mediational sessions and so modify their test input and involvement.

This previous section offered a theoretical and methodological summary of the study in order to situate the discussion of the data that is contained in this chapter. The following section details the relative dearth of research concerning DA and second language studies.

As stated in the literature review of this study, there are relatively few articles concerning DA in second or foreign language contexts. The six studies that address DA in second language settings are briefly detailed below. For more detailed information, consult chapter two of this study.

Gibbons (2003) examined elementary school aged, ESL students who were learning content specific vocabulary in a content science class. The goal of the teachers in this research was to enable students to use register appropriate terms to describe magnetism and its surrounding concepts. Kozulin & Garb (2002) detail research with at-risk students learning English as a foreign language in Israel and the use of DA of reading comprehension. They conducted a statistical study that offers evidence of effective mediation. Peña and Gillam (2002) investigated the effectiveness of DA in distinguishing between students that are in the process of learning a second language and those that actually suffer from a language learning disability. Tzuriel and Shamir (2002) administered an IQ test in a dynamic manner to two groups of kindergarten students; one using computer assisted mediation and the other providing interaction from a human mediator. Guthke & Beckmann (2000) conducted a study in which they created a battery of DAs designed to capture the potential development of a student. Lastly two studies, one by Antón

(cited in Lantolf & Thorne, 2006) examined student placement in college level Spanish, and another by Poehner (2005) investigated university level French students. These studies all show that DA is a more sensitive indicator of different student developmental levels. They all discuss mediation and the need to be responsive to individual student levels. However, none discuss DA training or the differences in mediation offered to students at different language experience levels.

Of all the studies detailed in the literature review, it is the last two that are the most relevant in terms of this study. They both involve university level students of foreign languages and are also situated within the interactionist paradigm of DA.

The reason that there are so few studies on DA in second language contexts is due to the fact that DA is not yet widely accepted by applied linguistics. Also, traditional language assessment research is highly quantitative, as evidenced by the work of Bachman (2004, 2002, 2000). Given the fact that DA is revolutionary and represents a different world view to which most SLA researcher are not accustomed, it is little wonder that there is a dearth of DA/L2 studies.

The study outlined here is poised to fill three distinct research needs. First, there is no research about the efficacy of DA training. Second, there are no studies that catalogue the strategic behaviors of mediators and examine their distribution across language experience level. Last, there are

few studies that detail mediational reciprocity, mediational management or mediational sensitivity.

This section has offered an overview of the studies that have thus far been conducted with DA in second language settings. Also, it has offered reasons as to why there is scant DA/L2 research and the way that this study advances knowledge about DA in second language contexts. The next section focuses on the research questions that have guided the data collection of this study.

Research Questions

I now turn to answering the overarching question and the individual research sub-questions of this study.

Overarching Question

The overarching question of this study is “how does the use of semiotic tools mediate language learning in a Dynamic Assessment environment?”

The aim of this question is to map the nature of mediation that occurs in a DA environment in order to create a taxonomy of actions that will be transferred to a computer mediated setting in a future study. The following sub-questions framed the investigation of the overarching question.

Individual Sub-Questions

Question 1

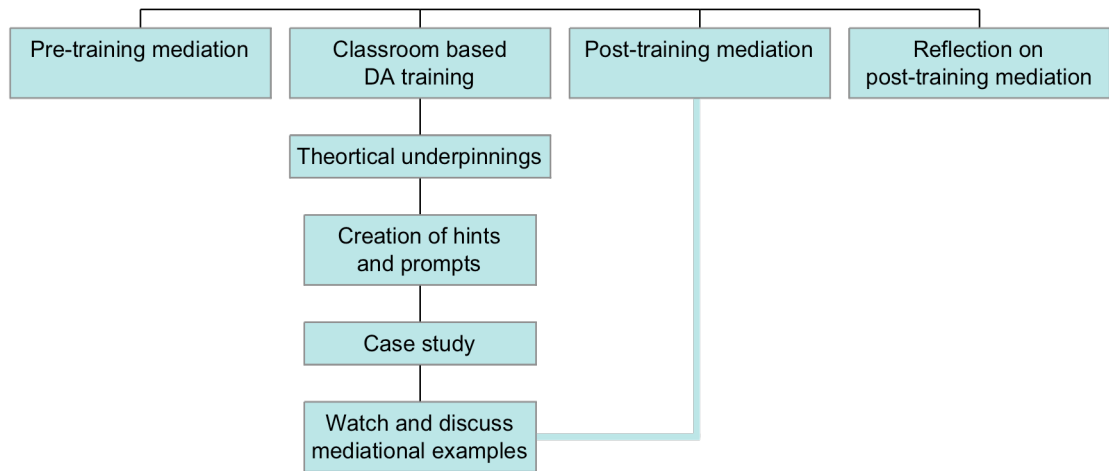
What are the implications of a Dynamic Assessment training session on mediation?

This question sought to examine the efficacy of the DA training sessions in terms of instructors' knowledge of DA and the construct of mediation as viewed within a Socio-Cultural Theoretical framework.

Indeed the training did have an affect. First, there is a marked increase in the mediational behaviors that occur in post-DA training mediational session. Second, mediators offered mediation that was more implicit in post-DA training mediational sessions. This is in keeping with Aljaafreh and Lantolf's (1994) directive that mediation within the ZPD should be contingent on the learner's needs.

Before the DA training began mediators mediated a practice student through a sample assessment. This mediation was video taped and archived as research data. Next, the mediators participated in the DA training activities that were housed within the DA training workshop. This workshop was based in work carried out by Lantolf and Poehner (2007). The following figure provides a graphic representation of the DA training session.

Figure 69. DA Training Session Format



After the training was complete, the mediators mediated a student using the same assessment that they used before the training session. This is labeled as post-training mediation in the previous figure. This second mediation was video taped and archived as research data. Individual mediators and the researcher viewed the post-training mediation together. Reflection on the video taped mediation was facilitated by Bartlett's reflective circle (1990). The aim of this reflective session was to help mediators form understandings of mediational best practices. The data from the pre- and post-DA training mediational sessions was coded using thematic analysis and the following themes emerged.

Figure 70. Coding definitions from pre- and post-DA training mediational sessions

<i>Strategic Behaviors</i>	<i>Definitions and Examples</i>
create collaborative frame	Language is used in order to create a relaxed environment.
create sense of accomplishment	Praise concerning a correct answer or other achievement, <i>e.g. you did a super job.</i>
comprehension check	Asking a question or prompting with the aim of gauging a student's understanding of a word or concept, <i>e.g. As-tu compris?</i>
direct translation	Translation from one language to another, <i>e.g. proche means near</i>
provide correct response	Giving the student the correct answer.
transfer to novel situation	When something that was learned in a previous situation is applied in a new situation.
student requests mediation	Student asking specific questions either in French or English.
elicit student response	The mediator leading a student to an understanding of something that they did not previously know, <i>e.g. Les papiers sont entre le stylo et le clavier. Alors, Steve est _____ le supermarché et la rue Casino.</i>
moving the mediation along	Bring the student back on task or changing the direction of the mediation, <i>e.g. Ok, let's look at the next one.</i>
use of a physical tool	Student or mediator use of a tangible instrument with the aim of promoting deeper understanding, <i>e.g. student referring to notes that they took in previously in the mediation session.</i>

In the previous figure, themes for both the pre- and post-DA training sessions are shown. That is not to say that each theme occurred in both the pre- and post DA mediational sessions. The following figure breaks down the occurrence of themes with respect to whether or not they occurred in the pre-

DA training mediation or the post-DA training mediation, as well as their amount of change.

Figure 71. Occurrence of strategic behaviors in pre- and post-DA training mediational sessions

Strategic Behaviors	Before training	After training	Amount of change
creation of a collaborative environment	9	22	+13
create sense of accomplishment	21	34	+13
comprehension check	3	20	+17
direct translation	13	0	-13
provide correct answer	5	0	-5
transfer to novel situation	2	0	-2
student requests mediation	4	23	+19
elicit student answer	0	14	+14
moving the mediation along	0	6	+6
use of physical tool	0	5	+5

Increase in Mediational Behaviors

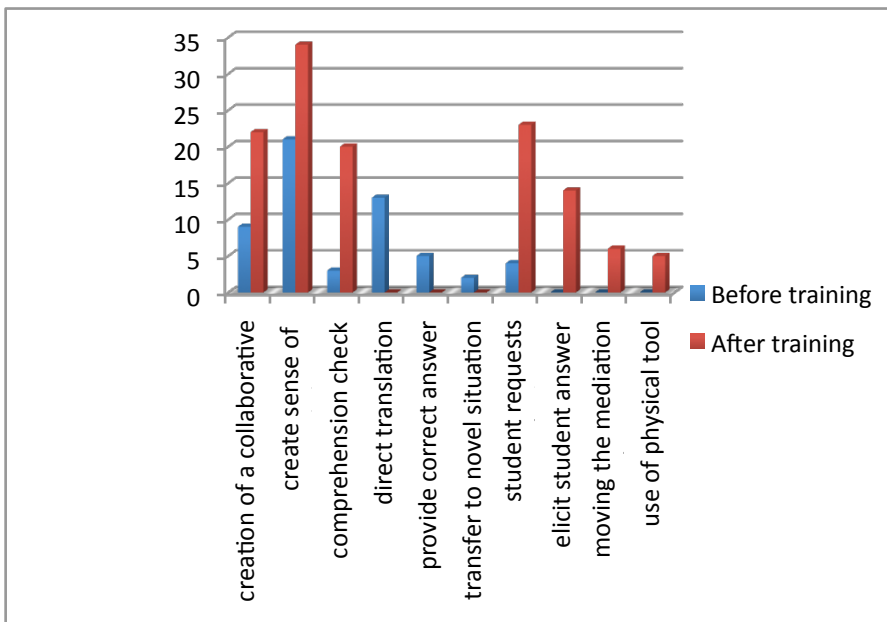
Of the ten strategic behaviors that emerged from the data, seven increased in frequency after the DA training while three decreased in frequency after the DA training. In fact, three of these behaviors were not present in pre-DA training mediation and were present in post-DA training mediation. The emergence of two behaviors, *elicit student answer* and *use of physical tool* is particularly interesting because they illustrate adherence to Aljaafreh and Lantolf (1994) directive that mediation within the ZPD should be contingent to the learner's need as well as and move along an explicit /

implicit continuum of mediational behaviors. Contingency of mediational behaviors will be discussed in more detail in a subsequent section.

The overall increase in strategic behaviors from pre-DA training mediational sessions to post-DA mediational sessions is indicative of richer mediation. That is to say, mediation that took place after DA-training contained more dialogic engagement among mediators and students. This richer dialogic engagement provides more opportunities for student learning and development. The furtherance of cognitive development is at the core of working within the ZPD and administering DA.

The following chart is provided to highlight the contrast among themes that increased and decreased after DA training.

Figure 72. Comparison of theme occurrence pre- and post-DA training




70% of strategic behaviors increased in frequently from pre- to post-DA training mediational sessions, while 30% decreased. This suggests that the mediation that students received after their mediators had been trained was

more robust than before the training. The researcher believes that the trend in more interaction, shown by the increase in number of strategic behavior occurrences, reflects more dialogic engagement on the part of the mediators. It is possible that in the pre-DA training mediation, the mediators were somewhat constrained as to the type of intervention they felt was possible to provide students. In Paul's words, "I want to see what they know." This quote reflects the belief that individual performance is the most reliable indicator of a student's future development and accounts for a more reserved mediational style in pre-DA training mediational sessions.

Greater Implicit Mediation

It is interesting to examine the themes that increased in the post-DA training session and those that decreased. Three themes; *direct translation*, *provide correct answer* and *transfer to novel situation* occurred in pre-DA training mediation and disappeared in post-DA training mediation. Two of these strategic behaviors, *direct translation* and *provide correct answer* are very explicit in terms of student needs. That is to say, these two behaviors do not respect the hierarchy of contingency established by Aljaafreh and Lantolf (1994) where they put forth that effective interaction in the ZPD should be no more than the learner needs to achieve self-regulation and range from implicit to explicit (p.463). This trend in the mediational data is exemplified in the following figure.

Figure 73. Comparison of implicit and explicit mediational behaviors in pre- and post-DA training sessions

Implicit 	Strategic Behaviors	Before training	After training	Gain after training
		creation of a collaborative environment	9	22
	create sense of accomplishment	21	34	+
	moving the mediation along	0	6	+
	comprehension check	3	20	+
	focus on problem area	39	75	+
	elicit student answer	0	14	+
	use of physical tool	0	5	+
Explicit	direct translation	13	0	-
	provide correct answer	5	0	-

The theme entitled *transfer to novel situation* also occurs in pre-DA training mediation, but not in post-DA training mediation. The disappearance of this theme is puzzling, due to the fact that during the DA training session special attention was placed on the assertion of Feuerstein (1979) that the MLE (a concept remarkably similar to the ZPD) cannot occur unless the novice is able to apply mediation to a new situation. The presence of *transfer to novel situation* in the pre-DA training mediational sessions and its absence in the post-DA training mediational session suggests that mediators conducted their mediation in a inconsistent manner that does not reflect an understanding of what type of interaction leads to development in SCT. In the section on DA training implications, suggestions are given that address the mediators' misunderstandings of SCT and DA. These suggestions are provided so that future DA training sessions will produce mediators that

mediate in a consistent manner keeping with Vygotsky's conceptualization of the ZPD.

Discussion

Overall there are two main points that the researcher offers in response to research question one. First, after DA training there was an increase in the instances of strategic behavior occurrence. This reflects greater opportunities for dialogic engagement and a push for development taking into account the students' ZPD. When strategic mediational behaviors are scarce, there are fewer opportunities for interaction with students and thus fewer opportunities for development and cognitive growth.

