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Integration of dynamic assessment and instructional conversations to promote development and improve assessment in the language classroom

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Abstract

This article explores how a primary school teacher utilized the frameworks of dynamic assessment (DA) and the instructional conversation (IC) within a Spanish as a foreign language classroom. DA was used to construct zones of proximal development with individuals in the classroom context. A menu of pre-scripted assisting prompts, used to respond to predictable lexical and grammatical errors, permitted the teacher to assess students while also promoting development. ICs were used to co-construct a group zone of proximal development (ZPD) in response to less predictable student errors or inquiries. The flexible mediation provided by the teacher in these instances allowed for the active involvement of more students as well as more responsive dialogue. This language teacher drew upon these two frameworks to navigate dual goals of instruction and assessment while providing mediation attuned to the ZPD of the learners. As students studied interrogative formation to complete the pedagogical task of an interview, the teacher alternated between these two frameworks based on her goal for each

interaction. Class transcripts are analyzed to reveal how these two complementary frameworks can be used in conjunction to meet both the students' and teacher's needs.

Keywords

dynamic assessment, instructional conversation, Vygotsky, zone of proximal development, foreign language teaching

I Introduction

Second language (L2) teachers must decide how to respond each time a student makes an error or asks a question in the classroom. The teacher has a variety of response options: providing the correct answer, ignoring the problem, and calling upon the same or a different student for the correct answer are common examples (DeKeyser, 1993; Lyster, 1998). The teacher often has only a split-second before responding to consider the variables at play, such as the student, the context of the error, and the lesson objective. Student errors and questions not only allow teachers to see areas of struggle and misconception, but also offer an opportunity to promote language development (Aljaafreh & Lantolf, 1994). If a teacher's responses are not guided by any particular decision-making process or framework, these opportunities for development may be missed (Rea-Dickins, 2006).

Sociocultural theory (Vygotsky, 1978) offers teachers a framework to guide their responses to student errors. Sociocultural theory emphasizes the central roles of social interaction and culturally constructed artifacts in the organization of human forms of thinking (Lantolf & Thorne, 2006). A key component of this theory is Vygotsky's (1978) construct of the zone of

proximal development (ZPD), which can be used to guide interaction in the L2 classroom (Lantolf & Poehner, 2011a; Poehner, 2009; van Compernelle & Williams, 2012). The ZPD is “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” (Vygotsky, 1978, p. 86). A teacher who understands how to provide guidance within a child’s ZPD can structure responses to student errors and questions in a way that leads the child to new understandings. Within the field of L2 acquisition, two frameworks that have been applied to guide interaction in the ZPD between a teacher and students within the classroom context are dynamic assessment (Lantolf & Poehner, 2011a; Poehner, 2009) and the instructional conversation (van Compernelle & Williams, 2012).

Dynamic assessment (DA) is a framework for responding to student errors that takes into account what a learner is capable of doing independently (actual developmental level; ADL), and what becomes possible with assistance from a teacher (ZPD). Arising from the work of Vygotsky (1978) and Feuerstein and colleagues (Feuerstein, Falik, Rand, & Feuerstein, 2003; Feuerstein, Rand, & Hoffman, 1979), DA is based on the belief that a static evaluation of a child’s present knowledge is not as revealing as a dynamic assessment of that child’s future potential. Instruction and assessment occur simultaneously in DA in that a mediator promotes development by offering assistance to a student while concurrently assessing the student’s abilities (Lantolf & Poehner, 2004; Lidz & Gindis, 2003). By attending to a learner’s responsiveness to mediating prompts, a teacher may gain a clearer understanding of that student’s future (Valsiner, 2001; Vygotsky, 1978).

Instructional conversations (IC) are a second framework for responding to student errors based on the ZPD construct. Developed as an alternative to the traditional lecture format of teaching, ICs are discussion-based lessons geared toward creating opportunities for students' conceptual and linguistic development (Goldenberg, 1991). Mediation of learning occurs in the form of dialogue between the teacher and multiple learners with the goal of promoting understanding of a particular skill, text, or concept (van Compernelle & Williams, 2012). As Goldenberg (1991) states, "the teacher encourages expression of students' own ideas, builds upon information students provide and experiences they have had, and guides students to increasingly sophisticated levels of understanding" (p. 1). Tharp and Gallimore (1991) explain that ICs are based on the belief that "teaching occurs when performance is achieved with assistance" (p. 3). During an IC, a teacher attempts to open a group ZPD through collaborative student and teacher interaction (van Compernelle & Williams, 2012) that leads students to construct new understandings of the object of study.