Second, after the DA training the mediators increased in the implicitness of their mediation. For instance, mediators in their pre-DA training mediation used two very explicit strategic behaviors; *direct translation* and *provide correct answer*. However, in post-DA training mediation these two explicit strategic behaviors did not manifest themselves. The researcher believes that mediators felt constrained in the type of mediation that they could offer students in their pre-DA training mediational session

The disappearance of the two most explicit strategic behaviors illustrates the fact that mediators offered mediation that was, in general, less explicit than in pre-DA training mediation. Future research should investigate if DA training does indeed lead mediators to produce mediation that is less explicit in nature. Offering less explicit mediation to students increases the opportunities for dialogic engagement (just as the increase in mediational

behaviors does) and therefore provides students with cognitive growth opportunities. This is done so that the mediator is able to maximize the amount of useful dialogic engagement and offer great possibilities of development and learning.

In the previous section the first research question of this study was discussed. In the subsequent section the second research question will be addressed.

Question 2

What are the strategic behaviors that occur during DA sessions and how do these behaviors vary for the different levels of language learner experience?

This question examines how mediators work with students during mediational sessions and what, if any, difference there is among different language levels. It is important to note that language experience level in this situation means the amount of time that a student has spent in a class. For instance, if a student has taken, or is currently enrolled in French 2, then they would be classified as being in the second level of language learning experience.

An examination of the data collected in this study shows that indeed there are differences in the mediational behaviors among the different language experience levels. That is to say, some strategic behaviors change from level one to level four while others do not. Moreover, there is variation of mediational behaviors in language experience levels by mediator. Finally,

the language choice of mediators seems to be affected by the level of the student.

When this study was initially proposed, the researcher planned to examine four different language experience levels. However, as data collection ended and analysis began, it became clear that the mediational differences between the first and second, second and third, and third and fourth language experience levels were virtually non-existent. Therefore, in collaboration with this study's advisors, the researcher decided to look at only the first and fourth language experience levels.

Mediational Behavior Differences Related to Language Experience Level

Two strategic behaviors; *ask student to describe strategy* and *ask student to justify response* and occur in level one mediation and not in level four mediation. Moreover, the strategic behavior *student request mediation* appears in language experience level four and not in language experience level one. The following chart details the differences between the strategic behaviors that occurred in language experience levels one and four.

Figure 74. Difference in strategic behaviors in level one and level four mediation

Strategic Behaviors	Level 1 Experience		Total	Level 4 Experience		Total
	Arlene/ Liz	Paul/ Brittany		Eloise/ Ginger	Vanessa/ Caroline	
Ask student to describe strategy	5	0	5	--	--	0
Ask student to justify response	5	5	10	--	--	0
Ask student to translate	2	4	6	3	0	3
Comp check	7	1	8	1	1	2
Create collaborative frame	3	3	6	7	0	7
Create sense of accomplishment	4	7	11	8	4	11
Direct translation	1	3	4	7	2	9
Elicit student response	3	5	8	12	4	16
Mediator speaks key phrase	4	7	11	16	2	18
Moving mediation along	3	0	3	2	1	3
Student requests mediation	--	--	0	9	8	17
Targeted listening	1	2	3	18	6	24
Use of physical tools	1	1	2	3	1	4

The behaviors *ask student to describe strategy*, *ask student to justify response* and *student requests mediation* vary while many others are consistent across all four levels. The reason for this seems to point to the fact that mediators are responding to individual student needs by offering individualized mediation. This implies that they, for the most part, ignored the language experience level of the student and instead focused on providing

learner centered mediation. This level leads the researcher to speculate that a more sensitive classification of students' language proficiency (such as the American Council on Teaching of Foreign Languages Oral Proficiency Interview {OPI}) could uncover differences in mediational strategies among proficiency levels. It is important to note that some scholars believe that the OPI make false assumptions about language learning when viewed from the SCT perspective (Lantolf & Frawley, 1985, Lantolf & Frawley, 1992). However, there currently are no measures of language proficiency that are grounded in SCT.

Tomlinson (2001, 2003) describes focusing on individual student needs as differentiated instruction. Underlying this approach is the belief that learning is more effective when teachers can effectively navigate differences in students' socio-historical backgrounds. Tomlinson adds the "key goal of differentiated instruction is maximizing the learning potential of each student" (2005, p 263). In order to maximize each student's mediational experience, mediators tailored their mediation to the individual levels of the students. They also created learner-centered mediation. That is to say they focused on student needs and not language experience level-centered when crafting their mediation.

Tailoring mediation to individual student needs will sometimes mean disregarding an officially designated classroom experience level. This notion is detailed by Nunan (1995) where he expands on his understanding of the learner-centered classroom. He states,

in a learner-centered curriculum, key decisions about what will be taught, how it will be taught, when it will be taught, and how it will be assessed will be made with reference to the learner. Information about learners, and, where feasible, from learners, will be used to answer the key questions of what, how, when, and how well (p. 134).

Focusing on student needs (as is done in the learner centered classroom and as is advised by the differentiated instruction literature) and not their language experience level could account for the reason that there is little variation in the strategic behaviors of mediators across the various mediational levels. The following chart is provided with the aim of illustrating the differences in strategic behavior use in relation to language experience level.

Figure 75. Distribution of strategic behaviors across language experience levels (including pre- and post-DA training)

<i>Strategic behavior</i>	<i>pre- and post DA training</i>	<i>Level I</i>	<i>Level IV</i>
ask student to describe strategy		X	
ask student to justify response		X	
ask student to translate		X	X
comprehension check	X	X	X
create collaborative frame	X	X	X
create sense of accomplishment	X	X	X
direct translation	X	X	X
elicit student response	X	X	X
mediator speaks key phrase	X	X	X
moving mediation along	X	X	X
provide correct response	X		
transfer to novel situation	X		
student requests mediation	X		X
targeted listening		X	X
use of physical tools	X	X	X

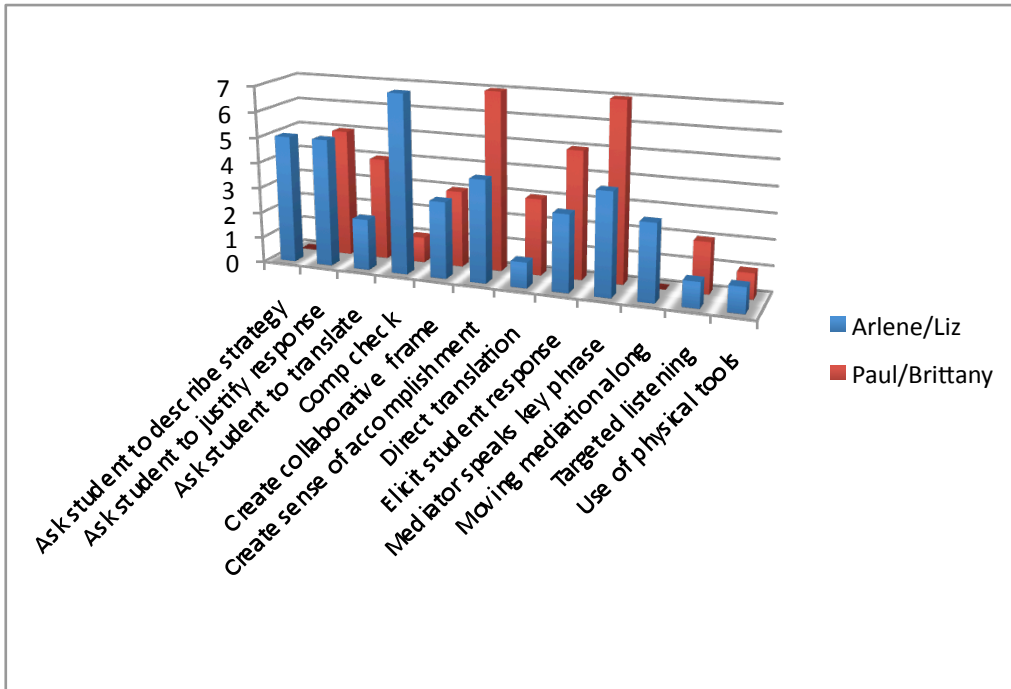
Strategic Behavior Differences of Mediators

In this section the differences in the strategic behaviors of mediators among the various levels of language experience are detailed. That is to say, strategic mediational behaviors with respect to the mediator are discussed.

Notice that the strategic behavior entitled *ask student to describe strategy* and *ask student to justify response* are the only themes that occurred in language experience level one that did not occur elsewhere. It is interesting to note that *ask student to describe strategy* did not occur in Paul and Brittany's mediation, but did occur in Arlene and Liz's mediation. This, along with the fact that there is very little difference in mediation across the different levels of language experience for a number of the behaviors, suggest that the mediational style and student needs, and not the language experience level, is the primary determiner of strategic behavior manifestation.

This finding is consistent with Feuerstein's (1979) ideas. He asserts that mediation is highly individualized and that attempts to standardize it sterilize the mediator/student experience. That is to say, studies that assert that there is one type of mediation that is equally accessible to each and every student of the same level of language experience are incommensurate with Feuerstein's conceptualization of DA. The following figure illustrates the behaviors that occurred in level one mediation, with respect to the mediator/student group.

Figure 76. Strategic behaviors in level one mediation with respect to mediator/student group

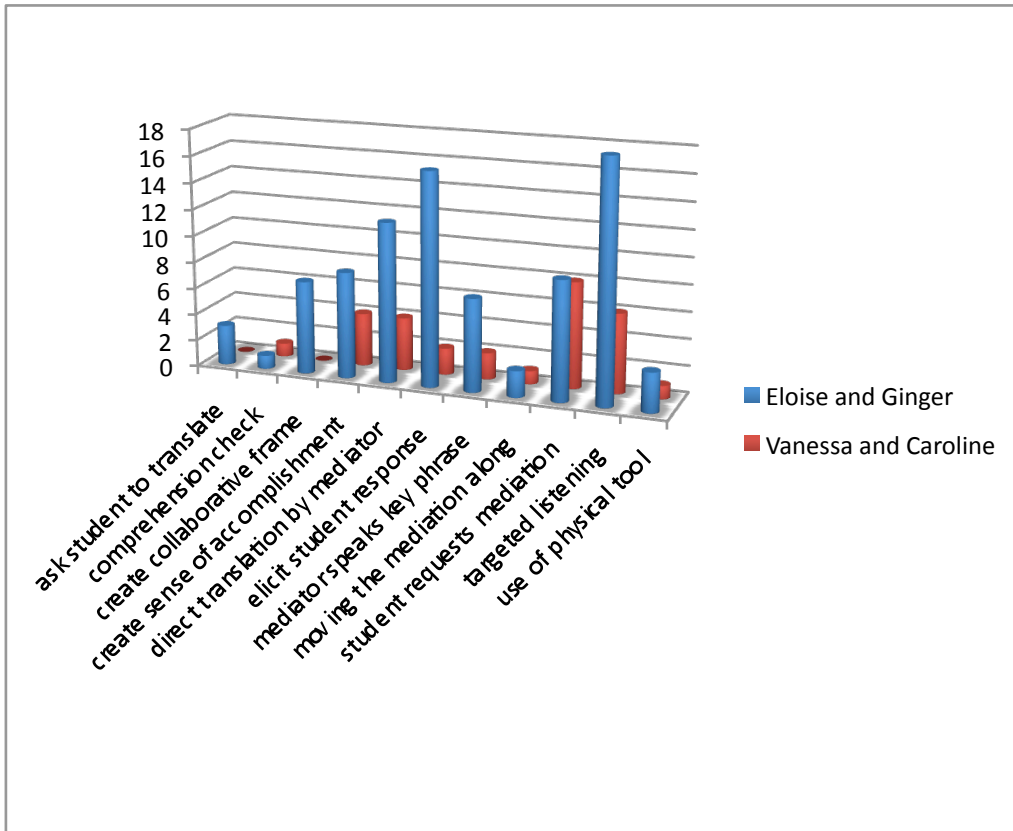


There are four strategic behaviors that occur in the mediation of one mediational dyad that does not occur in the other: *ask student to describe strategy*; *ask student to recall specific information*; *moving the mediation along*; and *student requests mediation*. The behaviors *ask student to describe strategy* and *moving the mediation along* do not occur in the Paul and Brittany dyad. While, the strategic behaviors *ask student to recall specific information* and *student requests mediation* does not occur in the Arlene and Liz dyad. Differences in the language experience level of students do not explain why some behaviors are present in some mediational sessions and not others. Arlene and Paul both mediated students at the first level of language experience. Therefore the researcher asserts that the

mediational style and student needs and not the language experience level of the student is the primary determiner of strategic behavior manifestation.

The following figure illustrates the behaviors that occurred in level four mediation, with respect to the mediator/student group.

Figure 77. Strategic behaviors in level four mediation with respect to mediator/student group



Notice that there are two strategic behaviors that occur in the mediation of one mediational dyad that does not occur in the other: *ask student to translate* and *create a collaborative frame*. The behaviors *ask student to translate* and *create a collaborative frame* occur in the Eloise and Ginger dyad and not in the Vanessa and Caroline dyad. As in the previous example with the first level of language learning experience, differences in the

language experience level of students does not explain why some behaviors are present in some mediational sessions and not others. Eloise and Vanessa both mediate students at the four levels of language experience. This, when taken into account with the findings of the proceeding section on the differences in strategic behaviors between mediators at the first level of language learning experience, strengthens the researcher's supposition that teaching or mediational style and student needs, rather than the language experience level of the student, are the primary determiners of strategic behavior.

Language Choice

The decision of the mediators to offer mediation to their students in either French or English was contentious when discussed during the DA training workshop. In fact, Paul and Arlene both insisted that mediation should be done entirely in French. Arlene argued, "it [mediating only in French] can be done. I did it in the classes that I taught and I expect my interns to do it too." Paul nodded in agreement.

In the first and fourth language experience level mediational sessions English was used as the primary language of mediation by each mediator. French was used, but only in giving examples or illustrating elementary concepts. However, in Paul's post-DA training mediational session, he mediated almost entirely in French. This is because he considered the student's level to be high and he also knew the student socially. He confided

in the researcher, “I met her at a French party. I knew that she spoke French and that her French was very good.”

It is interesting to note that language choice in second language DA settings has not yet been researched. The fact that Paul chose to interact with one student that he knew socially and that he considered having a high level of language proficiency is worthy of discussion.

When intersubjectivity with a peer regarding L2 communication ability has been established, as seems to be the case with Paul in his post-DA training mediation, Fishman (2000) offers three criteria that should be examined when one describes language choice group membership, situation and language regulation. Speakers of the same language or people belonging to similar cultural groups can be said to be members of the same group. Situation is the social context in which the language is used. Language regulation speaks to the fact that multilinguals sometimes choose to talk about technical issues in a common language in which vocabulary and concepts are more accessible. For example, the researcher and Paul often interact in French in social settings, but when they discuss their research, they do so in English. This is because they consider the concepts and vocabulary concerning SLA to be more accessible in English. The first two components of language choice are relevant to the interaction between Paul and Joanne and will be discussed below. The issue of language regulation is not germane to Paul and Joanne’s interaction, as they were not speaking in a register that required language regulation.

The fact that Paul knew Joanne (the student that he mediated in post-DA training mediation) socially points to the fact that she had established group membership with Paul. The social context of the mediation, a teacher of French working with a student of French, warrants the use of the target language. It is for these two reasons that the researcher believes that Paul chose to mediate in French with this student and mediated other students that he did not know socially, and presumably with whom he had not established group membership, in English. This suggests that mediators working with students at advanced levels of language proficiency may use the target language for mediation depending on their understanding of the student's ability and based on subconscious decisions they make about the mediational situation and the student's group membership.

Discussion

In responding to research question number two, there are three points that the researcher offers as a response. First there is a difference, however minimal, in the strategic behaviors that mediators employ at the different language experience levels. Three behaviors vary while many others are consistent across the first and fourth four levels. Second, there is a difference in the strategic behaviors in relation to the mediators that use them. Finally, the language choice of the mediator may be affected by their notion of their student's proficiency and their understanding of the socio-historical context in which they are mediating.

There are three different strategic behaviors that occur in level one mediation that do not occur in level four mediation. However, the reason for this difference does not seem to be language experience level alone. Rather mediational style and an awareness of student needs appear to be the primary factor that influences strategic behavior choice.

The above assertion is strengthened when one considers the differences in the strategic behaviors in relation to the mediators that use them. For instance, Arlene was the only mediator in level one mediation that asked students to describe the strategy they used to arrive at an answer. Furthermore, Eloise was the only mediator in level four mediation that directly translated words from French to English. Mediators engaged in differential instruction and creating a learner-centered environment, rather than focusing on different levels of student language learning experience. This implies that mediational style varies by mediator and cannot be quantified. This finding strengthens the assertions of Smagorinsky (1995) and Ranter (1997) where they state that the researcher and participants cannot and should not be controlled for when researching within the SCT paradigm.

No mediator in level one or level four mediation chose to use French as the primary language of mediation, However, Paul did so in his post-DA training mediational session. While post-DA training mediational sessions are not part of the data used to answer the second research question, Paul's language choice is nonetheless interesting to note. The implication of Paul's language choice in this situation suggest that mediators working with students

at advanced proficiency levels may use the target language for mediation depending on their understanding of the student's ability and the student's socio-historical background.

In the previous section the second research question of this study was discussed. In the subsequent section the answer to the third research question will be outlined.

Question 3

How do learners and teachers externalize reciprocity of mediation, mediational sensitivity and mediational management?

The purpose of this question is to investigate the way in which mediators and the students with whom they work strive to keep the mediation going. It seeks to describe how students and mediators engaged in DA express their receptivity to mediation; how they strategically control the mediation that they receive; and how they make judgments about the quality and nature of the mediation that occurs during DA mediation sessions.

Poehner (2005) defines the concept of learner reciprocity as the behaviors that are carried out by the student to manage the mediation. For instance, a student can be unresponsive, or respond either correctly or incorrectly to a mediator's query. Erben (2001) offers a definition of learner receptivity, labeling it as "the ability/willingness to engage with and appropriate tools and signs" (p. 409). Mediational sensitivity is defined as the ability to judge the purpose and quality of mediation offered, as well as act upon it. Finally, mediational management is a student's or mediator's ability

to deliberately direct the interaction in order to “achieve regulatory growth” (Erben, 2001 p. 409).

Analysis of the data collected in this study uncovered four categories that describe how mediators and students externalize reciprocity of mediation, mediational sensitivity and mediational management. These categories are mediator initiated content-related directives, mediator initiated collaborative pushes and student initiated directives.

Mediator Initiated Behaviors

In this section mediator initiated behaviors (those that illustrate mediational reciprocity, mediational sensitivity and mediational management) are detailed. These behaviors are offered to illustrate the way in which mediators directed student attention and in turn affected mediational reciprocity, sensitivity and management.

Content-Related Directives

A mediator initiated content-related directive is instruction given to a student so that they will perform a specific behavior. For example a strategic behavior such as *ask student to translate* is considered a mediator initiated content related directive because the mediator, in this case Arlene, asked her student, Liz, to translate a word from French into English. The following chart lists the strategic behaviors that are mediator initiated content-related directives.

Figure 78. Mediator initiated content related directives

<i>Strategic Behaviors</i>	<i>Definitions and Examples</i>
Ask student to justify response	Mediator asks student to clarify the reason that they answered in such a way, <i>e.g. why did you pick voison?</i>
Ask student to recall specific information	Mediator asks student to recall detailed information about a specific event in the listening text, <i>e.g. what time does the shop open?</i>
Comprehension check	Mediator asks student to translate from French to English or vice versa.
Elicit student response	The mediator leading a student to an understand of something that they did not previously know, <i>e.g. Les papiers sont entre le stylo et le clavier. Alors, Steve est _____ le supermarché et la rue Casino.</i>
Mediator speaks key phrase	Mediator repeats a phrase that is important to the student's understanding of a word, concept or context of the listening text.
Targeted listening	Listening to a specific part of the text
Use of physical tool	Student or mediator use of a tangible instrument with the aim of promoting deeper understanding, <i>e.g. student referring to notes that they took in previously in the mediation session.</i>

Clearly all of the above strategic behaviors illustrate the way in which mediators externalize reciprocity of mediation, mediational sensitivity and mediational management through the use of content related directives, however only two behaviors will be detailed in this section. These two were selected because they are representative of mediator initiated content related directives. The other mediator initiated content related directives listed in the above chart were expanded on in chapter four.

Ask Student to Justify Response

In Paul and Brittany's interaction at the first level of language experience, Paul directs Brittany's attention to a question that she answered incorrectly. Paul asks Brittany to discuss why she chose her answer. Keep in mind that the interaction detailed below occurs after Paul and Brittany jointly arrive at the conclusion that the answer that she has chosen is incorrect.

Paul: Why did you pick voison [neighbor]?

Brittany: I just picked randomly

Paul: voison means neighbor. If you wanted to do this again let's say tomorrow, do you think that you would know the answers?

Brittany: oh yeah, definitely. Seeing what you got wrong and why you got it wrong helps to get it in your head.

This interaction begins with Paul asking Brittany to justify her response. This gives Paul the opportunity that he needs to begin mediation in this case and allows him to keep the mediation going. Brittany replied that she simply guessed and this gives the opportunity to provide a direct translation of the word in question.

This strategic behavior illustrates mediational management on the part of the mediator. Paul asks Brittany to complete a task and she does so. Brittany's completion of the task illustrates her mediational management and her mediational reciprocity.

Targeted Listening

In this study targeted listening is defined as a mediator leading a student to the specific point in the listening text so that they can re-listen to what the mediator believes is a troublesome word or structure. The following

example is pulled from the Arlene and Liz dyad at the first level of language learning experience.

Arlene: Ok so the next question, quelle est l'adresse de la maison de la presse [what is the maison de a presse's address]? Right ? and you said dix-neuf rue du pape [nineteen rue du Pape], So what does that mean?

Liz: What's the address of the place, I remember being a little confused about one because I didn't think of numbers matched up with the actual address but still put it because I heard the du pape part. But I thought that it said dix-huit (eighteen) and not dix-neuf (nineteen), but I put dix-neuf (eighteen) (listening) oh, that's not right

Arlene: That's OK though, you got the right answer.

This exchange begins with Arlene prefacing the upcoming mediation. She prepares Liz to be mediated on the subsequent question. She then repeats the question, and then repeats Liz's answer. After having repeated her answer, Arlene asks Liz to explain the reason that she chose this answer. Liz explains that even though she answered correctly she still does not fully understand the question and the listening text that helped her answer this. At this point, Arlene finds a spot in the audio recording to which Liz was referring. After listening again with Arlene, Liz is able to self-correct and this shows a greater comprehension than she had previously. Arlene ends the interaction by praising Liz's attempt.

Here Arlene manages the mediation (illustrating mediational management) and provides what she considers to be valuable mediation to Liz. That is to say, Arlene is sensitive (illustrating mediational sensitivity) to Liz's mediational needs. This is evident when Arlene speaks key phrases of the question and offering an excerpt of the listening where the correct answer

is found. Additionally, Liz's actions illustrate reciprocity of mediation because she responds to Arlene's mediation.

These two mediator initiated content related directives illustrate the way that mediators strive to keep the mediation going in the context of this study. By using the strategic behaviors *ask student to justify response* and *targeted listening* (as well as the other behaviors listed in the preceding figure) mediators are externalizing reciprocity of mediation, mediational sensitivity and mediational management.

Collaborative Pushes

A mediator initiated collaborative push is encouragement given to a student with the goal of putting the student at ease or providing encouragement. For example, a strategic behavior such as *create sense of accomplishment* is considered a collaborative push because a mediator has somehow praised a student. The following chart lists the strategic behaviors that are considered mediator initiated collaborative pushes. The behavior *create collaborative frame* is considered a collaborative push because it affect the environment of the DA experience and helps the student understand that the mediator and the student are working together for their common good.

Figure 79. Mediator initiated collaborative pushes

<i>Strategic Behaviors</i>	<i>Definitions and Examples</i>
Create collaborative frame	Language or gestures are used in order to create a relaxed environment.
Create sense of accomplishment	Praise concerning a correct answer or other achievement, <i>e.g. you did a super job.</i>

These two strategic behaviors are closely linked. They both are done with the goal of building a cordial relationship between the mediator and the student. The main difference in the behaviors seems to be the general push to praise a student response (as in *create sense of accomplishment*) or to affect the atmosphere of the assessment (as in *create collaborative frame*). These two strategic behaviors speak to being mediationally sensitive.

Create Collaborative Frame

The strategic behavior *a collaborative frame* is defined as the mediator working to establish a relaxed learning environment. The example given in this section is from Paul and Brittany’s mediation at the first level of language learning experience. It is found in the following text.

*Paul: Est-ce que c’était facile?[Was it easy ?]
 Brittany: oui [yes]
 Paul: On va voir. [We’ll see.]
 Brittany: there were some difficulties with the last question.
 Paul: You did the first four questions right?
 Brittany: yes
 Paul: all right, so we’re going to talk about your answers. You did a very good job.*

Paul begins this interaction in French. He asks a general question to Brittany to which she responds in the affirmative. Paul continues, still in

French, letting Brittany know that they will look at the questions together.

Next Brittany responds, this time in English, telling her mediator that she had trouble with the last question. Paul tells her they will discuss all of her answers and ends by praising her work.

In order to externalize mediational management Paul explains to Brittany that they will be discussing her answers. He then immediately praises Brittany for her work. This behavior illustrates mediational sensitivity on the part of the mediator. Notice that Paul uses the strategic behaviors in tandem. That is to say, he first creates a collaborative frame with Brittany and then praises her work. This same pattern is followed in both Eloise and Ginger and Paul and Brittany's interaction.

Create Sense of Accomplishment

The strategic behavior *create sense of accomplishment* is defined as the mediator working to establish a relaxed learning environment. The following passage is drawn from the interaction between Eloise and Ginger at the four level of language learning experience. It illustrates a collaborative push in the form of the strategic behavior labeled in this study create sense of accomplishment and therefore establish mediational sensitivity.

Eloise: so she says les forces de l'ordre ont eu du mal à pénétrer [the police had a difficult time penetrating] or something (listening) Now that's really hard. She uses hard language here. OK, this is the sentence. (showing transcript)

Ginger: oh, ok, clôturé...[closed]

Eloise: Isn't that great word?

Ginger: yes,

Eloise: Difficult that was very difficult it was difficult to pick out. What does that mean?

Just before this example Eloise and Ginger have been working on a troublesome section in the listening passage. Specifically Ginger has been having trouble determining the meaning of one word based on its context within the passage. Once she has finally understood it, she repeats a difficult word. Eloise replies and shows her satisfaction with Ginger showing mediational sensitivity. Ginger responds back illustrating mediational reciprocity. Eloise concludes this episode by praising Ginger (manifesting mediational sensitivity) for her good work and her ability to isolate a complex and difficult verb from the listening passage and by asking her to demonstrate that she has understood the question.

In order to externalize mediational sensitivity and mediational management Eloise praises Ginger. She does so in two distinct ways. First she asks a question that really does not require an answer. Eloise then follows up on the unknown phrase by praising Ginger's ability to isolate the word from its context.

These two mediator initiated collaborative pushes illustrate the way that mediators strive to keep the mediation going in the context of this study. By using the strategic behaviors *create collaborative frame* and *create sense of accomplishment* mediators are externalizing reciprocity of mediation, mediational sensitivity and mediational management.

Student Initiated Behaviors

In this section, student initiated behaviors (that illustrate mediational reciprocity, mediational sensitivity and mediational management) are detailed.

These behaviors are offered to illustrate the way in which students directed mediator attention and in turn affected mediational reciprocity, sensitivity and management.

Mediational Appeal

A student initiated mediational appeal is a request made of a mediator for dialogic engagement. The goal of such an appeal is generally to expand on a student’s understanding of a concept. The following chart lists the sole strategic behavior that is considered to be a student initiated mediational appeal.