While research to date has separately examined the use of DA (Lantolf & Poehner, 2011a; Poehner, 2009) and the use of ICs (van Compernelle & Williams, 2012) within the L2 classroom context, no study has examined how these two frameworks can be used in conjunction to guide interaction. The present study examines how a teacher negotiated the dual goals of instruction and assessment by alternating between these two frameworks with a group of students studying WH-question formation (i.e., who, what, when, where, why, and how many) in Spanish. The primary emphasis in this work was initially on DA that utilized pre-scripted assisting prompts. While the teacher originally intended to respond to students using only a menu of pre-scripted prompts, it quickly became clear that such prompts were not suitable for every student error or question that occurred. During these instances, the teacher initiated an IC by

inviting all students into the dialogue, abandoning the pre-scripted prompts, and leading students in the construction of new understandings (Goldenberg, 1991; Tharp & Gallimore, 1991). The use of these two frameworks permitted the teacher to construct both individual and group ZPDs within the classroom to guide instruction and assessment.

II Conceptual framework

The current study has its origins in sociocultural theory, which posits that higher forms of thinking are socially and culturally derived (Cole & Engeström, 1993; Vygotsky, 1986; Wertsch, 1985). Knowledge is constructed through interaction between a child and the environment as humans use symbolic tools to mediate their own environment and the environment of others (Kozulin, 1998; Vygotsky, 1978). The most important tool for mediation is language (Vygotsky, 1986), which mediates human development through processes of internalization (Vygotsky, 1994). Internalization occurs when humans bring externally formed mediating artifacts into thinking activity, resulting in an individual's ability to complete tasks that were once only possible through mediation from others (Lantolf & Thorne, 2006). Aljaafreh and Lantolf (1994) outline three conditions for mediation sensitive to the ZPD. First, the assistance should be graduated so that implicit help is offered initially and increasingly becomes more explicit as required by the learner. Second, help should be contingent so that it is only offered when needed. Specifically, explicit forms of assistance should only be provided when implicit forms are insufficient. Third, help should occur through dialogue in which the teacher and learner co-construct the intended meaning.

1 *Forms of mediation in DA*

Two important distinctions among DA studies are the form of the mediation—pre-scripted or flexible (Lantolf & Poehner, 2004)—and the placement of the mediation—*sandwiched* between pre- and post- tests or layered throughout instruction, referred to as the *cake* format (Sternberg & Grigorenko, 2002, p. 27). Forms of DA that utilize pre-scripted prompts have been termed *interventionist* DA by Lantolf and Poehner (2004) and are most common in the field of general education (Budoff, 1987; Campione, Brown, Ferrera, & Bryant, 1984; Carlson & Wiedl, 1992; Guthke, 1992). In this approach, mediation prompts are arranged in a hierarchical manner from implicit to explicit with a numerical value representing their position in the sequence (Lantolf & Poehner, 2004; Poehner & Lantolf, this issue). This standardization allows the mediator to easily compare scores of one student to those of another (Lantolf & Poehner, 2011b). For example, Budoff (1987) based his calculation of *learning potential* on dynamic versions of standardized measures of intelligence. Similarly, Kozulin and Garb (2002) also utilized pre-scripted prompts in the *sandwich* format in their study of reading comprehension of students learning English as a second language (ESL). Other approaches also employ pre-scripted mediation, but utilize a *cake* format in which standardized mediation occurs during the administration of the assessment itself (Brown & Ferrara, 1985; Campione et al., 1984; Carlson & Weidl, 1992; Guthke & Beckmann, 2000; Guthke, 1992). In this approach, mediation is offered to an individual after each item on a test that is answered incorrectly.

Lantolf and Poehner (2004) refer to approaches that use flexible mediation, or mediation that is not scripted and can take the form of prompts, questions, hints, suggestions, or explanations, as *interactionist* methods of DA. One of the most developed forms of *interactionist*

DA is Feuerstein's Mediated Learning Experience (MLE; Feuerstein et al., 1979) in which a mediating agent, such as a parent or teacher, engages in a task with a learner, providing as much mediation and as many forms of mediation as needed to support the learner's performance in the task (Feuerstein, Rand, Hoffman, & Miller, 1980). Mediation is not scripted and no quantitative score is calculated. Instead, after each MLE, the mediator drafts a profile that describes the learner's current cognitive functioning and responsiveness to mediation.