Figure 80. Student initiated mediational appeals

<i>Strategic Behavior</i>	<i>Definitions and Examples</i>
student requests mediation	Student asking specific questions.

Student Requests Mediation

Student requests mediation is defined as a student asking a specific question in either French or English. There are very few appearances of this theme in the mediational data. The Vanessa and Caroline dyad had the most instances of student requests mediation. The following excerpt comes from the mediation between Vanessa and Caroline.

Caroline: They... What does that word mean? Oh, I know that word. They did something to the handle of something.

Vanessa: au secours! Au secours! [help !, help !]

Caroline: What does that mean? Help? What does this word mean? I know that I know what it means.

Vanessa: (miming the motion of pulling something)

Caroline: pulled, oh, they pulled the handle.....

This excerpt begins with Caroline asking Vanessa a specific question. Caroline then states that she knows the phrase in question and then proceeds to translate part of the sentence into English. At this point Vanessa repeats a key phrase, but in a slightly different context from how it was used in the listening passage. Then Caroline asks three direct questions of Vanessa, and then states that she knows what the word means. Vanessa responds using a gesture to mime the motion of pulling something. Caroline is then able to correctly translate the word into English. Next Vanessa expands her mediation and wants Caroline to put the two pieces that she has understood together to form a complete thought. Caroline is able to do so and the mediational session about this structure ends.

In this passage Caroline externalizes reciprocity of mediation and mediational management by requesting mediation. She does this during a particularly difficult mediational episode for her. She is trying to guess at the meaning of a word and with Vanessa's help is able to do so.

This student initiated mediational appeal illustrates the way that students strive to keep the mediation going in the context of this study. By using the strategic behavior *student request mediation* students are externalizing reciprocity of mediation and mediational management.

Student Accepts or Rejects Mediation

An additional way that students externalize mediational reciprocity is by accepting or rejecting mediation. Mediational acceptance is when the mediation offered by the mediator is used to further dialogic engagement.

Mediational rejection is the student does not respond or chooses not to use the mediation provided to them. An example of Ginger, accepting mediation is given in the following passage drawn from the level four mediational session.

Eloise: so she says les forces de l'ordre ont eu du mal à pénétrer [the police had a difficult time penetrating] or something (listening) Now that's really hard. She uses hard language here. OK, this is the sentence. (showing transcript)
Ginger: oh, ok, clôturé...[closed]

In this passage Eloise and Ginger have been working on a phrase that Ginger has either misunderstood or was unable to isolate. After several different mediational attempts, Eloise decides to show Ginger the transcript of the listening text. When she does so, Ginger is able to pick out the difficult word. She expresses her acceptance of the mediation by using the transcript and verbalizing the word that she has not previously understood.

Just as students accept mediation, they reject it. A student rejects mediation when they refuse to use the mediation to help themselves come to an understanding of a lexical item or concept. An example of a student rejecting mediation is shown in the following passage drawn from the post-DA training mediational session between Vanessa and Joe.

Vanessa: Yes we'll both be on there. OK I'm going to ask you some things.
Joe: OK
Vanessa: You did very well on here, in fact you did perfect. You got all of the answers correct. How did you feel?
Joe: I listened to it three times.

In this passage Vanessa begins by creating a collaborative frame with Joe. She does this by explaining the context of the mediation and prefacing

her next actions. Joe responds affirmatively and next Vanessa praises his work. She then questions him about his feelings, to which he does not respond. Instead he responds that he listened to the recorded passage three times.

The fact that Joe does not accept Vanessa's second attempt in this passage at creating a collaborative frame illustrates his rejection of her mediational attempt. It seems that he did not feel that a question concerning his feelings about an assessment were relevant. Therefore, student training in future DA sessions should include a section of the importance of establishing a rapport between the student and the mediator. The continuance of mediation in this context could have lead to greater dialogic engagement concerning the listening text.

Dearth of Student-Initiated Behaviors

The paucity of student-initiated behaviors is puzzling. In fact the behavior *student request mediation* is the only overt strategic behavior that is student based. One would expect students to accept an innovative method of assessment that embraces collaboration with an expert. However, the occurrence of only one student initiated behavior could suggest that students are entrenched in traditional methods of assessment that discourage cooperation and therefore are reluctant to communicate during assessments.

This data indicates that students were unaware of the situational definition of the DA sessions. Situational definition is the way in which an individual actively creates their understanding of a condition, including the

context in which it occurs. For those working within the ZPD this means that two individuals, engaged in problem solving, come to the activity with differing representations of the objects and events. In other words, they have differing conceptualizations of the shared situation. In fact, Wertsch (1984) believes a defining property of the ZPD is two individuals, jointly working, who possess differing situational definitions.

Erben's (2001) notion of mediational sensitivity and learner reciprocity speaks to the ability of the mediator or the student to respond appropriately to their collaborator and also suitably respond to mediation. He found that students who were willing and active participants in the mediation, benefited most in terms of language development. Poehner (2005) also explored learner reciprocity. His findings mirror those of Erben. He too found that students who were willing and active participants in the mediation, benefited most from the interaction. Moreover, Erben (2001) found that student teachers (novices whose roles would be similar to the roles of the students in this study) who were able to actively manage mediation were more apt to benefit from it.

It is clear that students did not share the same situational definition as their mediators and while this is not necessarily a deterrent to working with the ZPD of a student, it inhibits student behaviors. Future research should investigate the effects of helping students to arrive at a situational definition of the DA sessions so that they may be more apt to externalize reciprocity of mediation, mediational sensitivity and mediational management.

Anomalous Strategic Behaviors

There are some strategic behaviors that emerged from the data analysis in this study that do not fit into any of the mediational reciprocity, mediational sensitivity and mediational management categories. That is to say, they do not lead to reciprocity, sensitivity or management of mediation and they do not have a content or collaborative objective. These strategic behaviors are listed in the following chart

Figure 81. Anomalous strategic behaviors

<i>Strategic Behavior</i>	<i>Definitions and Examples</i>
ask student to describe strategy	Mediator asks student what strategy they used to arrive at a specific answer, e.g. <i>How did you eliminate the incorrect answers?</i>
direct translation by mediator	Translation from one language to another on the part of the mediator, e.g. <i>proche means near</i>

These observed behaviors may be related to two different factors; the mediators' mediational styles and their differing understandings of DA. As detailed in previous sections, the only mediator that employed the mediational strategy *ask student to describe strategy* was Arlene. Arlene shared with the researcher that she was interested in language learning strategies (Oxford, 1990) and their effects on student scores. In the Oxfordian sense, language-learning strategies are steps taken by students to assist them in learning a language. They can be referred to as learning techniques or study skills. Arlene's interest in Oxfordian type strategy use and its implications for DA was so great that she asked several questions about their use in the DA

training sessions. This explains Arlene's insistence on asking her students to describe strategies that they used to arrive at an answer.

In the chapter four section entitled *Differing Understandings of DA* the way in which the mediators had divergent understandings of DA from those of the researcher are outlined. These different understandings led them to mediate in ways that did not always respect the directives set forth by Aljaafreh and Lantolf (1994). The appearance of the strategic behavior entitled *direct translation by mediator* illustrates the fact that mediators are often too explicit in their mediation and push themselves to provide students with the correct answer. This robs students and mediators of opportunities to create reciprocity, sensitivity or management of mediation. The appearance of these anomalous strategic behaviors is due to the mediators' differing understanding of SCT and DA.

Discussion

In this study reciprocity of mediation, mediational sensitivity and mediational management are externalized in two different ways; mediator initiated behaviors and student-initiated behaviors. The mediator initiated behaviors are subdivided into content related directives and collaborative pushes. The student initiated behavior includes mediational appeals.

Mediators used a variety of strategies to offer content related directives to their students. For example they used *targeted listening* to direct a student's attention to what they considered important in the recorded text.

Mediators also used collaborative strategies to keep the mediation going. For example, they used strategies such as *create a collaborative frame* and *create a sense of accomplishment* to externalize reciprocity of mediation, mediational sensitivity and mediational management. Students made mediational appeals by using the strategy *student request mediation*. There are also two anomalous strategic behaviors present in the data. The appearance of these anomalous strategic behaviors is due to the mediators' differing understanding of SCT and DA.

Summary of Research Questions and Answers

In response to the first research question, *what are the implications of a Dynamic Assessment training session on mediation?*, the researcher asserts that indeed the training did have an effect. First, there is a marked increase in the mediational behaviors that occur in post-DA training mediational session. Second, mediators offered mediation that was more implicit in post-DA training mediational sessions.

In response to the second research question, *what are the strategic behaviors that occur during DA sessions and how do these behaviors vary for the different levels of language learner experience?*, this study shows that there are numerous strategic behaviors that occurred in the mediation of this study and that there are differences in the mediational behaviors among the different language experience levels. That is to say, some strategic behaviors change from level one to level four while others do not. Moreover, there is variation of mediational behaviors in language experience levels by mediator.

Finally, the language choice of mediators may be affected by the level of the student.

In response to the third research question, *how do learners and teachers externalize reciprocity of mediation, mediational sensitivity and mediational management?*, this study found that there are four manners in which mediators and students externalize reciprocity of mediation, mediational sensitivity and mediational management. They are mediator initiated content-related directives, mediator initiated content-related collaboration, mediator initiated task management, and student initiated content-related directives.

In the previous section the research questions that guided this study were detailed. In the following section this study's implications are highlighted.

Study Implications

In this section the implications of this study will be outlined. First the implications for DA training are put forth. Second the implications for pedagogy are discussed.

Implications for DA Training

This section discusses the implication of this study on DA training. Within the implications for DA training section this study shows a need for increased theoretical discussions about SCT and DA, a comparison the Eastern and Western conceptualizations of cognition, an increase in the practical experiences that novice mediators have with mediation, a greater

emphasis on mediational planning and an increase in the mediational modeling that is provided to novice mediators.

Impact of Varying Socio-Historical Backgrounds of Mediators

All of the mediators in this study came into DA training with varying levels of expertise concerning SCT and DA. At the lower end of the continuum were Arlene and Paul, who confided in the research that they had “never taken a class on SCT” and only had cursory understandings of Vygotskian based cognitive psychology. At the upper end of the continuum was Vanessa. In fact, her very own research uses SCT as a conceptual framework. In the middle of these two extremes was Eloise. While not having taken a class on SCT, she had revealed her interest in SCT to the researcher in this study. Because of her curiosity, the researcher had shared with her different articles on SCT and DA. Moreover, as a colleague she had proofread the literature review that accompanies this study. At the time that this was written, she was preparing research on DA and SCT in the framework of teacher formation.

Given that new mediators will come to the training with varying socio-historical backgrounds several elements should be included in the DA training to address this. The DA training workshop should include a section dedicated to developing a robust theoretical understanding of SCT and DA. Special attention should be paid to the differing conceptualizations of learning and cognition that are held by Eastern and Western researchers.

Expanded Theoretical Discussions

Clearly Arlene, Eloise and Paul would have benefited from an expanded discussion of the theoretical dimensions of SCT. In fact, the researcher asserts that Vanessa would have also benefited from a greater theoretical discussion. This is because the researcher himself benefitted from the discussion of cognition and assessment in the Vygotskian paradigm. He states in his researcher's journal "the SCT part of the workshop is good for me. It allows me to solidify my understanding of what it is to really know SCT and how it applies to DA."

Future DA training sessions should include expanded theoretical discussions in order to provide a substantial theoretical base for proper DA techniques.

Recall that in the section entitled *genesis of the research questions*, the researchers gives an honest account of the difficulties that he had understanding SCT and DA. The mediators also experienced the difficulties that he experienced. The following sections aim to make reaching an understanding of SCT and DA easier for practitioners.

Differences between Eastern and Western Conceptualizations of Cognition

Considerable time was spent during the DA training session on an ad-hoc discussion of the differences between the contemporary Western and Eastern conceptualizations of learning and development. The researcher did not plan a discussion as in-depth as the one that emerged from the DA

training because assumptions were made of the participants' socio-historic background that were not true. However, the opportunity for discussion turned into an unforeseen richness because these discussions allowed the researcher to answer questions that he did not anticipate needing to answer. For instance, Arlene wanted to discuss her belief that the ZPD and $i+1$ are in fact the same concept from different theoretical bases. She seemed to be unaware of the differences between SCT and interactionist conceptualizations of language learning.

Future training sessions should include this type of workshop participant discussion. It should include targeted sections that highlight the differences between the Eastern and Western understandings of learning and development. This assertion is based on Kinginger's (2001) suggestions that the differences in Vygotskian cognitive psychology and contemporary American understandings of learning and development are so great that educators need pointed instruction in the conceptual differences between the two. Training participants might have also benefitted from an expanded discussion of the differences in the conceptualizations of the ZPD among SCT researchers. For instance, future DA trainings could explicitly detail the belief that is exemplified by Budoff and Brown (1984) that the ZPD is a heuristic. This ideas should be contrasted with Poehner and Lantolf's (2005) assertion that the ZPD was never meant to be a measure of anything, but instead a description of a learner.

Increased Practical Experience with Mediation

While a robust theoretical understanding of SCT and DA is needed to guide mediators and give them a solid, principled approach to DA, explicit modeling of the practical application of theory is also needed. To that end, three suggestions are offered to strengthen the DA training session--greater emphasis on mediational planning, a greater number of mediational experiences, and more mediational modeling.

Greater Emphasis on Mediational Planning

Data from the interviews with mediators and from the researcher's journal indicate a lack of consistent mediational planning on the part of the mediators. In fact, Arlene, Eloise and Paul all admit to not planning their mediation on a consistent basis. That is to say, at the beginning of the mediational session the mediators planned their mediation. However, as the study progressed the mediators reported no longer planning.

In the field of second language teaching Richards (1998) underscores the importance of lesson planning. He states, "the success with which a teacher conducts a lesson is often thought to depend on the effectiveness with which the lesson was planned" (p. 103). McCutcheon (1980) expands on these ideas when he asserts that lesson planning makes the teacher feel more confident, have greater mastery of the subject matter and give them the ability to anticipate problems. Finally, Farrell (2002) states, "lesson planning is especially important for preservice teachers because they may need to feel more of a need to be in control before a lesson begins" (p. 31).

In keeping with Richards' statement, the fact that the mediators in this study did not plan consistently suggests that their mediation was not as effective as it could have been. Moreover, their failure to plan could have made them feel less confident in their mediation and unable to anticipate mediational problems. Their lack of experience with DA situates them as mediational novices. Farrell believes that teaching novices may lack a sense of control. Overall the mediators' lack of consistent planning very possibly affected their mediational practice.

Greater Number of Mediational Experiences

Mediators would have benefitted from having more mediational experiences and reflection on their mediation. It is believed that additional mediational practice and reflection would offer provide them with the tools that they require to mediate in a more consistent manner.

Dewey's (1998) seminal work stresses the importance of first hand experience for novice teachers. Conant (1963) believes that field experiences are one of the most important parts of pre-service teacher education programs. In fact, he asserts that field experiences are "the one indisputably essential element in professional education" (p.142). Moreover, the focus of such field experiences is often on the procedure of running a classroom and the completion of routine tasks (McBee, 1998).

The importance of reflection in the amelioration of teaching is well documented (Bartlett 1990; Pennington 1995; Nunan and Lamb 1996; Bailey 2006). This is because it promotes a teacher's examination of their practice

and provides them with an opportunity to make decisions based on grounded observation.

A greater emphasis on the practical training of how to go about mediation, the procedure that one must follow and the routine tasks that should be completed, would have strengthened the DA training program. To that end, the researcher recommends that DA training sessions contain a robust module that provides several opportunities for mediators to examine and refine their practice. Additionally, these field experiences with mediation should be archived in order to facilitate mediator reflection. It is believed that an increased number of field experiences, as well as reflection on these experiences, will increase the consistency with which mediators provide mediation, affect the manner in which they plan, and allow them to offer mediator that is contingent to student needs.

More Mediation Modeling

Future DA training sessions should include increased amounts of mediational modeling with various mediators and students. In this study there was a module that showed videotaped sample mediation. However, it contained the mediation between one mediator and two different students.

Grossman and Williston (2003) stress the importance of modeling example student behaviors in the course of a teacher preparation program. They state “educators need to model the qualities that make their practice effective” (p. 103). Additionally, Gallego (2001) asserts that teacher education programs should better prepare novice teachers by providing “more

personal/professional experience opportunities in the classroom setting” (p. 313).

To this end, future DA training sessions should focus on providing ample opportunities for mediational modeling. Also, they should offer a greater number of mediational experiences from which mediators can glean expertise to affect their practice.

Implications for Pedagogy

In the following section the implications that this study has on pedagogy will be discussed. The findings of this study would suggest that pedagogues adopt a broader definition of assessment, adopt a broader definition of cognition, and understand that effective mediation, whether or not within a DA context, is contingent on student needs.

That is not to say that cognitivist ideas about assessment and Vygotskian ideas about assessment and cognition should be meshed. Indeed, according to Dunn and Lantolf (1998) and Kinginger (2001) they are incommensurate. Rather, the researcher calls for the inclusion of DA in the traditional foreign language teaching archetype as a valid form of assessment within its own paradigm.

Toward a Broader Definition of Assessment

Traditionally, assessment is defined as a “means for controlling the context in which language performance takes place” (Bachman 1990, p. 111). McNarama (2000) adds that language assessments “look forward to the

future situation of language use” (p. 7) by measuring a student’s independent performance.

Expanding on Bachman’s and McNarama’s ideas, Cohen (1994) offers three purposes of assessment: administrative, instructional, and research-driven. Within the administrative realm, assessment may serve to place students in appropriate class levels, provide an exemption for completing a certain task or hasten a promotion. An assessment that has an instructional purpose is one that shows evidence of student progress and gives feedback to the test-taker. Tests that drive research are centered on such issues as the investigation of student learning. They generally have the aim of uncovering the underlying processes in language acquisition.

The definitions and descriptions of assessment offered in the above section reflect Eloise’s and Arlene’s understanding of assessment. This is illustrated in the theme that emerged from the mediator interviews--*DA did not lead to learning*. Despite the fact that every student scored higher on a similar assessment that they took after mediation, mediators did not believe that students left the mediational session with any more than when they began.

Presently, there are several definitions of DA. The concept of assessment that provides a snapshot of a student’s potential developmental level by working with a more experienced peer was introduced by Luria (1961). However, he was somewhat vague in what in his description. It is for that reason that Sternberg and Grigorenko (2002, p. vii) offer a more concrete definition. They state that DA is a method of assessment that considers

the result of an intervention. In the intervention the examiner teaches the examinee how to perform better on individual items or on the test as a whole. The final score may be a learning score representing the difference between pretest and posttest scores, or it may be the score on the posttest considered alone.

However, according to Poehner and Lantolf (2005), Sternberg and Grigorenko's definition of DA "fails to capture the full force of how Vygotsky conceived of development in the ZPD" (p. 234). Instead they attest that Vygotsky's view of development was not reflected by "a specific to a single task or test...rather it must take account of the individual's ability to take what has been internalized through mediation beyond the immediate task to other tasks" (p. 234). Lidz and Gindis also offer a definition of DA that most captures Vygotsky's own ideas regarding assessment. They state, "DA is an approach to understanding individual differences and their implications for instruction that embeds intervention within the assessment procedure. The focus of most dynamic assessment procedures is on the process rather than on the product of learning" (p. 99). In other words, in DA the mediator seeks to improve learner performance through modification of student activity.

With the aim of synthesizing these definitions, informed by the work done in this study, the researcher offers the following definition of DA with the aim of it being accessible to practitioners. Dynamic assessment, in the

framework of foreign languages, is a process that involves a mediator (generally a teacher or more experienced peer) and a student jointly working through an assessment. The goal of working through the assessment is not to increase the student's score on subsequent assessments or even to have the student answer all of the questions correctly. The goal of DA is to provide the mediator with opportunities to foster cognitive growth within the student. This is done by the mediator providing hints and prompts that are contingent on student needs and that are never so explicit that the student is not challenged or simply provided with the correct answer. Learning in DA situations is evidenced by students' ability to transfer the skills that they have developed to new, albeit similar, situations. In DA there is no separation of assessment and learning. They exist in synergistic union.

Toward a Broader Definition of Cognition

The view that the human mind is mediated is the underlying premise of SCT. This means that humans do not act directly on the world, but instead use symbolic or psychological and physical tools to interact with it. Physical tools are those items by which we change the physical properties of objects (Vygotsky, 1981.) Symbolic tools are items that humans use to psychologically change their environment. Examples would be music, art and language (Lantolf, 2000). The most important of these symbolic tools is language. This is because language is the primary source by which we create, establish and maintain, or mediate, our relationships with the world.

Artifacts that are culturally constructed, such as language, are in a constant state of change. That is to say they are revised and reshaped by the people that work with them. These changes are often then inherited by the following generations who in turn continue to modify and refine these tools. One should note that the inheritance of such tools is not genetic but rather cultural.

Central to Vygotsky's position on the social nature of learning is the belief that the study of language and thought cannot be separated. This is because it is through internalized tool use that higher order thinking skills are developed. While language and thought are separate processes, they are interdependent and their individual study would be fruitless (Bakhurst, 1991). This stands in contrast to the innatist view where verbal behavior is seen as the manifestation of thought (Chomsky, 1964).

When humans begin learning about a new idea, their thoughts and mental processes are organized and defined by another individual. Regulation is the manner in which an individual sees a task as well as their ability to successfully complete it (Frawley & Lantolf, 1985). The organization of mental processes by another individual gradually shifts from being totally dependant on the other individual to being self-mitigated, or self regulated. Generally, self-regulation is characterized by a moment of epiphany when the participant suddenly understands what is needed to successfully complete a task.

The process of participating in mediation with another person can bring about internalization. Lantolf (2000) defines internalization as the process of “reconstruction on the inner, psychological plane, of socially mediated forms of goal-directed activity.” Internalization is in essence “the process through which higher forms of mentation come to be.” (p. 13). This means that the development of higher order thinking skills is caused by the appropriation of tools. That is, when an individual no longer needs the assistance of another individual to complete a task, they have appropriated the use of a tool and therefore increased their ability to think in an advanced manner. This stands in sharp contrast to the belief that once adulthood is reached cognitive development is complete, as explicated in Piaget's stage theory (1929).

With the aim of synthesizing these descriptions, informed by the work done in this study, the researcher offers the following definition of cognition targeted to foreign language practitioners. Cognition, or the development of higher order thinking skills, is the process by which tools, such as language, are appropriated by the learner. Appropriation of tools comes about by dialogic engagement, or quality mediation that is targeted to individual student needs with other people or artifacts. A tool can be said to be appropriated when an individual can use it without the assistance of another person or artifact.

Contingency of Interaction within the ZPD

To illustrate the ZPD and its role in assessment, consider the example that Vygotsky (1978) himself gave. Two children, who are both twelve years

of age, are each shown to be operating on an eight-year-old's expected level as measured by some sort of standardized assessment. However, when these same children are examined in a dynamic fashion--that is, a method that engages the child through meaningful interaction with a teacher or peer--one child's ability to complete tasks is significantly increased while the other child does not benefit from this assistance. When examining the children within their ZPD, it is clear that they do not have the same potential to learn.

Vygotsky (1978, p. 86) defined 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." While there is a general discussion of the ZPD in other of Vygotsky's writings (1978, 1981, 1986), no specific description of the processes that are contained within the before mentioned problem solving is given (Wertsch, 1984). This is the origin of the differing viewpoints on the ZPD. While the concept on which DA is based is mentioned in Vygotsky's writings, DA is never explicitly referenced.

Aljaafreh & Lantolf (1994) recommend that mediation between individuals be contingent on the novice's needs. This is done with the goal of fostering the development of higher order thinking skills. Moreover, they recommend that mediation ranges from explicit to implicit. Failure to do so risks having interaction that is not sensitive to a student's needs and therefore would not promote the transfer of learning to new situations.

It is important to note that the Aljaafreh and Lantolf study was done in the context of ESL learners and writing. This study expands the assertions of Aljaafreh and Lantolf by stating that mediation in the context of DA and second language learning should also be contingent on student needs and never be too explicit in nature. Doing so robs students of opportunities for dialogic engagement and opportunities for the development of higher order thinking skills.

Summary of Implications

In this section the implications of this study were detailed. Two broad categories, implications for DA training and implications for pedagogy, were set forth. Within the implications for DA training section this study shows a need for increased theoretical discussions about SCT and DA, a comparison the Eastern and Western conceptualizations of cognition, an increase in the practical experiences that novice mediators have with mediation, a greater emphasis on mediational planning and an increase in the mediational modeling that is provided to novice mediators. Concerning the implications of this study to pedagogy, this study concludes that DA theoreticians adopt two broader definitions of DA and cognition. The aim of these broader definitions is make the underlying concepts and terms more accessible to practitioners.

Future Directions for Research

This section outlines the future direction for research that this study puts forth. First the effects of student training are discussed. Second the

effects of expanded training time are detailed. Finally the possible replication of this study is outlined.

Effects of Student Training on the Externalization of Reciprocity, Mediatlional Sensitivity and Mediatlional Management

Given the death of student initiated behaviors that externalized reciprocity, mediatlional sensitivity and mediatlional management, future research should examine the effects that student training would have on student engagement in DA. For instance a training program for students should be established that teaches them the goal of DA and lets them know that collaboration during an assessment is viewed in a positive manner.

Flaitz et. al. (1995) conducted a study with a larger number of Spanish as a foreign language, university-level students. They investigated the benefits of what they term a metacognitive awareness-raising program. This program was a 50 minutes session with the aim of helping students to develop awareness of Oxfordian language learning strategies (based in the cognitivists language learning paradigm) and their usefulness for foreign language learners. Their study found that the awareness raising session lead to significantly higher final course grades.

In a second study Feyten et. al. (1997) investigated whether or not the increase in student scores could be attributed to the content of the training session or socialization among students. They found that both the content and socialization aspect of the training affected student achievement.

Future research with DA should examine the effects of an awareness raising session on students such as the ones conducted by Flaitz et al (1995) and Feyten et al (1997). These types of session would lead to a more concert situational definition on the part of the students and therefore lead them to have greater reaction to mediation.

Effects of Expanding Training Time

This study shows that mediators and the researcher often had different understandings of DA and its conceptual framework. The DA training session did not lead to the establishment of intersubjectivity between the mediators and the researcher. The expansion of training time for the DA workshop could affect the manner in which mediators mediated students.

Richards and Farrell (2005) detail the effectiveness of workshops for foreign language teacher development. In fact, they state “workshops can be a crucial strategy in the implementation of a curriculum or other kind of change.” They go on to state, “if a new educational policy mandates an unfamiliar teaching or curriculum approach...workshops would be an ideal format for preparing teachers for change” (p. 25).” Nevertheless they fail to give guidelines concerning the amount of time that should be devoted to these workshops.

In a study of university level teaching professionals Coffey and Gibbs (2000) report that the level of teacher quality, as measured by student assessment satisfaction surveys, can be affected by training sessions. Gibbs and Coffey (2004) show that training for teaching staff at universities is

effective in pushing instructors to change their teaching approaches causing them to lead more student centered classes. However, the time spent on training in these studies was substantial; 250-300 hours and 60-300 hours respectively.

Future research on DA training should examine the effects of different amounts of workshop contact hours in terms of the differences in mediational behaviors of the mediators. Moreover, the expansion of contact hours and its effects on mediator's conceptualizations of DA should be investigated.

Replication of this Study

An interesting area of research would be the replication of this study, taking into account the researcher recommendations concerning the DA training. With the inclusion of a more robust training session that include modules on the conceptual framework of SCT and DA, an expansion of practical training experiences for mediators and student awareness raising sessions, it is clear that the mediation that students received would be different and more in keeping with Vygotsky's ideas and the suggestions of Poehner (2005); Poehner and Lantolf (2005); Lantolf and Poehner (2004); Aljaafreh and Lantolf (1994) and Feuerstein (1981).

This section has outlined the future direction for research that this study puts forth. First the effects of student training were discussed. Second the effects of expanded training time were detailed. Finally the possible replication of this study was outlined. The following section addresses some potential innovations in DA.

Potential Innovations in DA

Once that this study has been replicated with increased mediator training and the inclusion of student awareness raising sessions, strategic behaviors should be analyzed. The behaviors, based on mediation that is more in keeping with Vygotskian ideas, could then serve as the basis of a computer based DA. This DA would be interventionist based on work done in an interactionist setting.

The creation of a computerized DA from an interactionist perspective is a monumental task. The researcher, with the guidance of his academic mentors, therefore decided to break the study into two manageable parts. In future studies the actual computer mediated DA will be created.

As this study concludes, there are some questions concerning the second phase that present themselves. Firstly, how would a computer know how to make a participant feel more comfortable? One possible way would be eye-tracking software such as the kind proposed by Carpenter (1998) and facial expression recognition algorithms (Yacoob & Davis, 1996). Eye movements and facial expressions can indicate the state of mind of an individual. Therefore, when a student engaged with a computerized DA exhibits signs of frustration, the computer could offer encouragement and a small diversion with the aim of putting the student at ease.

Conclusion

This study has detailed the effects of DA training session on mediators. It has investigated the strategic behaviors that mediators use at different

levels of language learning experience. Finally it has outlined the ways in which student and mediators externalize reciprocity, mediational management and sensitivity. While these three research questions guided the study, many more questions have arisen. The data collected in this study is incredibly rich and is poised to inform the still nascent body of literature surrounding DA in L2 contexts.

This study is also a natural springboard for other research projects. I hope to continue exploring the ways in which DA can be used in the foreign language classroom and how DA training can be structured so that mediators and students have richer mediational experiences. This study is only the beginning of my journey as a researcher and my investigation into a valid and reliable method of foreign language assessment.

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Appendices

Appendix A: DA Training Agenda with Activities

The DA training outline is based on Lantolf and Poehner (2007). All activities come directly from that work.

DA Training Agenda

Materials:

White board	Creation of hints and prompts worksheet
Markers	Case study worksheet
DVD player/video	Video discussion questions
Computer with Internet access	Mediator assessment packet

Outline of Training:

1. Vygotsky's theory

- a. Mediation--relationship between humans and the world is not direct
- b. Tools--use of tools to interact with the world—example of computer to write a composition
 - i. physical (hammer, pencil)
 - ii. psychological (language, art, math)
- c. regulation—use of tools to influence others—asking a question (could you go to the store for me?) language as a tool to influence some else's actions
 - i. object regulation—an object tells us to do something (a persuasive advertisement)
 - ii. other regulation—someone tells us to do something (a parent tells a child to do their homework)
 - iii. self regulation—we tell ourselves to do something (we 'have a conversation' with ourselves—"I need to concentrate on driving slower before I get a ticket")
- d. planning—thanks to humans' ability to use tools and cultural artifacts we can control the world around us
 - i. first we plan symbolically—create an action plan in our minds
 - ii. second we carry out our plans mentally—act out our plan in the physical world
- e. goal-directed activity
 - i. our actions in the world have a purpose
 - ii. the goals and therefore our actions are culturally bound
 1. in childhood the prevalent, goal-directed activity is play—its purpose is understanding cultural norms
 2. education—understand the world that isn't readily present

- a. in education the ability of students to manipulate written language is a major developmental step in cognitive growth---*use this as a springboard to introduce development*

f. development

- i. movement from object, to other to self—this is called internalization
- ii. development comes about by working in dialogic union with someone
- iii. Piaget—teaching should follow development
- iv. Vygotsky—teaching should drive (causes) development
 - 1. Teaching/testing should look toward the future and not the past
 - 2. Teaching should target the upper limit of what a student can do (actual development)—this is reflected by individual performance on assessment
 - 3. A teacher working with a student to solve a problem uncovers the student's emerging abilities—emerging is the same as proximal
 - a. To determine this upper limit one investigates what kind of interaction students need to accomplish a task
 - b. This teaching range is the ZPD

g. zone of proximal development

- i. way of envisioning/describing development
- ii. it is not something that can be measured (descriptor vs. heuristic)
- iii. what a student can do with suitable mediation—*draw figure on board*
 - 1. actual development (independent problem solving) doesn't reflect potential or future development
 - a. this is because the same processes that lead to the person's actual level, may not be the same ones that will be used in their future development
 - b. a student's future is not a continuation of their past

2. Dynamic Assessment (DA)

- a. Sees instruction and assessment as existing in seamless union
 - i. Based on the ZPD
 - ii. Working in dialogic union uncovers emerging abilities (construct a ZPD)
 - 1. Within a Vygotskian framework this investigation of potential development (emerging abilities) is more valid than traditional assessment's measure of actual

- development
- b. Stands in contrast to the more traditional view of assessment (static assessment)
 - i. Teacher doesn't assist students during the exam
 - ii. Students that use tools (text, notes, another student's paper) are seen as threatening test validity and reliability
 - iii. Traditional assessment (static assessment) looks at a student's past (actual development)
 - iv. DA looks toward the future (potential development)
- c. Two approaches to DA
 - i. Interventionists
 - 1. standardization of mediation
 - a. mediators read from a list of prompts
 - b. no room for improvisation based on the student responsiveness
 - ii. Interactionists
 - 1. Mediation is fluid
 - 2. Mediation is based on a teacher experience and the manner in which the student is responding to the interaction
 - 3. In this study we will be using this model
 - a. It is more in line with the way I view the ZPD
 - i. The ZPD cannot be measured, therefore standardization is pointless
- d. Models of mediation
 - i. Sandwich
 - 1. Pretest/ mediation/ posttest
 - 2. Used mainly in interventionist DA
 - 3. Thought to preserve psychometric properties
 - ii. Cake
 - 1. Question/ mediation/ question/ mediation
 - 2. Fosters dialogic engagement
 - 3. This is the model that we will use in this study because it allows for greater interplay between mediator and student
- e. Role of the mediator (teacher)
 - i. Offers hints and prompts to student while they are engaged in the assessment
 - ii. Instructs students, helping them arrive at the right answer
 - iii. If the student answers correctly, they probe to see if they just guessed
- f. What is quality mediation?
 - i. Graduated—implicit to explicit
 - ii. Contingent—based on the learner's needs
 - 1. Sensitive to the needs of the learner
- g. DA vs. formative assessment

- i. Formative assessment
 - 1. sees assessment and instruction as existing cyclically—one feeds back into the other
 - 2. feedback, if included, is short and reveals little about the nature of the error, not sensitive to a student's ZPD
 - 3. goal is not necessarily cognitive development, can be the completion of a task—short term
 - 4. not theory guided
- ii. DA
 - 1. does not make a separation between assessment and instruction
 - 2. feedback is individually tailored to the student, it is elaborate as it needs to be (responsive to student), it is sensitive to a student's ZPD
 - 3. goal is cognitive development-long term
 - 4. guided by Vygotskian SCT
- h. discussion and questions
- i. activity 1—creation of hints and prompts
- j. activity 2—case study
- k. activity 3—Teacher's guide video (duration of video ~20 minutes)
 - i. possible discussion questions
 - 1. What type of mediation did you see in the video?
 - 2. How did the mediator interact with the student?
 - 3. How did the type of mediation differ from student to student? What would account for this difference in mediation?
 - 4. What cues did the students offer that guided the mediation?
- l. activity 4—DA practice session and reflection

Activity 1—Creation of Hints and Prompts

Sample Reading Comprehension Assessment

Read the following passage and then respond to the questions with a brief but complete answer. Your answers should be based on your understanding of the information presented in the text rather than your personal views or outside reading you may have done.

Of Monkeys and (Foolish) Men

Politicians, parents, teachers, and students are currently debating the proper way in which science classes should discuss the origins of human life. Currently, most biology textbooks present the Theory of Evolution and the processes of Natural Selection as first proposed by Charles Darwin and subsequently researched by scientists around the globe. This state of affairs has made some Americans uncomfortable, particularly certain religious groups who feel that evolution undermines theological explanations of life. Particular outrage is directed at the claim that modern humans share a common ancestor with other primates.

Sadly, science teachers have sometimes succumbed to pressure groups and simply pass over the chapter(s) addressing evolution. This, in turn, has led scientists to criticize biology education in American schools on the grounds that students are cheated out of learning about one of the preeminent aspects of modern scientific research. The debate has gained even more steam with the emergence of Intelligent Design. This perspective maintains that evolution alone cannot explain highly developed life forms and that some greater intelligence or force must therefore be operating behind the scenes. Although there is no hard evidence to substantiate these claims, some policy makers have rallied around this idea and have even suggested that it be included in science classes as an alternative to evolution. Scientists argue that proponents of Intelligent Design are simply trying to bring God into the biology classroom. Perhaps if Intelligent Design one day has as much scientific evidence supporting it as the Theory of Evolution, both will be presented in textbooks as competing explanations of life.

- i) What is the main idea of this passage?
- ii) Does the author do an adequate job portraying both sides of the argument? Support your answer with examples from the passage.
- iii) How would you characterize the author's attitude toward Intelligent Design?
- iv) What does the passage suggest about the future of the debate?
- v) How do you interpret the meaning of the passage's title?

2. Another common assessment that we see in school as well as in other settings is the multiple-choice test. In these tests, some choices are usually more appealing than others, but there is only one answer that the test writers have determined is correct. No partial credit can be given because the examinee either gets it right or not. DA is particularly relevant to this kind of testing because the multiple-choice format is likely to hide differences among individuals since all wrong answers are treated the same. For the following multiple-choice questions, which were inspired by the US naturalized citizenship test, develop a set of hints/prompts arranged from least to most explicit. (Note that the correct answers have been underlined.)

The following questions test your basic knowledge of US history and government. Select the correct response for each question.

- 1) Who famously uttered, "Give me liberty or give me death?"
a. Abraham Lincoln b. Patrick Henry c. John F. Kennedy d. Karl Rove
- 2) Which branch of the government proposes laws?
a. legislative b. executive c. judicial d. White House
- 3) What is the head executive of a state government called?
a. mayor b. governor c. president d. senator
- 4) In what month is the new president inaugurated?
a. October b. November c. January d. May
- 5) What were the 13 original states of the US called?
a. Territories b. Kingdoms c. Empires d. Colonies

Activity 2—Case study

In the following case study, you will read text drawn from Aljaafreh & Lantolf (1994) that explored a tutoring session with two university ESL learners, Nina and Yuko (pseudonyms) enrolled in a beginning-level reading and writing class. The students met each week with the tutor (T) outside of their regular class meetings for additional help with their written compositions. After having read the interaction between the student and the mediator, answer the questions at the end of each section.

Part A (The text in quotes indicates reading of the essay)

Background: Prior to engaging in cooperative dialogue, T asks the learners N and F to read through their essays, underlining errors and correcting what they can. The tutor is present while each student completes the initial reading, but is busy with other tasks and is not attending to the learners. After the solo reading of the essay, the tutor and the student focus on particular areas of each essay where the learners have problems or questions.

Excerpt 1—N

1. N: Okay....”I would like spend in....
2. T: Okay?
3. N: Spend
4. T: Read again
5. N: uhum “ I would like to spend”
6. T: Okay, you’re missing to here
7. N: “To spend in United States two or three years.”

Excerpt 2—Y

1. T: Okay. “After I will study in Boston for nine months, I’ll return my country.” What do you mean “after” here? Do you mean after this (referring to previous paragraph) or after...you study nine months you go back?
2. Y: Yes, after nine months I mean
3. T: Uhum
4. Y: After nine months

5. T: After nine months you go....
6. Y: "I'll go back my country"
7. T: You will back
8. Y: "I will be back my country...."
9. T: Okay, "After I will study in Boston for nine months [ah....(softly)] nine months, I'll return my country." Okay, what is....do you think....is there anything missing here? "I'll return my country..."
10. Y: Return to?
11. T: Okay

Discussion Questions:

1. Is the tutor offering interactionist or interventionist mediation? Why? And does it take the "cake" or "sandwich" format?
2. Identify the error that the learner makes in Excerpt 1 and then again in Excerpt 2. How does the tutor bring the learner's attention to the errors? In each case, would you characterize the mediation offered as explicit or implicit? It may be helpful to refer to Aljaafreh and Lantolf's Regulatory Scale (shown below)

<ul style="list-style-type: none"> • Effective help is...
1. Graduated—no more help than is necessary
2. Contingent—Should be based on actual need and removed when the person can function independently
<ul style="list-style-type: none"> • Provides a 12 point hierarchy of feedback from implicit to explicit
1. Child reads looking for errors
2. Construction of collaborative frame
3. Focused reading of sentence with problem
4. Tutor rejects unsuccessful attempts at recognizing the error
5. Tutor narrows down the location if the error
6. Tutor indicates the nature of the error, but does not identify it
7. Tutor identifies the error
8. Tutor rejects the unsuccessful attempts at recognizing the error
9. Provides clues to arrive at the correct form
10. Provides the correct form
11. Explains why the correct form is right
12. Provides examples of correct pattern when other forms of help fail to produce an appropriate responsive action

3. Comparing the two learners, what can you say about the type of mediation each learner may need to successfully use the grammatical feature in their future writing?

Part B

In language learning, we assume that a learner will gradually take more responsibility and greater control over their use of the L2. In the next examples, you will notice how a learner incorporates the feedback of the tutor and begins to self-regulate her performance. We are interested in how a learner begins to rely less on the tutor's corrections (other-regulation) and more on self-regulation. Further we want to see evidence that learners can apply what they learn in one situation to other contexts of language use. This we take as a strong indication of development. This is the topic of the data sets presented in excerpts (3) and (4).
Excerpt 3—N

1. T: "To Germany." Do you see anything also wrong here? "my future is can go to Germany"... What about the use of the auxiliary verb here?

2. N: Is...is....

3. T: Is can go?

4. N: Is can go

5. T: Do you see something wrong here? How to say it?

6. N: No, I don't know

7. N: Okay, how how to use...

8. N: Is will go

9. T: "One of my dreams for my future is...." (rising intonation)

10. N: Will go?

11. T: No (lengthened vowel)....

12. N: No

13. T: Okay, is...what....?

14. N: Is...

15. T: To go

16. N: To go not “can”?

17. T: Yeah, because you have here, like....this is an auxiliary and this is another auxiliary or modal

18. N: Yeah

19. T: So you have them together...

20. N: Yes, because I....the verb form and two verbs together, yes

21. T: Yeah, so yeah two verbs together. So...

22. N: I know

23. T: One of myis to go to Germany

24. N: Oh my God! (laughs)

25. T: Okay, “One of my dreams for my future is to go...”

26. N: To go to Germany

Excerpt 4 (takes place a short time after Excerpt 3 during the same tutorial session)

27. N: “Another dream mine is”....ah ah amm....what? I can change now.

28. T: Okay

29. N: Okay. “Another dream mine is....is to go” again

30. T: Okay “is to go....”

31. N: “Is to go

32. T: Okay, “Another dream of mine is:”....instead of can, “to go is to go”

33. N: “is to go to Japan. I think Japan is an interesting country in culture...

Discussion Questions

1. Identify the different ways that the tutor in Excerpt 3 offers mediation to help the learner make an adequate correction.

2. At what point does the tutor begin to offer more explicit help?
3. How does the amount and type of help offered by the tutor in Excerpt 4 differ from the earlier example?
4. What evidence can you observe that indicates that the learner is moving towards self- regulation?

Activity 3—Teacher’s guide video (duration of video ~20 minutes)

After having watched the video, as a group, answer the following questions

1. What type of mediation did you see in the video?
2. How did the mediator interact with the student?
3. How did the type of mediation differ from student to student? What would account for this difference in mediation?
4. What cues did the students offer that guided the mediation?

Activity 4—DA practice session and reflection

This assessment will be facilitated by blackboard

In this activity you will be paired with a “practice” student to whom you are going to administer a DA. Remember the principals associated with quality mediation, as well as the mediational strategies that you saw in the case study and video.

Student instructions: You will listen to a recorded passage about a famous figure in Francophone history. You will hear this passage two times. Afterward, answer the questions about what you heard.

Mediator instructions: The student will listen to the passage 2 times and then answer the questions. After they have completed the assessment, ask them to take a short break, during which you will analyze their responses. Based on their performance, develop a mediation plan. Once the student returns, let them know that you will now be working through the assessment with them. A transcript of the passage is included, as well as the answers to the questions.

En quelle siècle les Français ont-ils créé une colonie sur Hispaniola?

- a. Le seizième
- b. Le dix-septième
- c. Le dix-huitième
- d. Le dix-neuvième
- e. Le vingtième

Dans quel groupe d'îles, se trouvait leur colonie ?

- a. les Bahamas
- b. la Polynésie Française
- c. Mayotte
- d. la Nouvelle-calédonie
- e. les Antilles

Pourquoi leurs plantations étaient-elles, tellement profitable ?

- a. Le climat favorable pour les récoltes abondantes
- b. Le labeur involontaire des esclaves
- c. La fécondité de la terre
- d. La gestion efficace par les propriétaires terriens

Pourquoi est-ce que Toussaint Louverture a arrêté la révolte dans la colonie ?

- a. Les Français ont décidé de libérer les esclaves.
- b. Il est mort en luttant.
- c. Il est devenu gouverneur de la colonie.
- d. Son lieutenant est allé en France et a signé un traité

En quelle année, la vie de Toussaint Louverture s'est-elle terminée ?

- a. 1791
- b. 1794

- c. 1802
- d. 1803
- e. 1804

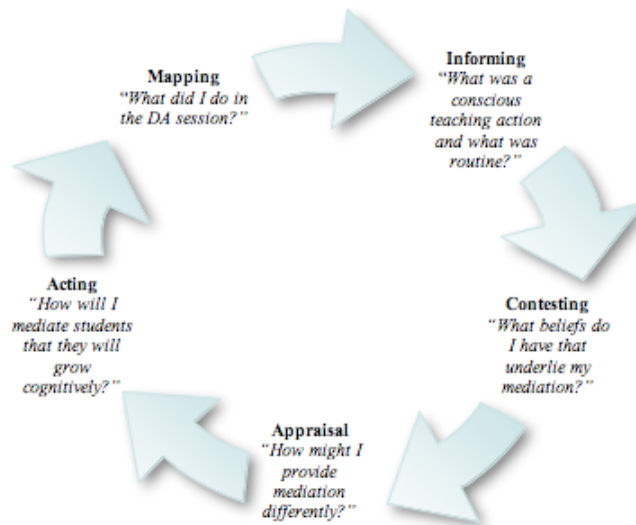
L'indépendance de la colonie a été proclamée sous le nom de quel pays ?

- a. La Réunion
- b. Tahiti
- c. Le Bénin
- d. La Guyane Française
- e. Haïti

Que représente Toussiant-Louverture pour les Haïtiens ?

- a. la liberté
- b. la culture de la canne à sucre
- c. le gouvernement révolutionnaire français
- d. le pouvoir de l'armée révolutionnaire

Mediator instructions: After the student has taken the test by themselves, and been mediated through the test, you will watch a video tape of your mediation. Please analyze it using Bartlett's model of reflective teaching, as shown below.



As you are watch the video, please use these questions as a guide in reflecting on your mediation.

1. What did I do in the DA session?
2. What was a conscious teaching action and what was routine?
3. What beliefs do I have that underlie my mediation?
4. How might I provide mediation differently?
5. How will I mediate students that they will grow cognitively?

Transcript for Toussaint-Louverture

Au 17^{ème} siècle, les Français ont établi une colonie sur île d'Hispaniola dans les Antilles; Saint-Domingue. Ils y ont établi des plantations de canne à sucre très profitables, grâce au travail forcé des esclaves. En 1791 les esclaves, commandés par Toussaint-Louverture, se sont révoltés avec succès contre les Français. Quand à Paris, le gouvernement révolutionnaire a décidé d'abolir l'esclavage en 1794, Toussaint-Louverture a arrêté le combat. Pourtant, en 1802 Napoléon Bonaparte a rétabli l'esclavage et a envoyé une armée à Saint-Domingue. Les Français ont capturé Toussaint-Louverture et l'ont emprisonné ; il est mort en captivité l'année suivante. Son lieutenant, Dessalines, a continué la lutte et en 1804 a proclamé l'indépendance du pays sous le nom d'Haïti. Toussaint-Louverture est considéré comme un symbole universel de libération pour tous les esclaves.

Questions and Answers for Toussaint-Louverture—Correct answers are underlined

En quelle siècle les Français ont-ils créé une colonie sur Hispaniola?

- f. Le seizième
- g. Le dix-septième
- h. Le dix-huitième
- i. Le dix-neuvième
- j. Le vingtième

Dans quel groupe d'îles, se trouvait leur colonie ?

- f. les Bahamas
- g. la Polynésie Française
- h. Mayotte
- i. la Nouvelle-calédonie
- j. les Antilles

Pourquoi leurs plantations étaient-elles, tellement profitable ?

- e. Le climat favorable pour les récoltes abondantes
- f. Le labeur involontaire des esclaves
- g. La fécondité de la terre
- h. La gestion efficace par les propriétaires terriens

Pourquoi est-ce que Toussaint Louverture a arrêté la révolte dans la colonie ?

- e. Les Français ont décidé de libérer les esclaves.
- f. Il est mort en luttant.
- g. Il est devenu gouverneur de la colonie.
- h. Son lieutenant est allé en France et a signé un traité

En quelle année, la vie de Toussaint Louverture s'est-elle terminée ?

- f. 1791

- g. 1794
- h. 1802
- i. 1803
- j. 1804

L'indépendance de la colonie a été proclamée sous le nom de quel pays ?

- f. La Réunion
- g. Tahiti
- h. Le Bénin
- i. La Guyane Française
- j. Haïti

Que représente Toussiant-Louverture pour les Haïtiens ?

- e. la liberté
- f. la culture de la canne à sucre
- g. le gouvernement révolutionnaire français
- h. le pouvoir de l'armée révolutionnaire

Appendix B: Sample Assessment, Transcript and Questions

Below you will find a sample assessment questions and a transcript of a listening passage. An audio CD also accompanies this appendix. It contains the recorded text on which the questions are based. Keep in mind that these questions will be presented to the student via a CBT on Blackboard.

Transcript for Toussaint-Louverture

Au 17^{ème} siècle, les Français ont établi une colonie sur île d'Hispaniola dans les Antilles; Saint-Domingue. Ils y ont établi des plantations de canne à sucre très profitables, grâce au travail forcé des esclaves. En 1791 les esclaves, commandés par Toussaint-Louverture, se sont révoltés avec succès contre les Français. Quand à Paris, le gouvernement révolutionnaire a décidé d'abolir l'esclavage en 1794, Toussaint-Louverture a arrêté le combat. Pourtant, en 1802 Napoléon Bonaparte a rétabli l'esclavage et a envoyé une armée à Saint-Domingue. Les Français ont capturé Toussaint-Louverture et l'ont emprisonné ; il est mort en captivité l'année suivante. Son lieutenant, Dessalines, a continué la lutte et en 1804 a proclamé l'indépendance du pays sous le nom d'Haïti. Toussaint-Louverture est considéré comme un symbole universel de libération pour tous les esclaves.

Questions for Toussaint-Louverture

En quelle siècle les Français ont-ils créé une colonie sur Hispaniola?

- a. Le seizième
- b. Le dix-septième
- c. Le dix-huitième
- d. Le dix-neuvième
- e. Le vingtième

Dans quel groupe d'îles, se trouvait leur colonie ?

- a. les Bahamas
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Pourquoi est-ce que Toussaint Louverture a arrêté la révolte dans la colonie ?

- a. Les Français ont décidé de libérer les esclaves.
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- d. Son lieutenant est allé en France et a signé un traité

En quelle année, la vie de Toussaint Louverture s'est-elle terminée ?

- a. 1791
- b. 1794
- c. 1802
- d. 1803
- e. 1804

L'indépendance de la colonie a été proclamée sous le nom de quel pays ?

- a. La Réunion
- b. Tahiti
- c. Le Bénin
- d. La Guyane Française
- e. Haïti

Que représente Toussaint-Louverture pour les Haïtiens ?

- a. la liberté
- b. la culture de la canne à sucre
- c. le gouvernement révolutionnaire français
- d. le pouvoir de l'armée révolutionnaire

Appendix C: Mediator and Student Interview Questions

Instructors:

- What were the main points covered in the mediation training?
- Were the main points sufficiently covered?
- What would you add to the mediation training?
- How did you prepare for the mediation session?
- Describe the mediational process with the students. What were the outstanding behaviors? Describe your mediational strategies. How did you decide which strategies to employ during the mediation session?
- How did you keep the mediation going?
- Where any of your mediational strategies particularly effective or ineffective? Why?
- Did the mediation session proceed as anticipated or as was described in the mediation training?

Students

- Describe the mediation session.
- How did you feel in the session?
- How would you describe the mediator's knowledge of French?
- What (strategies) did the instructor do during the session?
- What kinds of mediation did you find particularly helpful? What kinds of mediation were not helpful?
- What this session helpful for you in your assessment process?
- How did you keep the mediation going?
- What did you feel was missing from the mediation session?
- Would you suggest this procedure for all assessment processes?
- How would you describe the mediator's mediational skills and abilities?

Appendix D: Raw Data

J: did you find the text difficult?

M: I thought that the vocabulary was simple. Colonie, plantations, a lot of it was close to English but some of the structure I didn't understand. I've never seen a noun inverted in the middle of a sentence. I thought that this was the subject. If I didn't understand this part.

J: In French, very often when you have a question you use est-ce que, And you have a subject that is not yet a pronoun you invert it. You invert the subject and you put the pronoun again.

M: OK, so this is referring to...

J: yes, So obviously you understood this question. Because you got it right. Right?

M: Yes

J: What does this question mean?

M: Why were their plantations... Profitable from?

J: oh, I see, That's basically the idea. Tellement means so. Why were Those plantations so profitable?

M: So profitable

J: yes, so, you understood

M: So they were involved with slaves?

J: involontaire, involintaire is a cognate, It doesn't really mean involving, volontaire?

M: no

J: involontaire ça veut dire, ils ne veulent pas travailler, ils sont obligés

M : ok, obligé travailler ?

J : oui, le travail obligatoire, should we go back? Do you want to listen to the text again?

M: sure

J: la première question, en quelle siècle, les français ont-ils créé une colonie sur l'île d'Hispaniola ? Did you understand question?

M : siècle ?

J : oui, siècle, 100, le chiffre 100, 100 ans, nous sommes au siècle 2006, le siècle précédente 2005

M : sont comme ils sont ?

J : Non, comme 98, 99, 100, Do you understand?

M: I think so. In which year....

J: (writing) c'est 100 ans comme ça

M : Which century...

J: donc, in which century

M: In which century the French, passé compose?

J: oui, c'est le verbe creer. Ca vient de, c'est le meme comme creation
M : ok, so when did they create the colonies of Hispagnola ?
J: yes
M: le dix-septieme?
J : Oui, le dix-septieme
M : the 1700s ?
J : yes, the 1700s (listening) C'était difficile parce que c'était le premier mot. It's difficult because it's the first words. So, that's why it makes it a little difficult. And this is definitely a keyword. If you don't understand siècle, If you don't hear it it's gonna make it difficult.
M: how did they say le 17ieme siècle?
J: do you want to listen to it again?
M: Yes, please (Listening) It's so easy when you're going over. It's different when you're listened to it on your own.
J: Especially when you don't know what to expect. How many times did you listen to it?
M: I listened to it the first time. I just listened to it. And then I went to the questions and tried to read the questions and find key words, Not only that I knew, But also that I'd be able to hear and takeout of the listening. And then I tried to follow it to see if the questions went in order. If analysis should again while looking over the questions to try and follow.
J: Is that the way that you should do? Is they usually the way that dictations are done?
M: on quia, which is the lab for French, that's how I do it on those dicitations. But dictation in the classroom we, its not visual. The teacher speaks and she'll read it once, I see what I can pick up. And then the second time I read it through sentence by sentence, and then you start writing down and then the second time through, then the third time through you read it again and do corrections. But that's more of a composition.
J: so, you're used to doing these kinds of things with quia.
M: If I guess that they just started quia Last semester. If and when I took French one they did workbooks. We had to listen and then you just wrote in the book. I usually end up doing that with quia anyway. I usually write it because I can write faster than I can type. That usually how I do it.
J: Did you have the feeling when you listen to the text that you understood the gist of it?
M: I wouldn't say that. No. Probably because it's so fast.
J: Could you tell me what you understood of the text?
M: Well, from listening the first time I didn't get much. I understood after I read the questions. Just because of the key words. If all the asleep you was talking about French colonization and things like that. It was talking about the past. But I didn't get as much from the Listening part.
J: So what you got was mostly from the questions.
M: yes, but I'm also visual person. That's how I work.
J: yes, so the Second question, we went over right? Why were there plantations so profitable? And you got it right. Do you understand involontaire now?

M: obligatory work

J: right, actually the synonym would be involuntary. So, if you look at the other choices that you had, le climat favorable pour les récolts abondantes. Do you understand? I mean, why did you choose this one?

M: Can we listen and see?

J: sure

M: I think that there was something that I heard it described.

J: sure (listening) So what did you get there?

M: what did I get for what?

J: how did you go from the text to that answer?

M: well, I was following it. I was following it as They were saying it. So I have looked over the answers already and because I don't know articles very well I usually just look at the first word in the last word, because that's what you're gonna hear. When you're in business sense if you'll have that time. When it's so much altogether, if you don't know the words If you don't mind answer the question.

J: so that your strategy? To listen to the last word And the last word is good.

M: well, he would either end with récolts abondants, la terre, les colons (listening) there I heard travailler

J: sure, forced labor of the slaves, So I see, your strategy is to listen for the last words.

M: Yes and to look at the answers first. In order to see if they make sense. Because favorable climate, they could very well be an answer . A reason. I know and French one that we have an answer and then we listen and we have answers that just don't make sense.

J: Right, but all of these answers are possible answers. All of these are reasonable.

M: right but that is the first thing that I do. I look at the answers and if they don't make sense than they can be the answer. That don't have to listen for those words. Does that make sense?

J: sure,

M: It's kind of hard to think about how I'd do it. I just do it.

J: la troisième question, en quelle année, la vie de Touissant Louverture, est-elle terminée?

M : This was hard, I don't think I've studied dates. I've never studied years. I've never done years like 1794 1803 or anything like that. So I didn't know what that was.

J: sure It's not easy. So, what does that mean, en quelle année?

M: In which year

J: right, la vie de Touissant Louverture

M : the life of Touissant Louverture was terminitaed ?

J: right

M: Or in what year did he die? Pass away?

J: exactly, This one is not an easy one. (listening) En 1794 Toussiant Louverture a arrete le combat. Toussiant Louverture a arrete, il a arrete le combat. Il a stoppe le combat.

M : combat ?

J : la bataille, combat, The answer is not there. So that's the trick. (Listening)
Do you understand Les Français ont capturé Toussaint Louverture?

M: Yes, the French captured Toussaint Louverture

J: et l'ont emprisonné

M: I think that is what it was. I didn't realize what they said. I didn't realize that name there. Maybe, I wasn't paying attention enough. I think that I should have caught that.

J: did you know when you read this sentence that this was somebody's name?

M: No I didn't.

J: Right, that's the thing. You should understand that this is a person. That's gonna make it easier.

M: I don't know why I didn't catch that. That just makes sense that it's a person.

J: et ils l'ont emprisonné en 1802. Il a été mis en prison en 1802,

M : quand les français, les français capture

J : Voilà, ils ont capturé Toussaint Louverture en 1802, et l'a mis en prison. So what is the answer here? (listening) Il est mort, tu comprends mort ?

M : to die

J : Um hum, il est mort en captivité l'année suivante

M : the year after

J : um hum

M: oh, ok

J: So the right answer is this one.

M: So, I wasn't even close.

J: Well, that's a tricky one. Napoléon Bonaparte a rendu le travail forcé, fait exécuter Toussaint Louverture, restauré le traité des noirs, a été exilé en Haïti, symbolise le gouvernement révolutionnaire. You wrote symbolise le gouvernement révolutionnaire

M : Honestly, I didn't get anything from listening. So I put when I knew from history. I didn't get it from listening because I couldn't understand it

J: It did you try to work through elimination?

M: I thought about putting that one on the because...

J: Actually I believe that this one is the right answer. Il a fait exécuter Toussaint Louverture. No sorry because He died in captivity. So, he wasn't executed.

(listening) The answer to this question comes before that one.

M: ok

J: it says Napoleon Bonaparte a rétabli l'esclavage. Rétabli? Établir? C'est un cognate.

M : is it a different tense ?

J : Non, ça le même, its the same root as in établissement

M: oh, ok, establish

J: voilà, et avec un r devant

M : reestablished

J : so Napoleon Bonaparte a rétabli l'esclavage

M: So he..

J: reestablished esclavage?

M: slave, you add age after the noun?

J: voila, donc en fait la bonne réponse est il a restauré le trait des noirs et ça, ce n'est pas facile. Le trait is the trade, the trade of teh blacks, of black people

M: oh, ok

J: resauturer is to restore

M: ok

J: Do you have a feel for the text now?

M: It's easier when you break it apart and take a question that question and when it spoken, when you said it. But when you said it and then we listened I could pick up on it better than if it was all together.

J: sure

M: If you can't differentiate words, you can isolate words If you don't know. Because a lot of it is liaison and things like that. If I know that when my professor is doing a dictation, when she takes it word for word then it's easier for me.

J: sure

M: If it's my French that's the problem.

J: we all have that problem the one we're learning another language.

M: When we go slow I understand it. when you did it with me understood.

J: Well, thank you very much.

M: thank you

Appendix E: Coding Report

NVivo revision 2.0.163

Licensee: admin

Project: Level 4 mediation User: Administrator

DOCUMENT CODING REPORT

Document:

Nodes in Set: All Nodes

Node 1 of 11 comprehension check

Passage 1 of 1 Section 0, Paras 43 to 44, 49 chars.

43: Ils ont cloture les grilles

44: C: closed the gate?

Node 2 of 11 create sense of accomplishment

Passage 1 of 4 Section 0, Paras 5 to 7, 237 chars.

5: M: Um hum

6: C: buildings in France

7: M: and But that would make sense because there is a big, important separation of church and state in France. So it is a possible answer as far as being reasonable, but is it what appeared in a text?

Passage 2 of 4 Section 0, Para 69, 11 chars.

69: M: Perfect

Passage 3 of 4 Section 0, Para 79, 64 chars.

79: M: That is it. They tied themselves down to the railroad tracks.

Passage 4 of 4 Section 0, Para 101, 37 chars.

101: M: That is it, et puis la derniere la

Node 3 of 11 elicit student answer

Passage 1 of 4 Section 0, Paras 9 to 13, 210 chars.

9: M: what does il y a, il y avait?

10: C: oh, there was

11: M: um hum

- 12: C: There was the alert of a bomb. No, is that word bomb in English?
13: M: That's not a false cognate. That's a real cognate. So, there was a Ö.

Passage 2 of 4 Section 0, Paras 15 to 21, 278 chars.

- 15: M: So, why couldn't the police go easily into the church, because there was something to do with the bomb. What happens in Hillsborough county in high school?
16: C: OH, A bomb threat.
17: M: yes
18: C: In the church?
19: M: maybe
20: C: Oh, ok
21: M: If you have to decide if it's true

Passage 3 of 4 Section 0, Paras 63 to 67, 231 chars.

- 63: M: What do you do in a garage?
64: C: Park. They parked a wagon on the site? Oh, track.
65: M: They parked a wagon. What do you mean by wagon? Again, that's a false cognate.
66: C: A car?
67: M: a train car. This is typically a train car

Passage 4 of 4 Section 0, Paras 117 to 119, 163 chars.

- 117: So, André Jamotte a assisté au congrès en tant que? he went to the conference in the role of a Ö
118: C: An oceanographer
119: M: Well, let's listen to it again we'll see.

Node 4 of 11 mediator speaks key phrase
Passage 1 of 2 Section 0, Paras 23 to 30, 297 chars.

- 23: M: Uh, people that carry signs that say il est defendu de defender
24: C: Ok, manifester is to protest. The protesters condemned access Ö
25: M: again we may have a false cognate
26: C: prohibited?
27: M: Uh hu
28: C: There's not room for fifteen people.
29: M: There's not room for fifteen or Ö
30: C: Only fifteen

Passage 2 of 2 Section 0, Para 37, 107 chars.

- 37: M: Ont cloturé les grilles, les grilles. How would that look if you could see it written? Grilles. G gg

Node 5 of 11 Mediator translates
Passage 1 of 2 Section 0, Para 3, 49 chars.

3: So, d'Éfendu d'Éntre means forbidden to enter.

Passage 2 of 2 Section 0, Para 97, 211 chars.

97: M: Yes so, they parked a car on the train track or They broke the rails Or they tied themselves to the track Or they pulled on the emergency brake or they destroy the locomotive. Which one is it? (listening)

Node 6 of 11 moving the mediation along
Passage 1 of 1 Section 0, Paras 47 to 48, 107 chars.

47: M: Ok, so now let go back to the question. If so, why couldn't easily going to church?

48: C: The first one.

Node 7 of 11 student request mediation
Passage 1 of 8 Section 0, Para 4, 107 chars.

4: C: OK, in the next one is the police didn't have the right to enter, enter religious, religious buildings?

Passage 2 of 8 Section 0, Para 8, 71 chars.

8: C: ok, they were, they hadÖI don't know. All I know is the word bomb

Passage 3 of 8 Section 0, Para 38, 31 chars.

38: C: G-r-i-r-i-e? I have no idea

Passage 4 of 8 Section 0, Paras 56 to 62, 185 chars.

56: how did they succeed in blocking the train.

57: M: Right, so the first one is?

58: C: They somethingÖ.

59: M: Open, that starts a word in English and in French.

60: C: guarding?

61: M: garage

62: C: Oh,

Passage 5 of 8 Section 0, Paras 70 to 72, 134 chars.

70: C: But they attached iron chemicals?

71: M: Good guess, chemin de fer is all on concept. Do you know what chemin menas?

72: C: chemicals?

Passage 6 of 8 Section 0, Paras 80 to 86, 415 chars.

80: What does that word mean? Oh, I know that word. They did something To the handle of something.

81: M: au secours! Au secours!

82: C: What does that mean? Help? What does this word mean? I know that I know what it means.

83: M: (miming the motion of pulling something)

84: C: pulled, oh, they pulled the handleÖ..

85: M: what do you yell when you're drowning, what do you yell when you need the police?

86: C: Help, au secours

Passage 7 of 8 Section 0, Paras 101 to 102, 264 chars.

101: M: That's it, et puis la dernière là. André Jammotte a assisté au congrès en tant que:

102: C: For that one I know the difference between Marine an oceanographer. I know that the talk and pollution and fish. But I didn't know the difference between those words.

Passage 8 of 8 Section 0, Para 120, 40 chars.

120: C: Or maybe a journalist? (listening)

Node 8 of 11 targeted listening
Passage 1 of 4 Section 0, Paras 31 to 36, 555 chars.

31: M: That's it. The que. Just fifteen people or only fifteen people. So these are our choices then. The church representative would not let them go in. the police don't have the right to go into religious buildings in France. The air was a bomb threat. The protesters blocked the access or it could only hold fifteen people. Let's go listen to it again. (listening)

32: C; Oh, it's the first one. (listening)

33: M: Les forces ont eu du mal à pénétrer l'église à cause de

34: C: because

35: M: Ok, let's listen again

36: C: I don't understand that part.

Passage 2 of 4 Section 0, Paras 45 to 46, 132 chars.

45: M: The and how did they do it? Listen again. (listening) Ils avaient clôturé les grilles par des chaînes. (writing)

46: C: Oh, chains

Passage 3 of 4 Section 0, Paras 97 to 100, 282 chars.

97: M: Yes so, they parked a car on the train track or They broke the rails Or they tied themselves to the track Or they pulled on the emergency brake or they destroy the

locomotive. Which one is it? (listening)
98: C: Oh, they attach themselves to the rail.
99: M: With what?
100: C: chains?

Passage 4 of 4 Section 0, Para 120, 40 chars.

120: C: Or maybe a journalist? (listening)

Node 9 of 11 write sentence~show transcript
Passage 1 of 1 Section 0, Paras 39 to 43, 166 chars.

39: M: grille, (writing on a piece of paper)
40: C: ok, U-X?
41: M: that's a good guess, because they sound alike
42: C: oh, grille
43: M: here you go. Ils ont cloture les grilles

*No other nodes in this set
code this document.*

About the author

Robert Summers is presently the Coordinator of Language Technology and Infrastructure at the State University of New York at Albany where he teaches foreign language methodology and directs the Center for Language and International Communication.

In the course of his PhD studies, Robert has developed his long-standing interest in foreign languages, technology and pedagogy by directing the World Language Education Computer Center at the University of South Florida. He has also taught French in the College of Arts and Sciences and ESOL methods, the Integration of Technology to Foreign Language Education and practicum and internship courses in the College of Education.

He holds a BS in History, a BA in French and an MAT in foreign language pedagogy.

His publications include two chapters on the application of technology to foreign language education and a chapter on the integration of dynamic assessment in a school of education.