Within existing L2 acquisition research, the *interactionist* approach to DA is the most commonly used approach. Poehner (2005) worked with university students in dyads to dynamically assess their ability to use the *imparfait* and *passé composé* in French when narrating a movie using the past tense. His approach included a non-dynamic and dynamic pretest, an L2 enrichment program, and a non-dynamic and dynamic posttest. He also included two dynamic transfer tasks. Flexible mediation occurred in the form of dialogue between the mediator and the student to construct a ZPD during the administration of the assessment. Results of these assessments were DA profiles that documented learner difficulties and ways in which these difficulties were resolved with mediation (Poehner, 2005). Antón (2009) used an *interactionist* format of DA to diagnose language abilities for course placement purposes at the university level. A non-dynamic entry exam was followed by a mediated learning experience, during which the mediator offered flexible assistance tailored to the ZPD of the learner. The mediated learning experience consisted of a dynamic writing assessment and a dynamic speaking assessment. Antón (2009) argued that the dynamic procedure improved placement decisions by allowing her to better differentiate among students who had performed similarly on the non-dynamic entry exam. Building upon the work of Poehner (2005) and Antón (2009), Ableeva (2010) implemented a similar approach to *interactionist* DA that targeted listening comprehension with

intermediate level university students of French. She first conducted a pretest stage that consisted of a non-dynamic assessment, a dynamic assessment, and a transfer session. An enrichment program occurred after the pretest stage and targeted areas of weakness determined by the pretests. The enrichment phase was followed by a posttest stage that mimicked the format of the pretest stage. In turn, the posttest stage was followed by a far transfer task and a very far transfer task. In each of these three studies, mediation was flexible and highly attuned to the ZPD of the learner. While Ableeva (2010) calculated numerical scores for the non-dynamic assessments, she used qualitative data analysis to write a learner profile for each participant summarizing the results of the dynamic assessments.

In summary, a key component of each of the DA studies described here, and an important distinction from the IC framework, is the dual emphasis on instruction and assessment. A numerical score is calculated in *interventionist* approaches to DA while a learner profile is commonly composed in *interactionist* approaches. Although *interactionist* approaches use flexible mediation, Poehner (2005), Antón (2009), and Ableeva (2010) were able to use learner profiles to qualitatively compare language abilities among participants. This was possible because the dynamic assessments took place in dyads with one mediator and one student. This form of DA administration in dyads is time-consuming, limiting the number of participants with whom a mediator can work.

2 *Forms of mediation in ICs*

Within the IC framework, mediation can also take a variety of different forms, all of which are provided through dialogue between the teacher and learners. Tharp and Gallimore (1991) outline

seven functions that mediation can serve during an IC. These functions are presented in Table 1 and include modeling, feeding back, contingency managing, directing, questioning, explaining, and task structuring.

[Insert Table 1]

Goldenberg (1991) writes that an IC might appear “as ‘simply’ an excellent discussion conducted by a teacher and a group of students” (p. 5). Each statement by the teacher builds upon or challenges the previous statement and equal participation is expected among participants. The teacher instructs when necessary, maintains the interest of students, and integrates all contributions into the conversation. Goldenberg (1991) lists the instructional and conversational elements of an IC. The instructional elements include a strong thematic focus, the activation and use of background and schema, direct teaching, promotion of more complex language by students, and the promotion of bases for statements. The conversational elements include few ‘known answer’ questions, responsiveness to student contributions, connected discourse, a challenging but non-threatening atmosphere, and general participation.

In many ways, the methods of mediation described by Tharp and Gallimore (1991) and Goldenberg (1991) are the same as methods of mediation used in *interactionist* DA. In each framework, a teacher provides flexible mediation through discourse in response to contributions by students. Knowledge and meaning are co-constructed between the teacher and learner to promote development. This similarity in forms of mediation suggests that ICs could be used to accomplish the instructional goals of *interactionist* DA. To further distinguish these two frameworks, one must consider the individual assessment component present in DA. The

following sub-section will review research on DA and the IC that has taken place within the classroom context.

3 *DA and ICs in the L2 classroom context*

While ICs are most often situated within the classroom context (Echevarria & McDonough, 1995; Goldenberg, 1991; Goldenberg & Patthey-Chavez, 1995; Saunders & Goldenberg, 1999; van Compernelle & Williams, 2012), few studies within L2 acquisition have examined DA in the classroom context. Poehner (2009) conceptualized two possible formats of group DA implementation which he referred to as the *cumulative* and *concurrent* approaches. Within the *cumulative* approach, a teacher directs all mediation to the same student. Poehner (2009) used the work of Lantolf and Poehner (2011a) to illustrate this approach. These two researchers examined a teacher's use of pre-scripted prompts with students studying noun/adjective agreement in a Spanish as a foreign language classroom. In this approach to DA, the teacher engaged individuals in dialogue within the whole class configuration. During daily instruction, when a student made an oral error, the teacher provided pre-scripted prompts one-by-one, contingent upon the student's response, until the student was able to formulate the response correctly. Poehner (2009) distinguished between primary interactants—those speaking directly to the teacher, and secondary interactants—those listening in the background. Although the secondary interactants were not engaged in dialogue with the teacher during each interaction, they acted as peripheral participants. As Poehner (2009) stated, “because the exchange occurs in the social space of the class and before the other group members, it has mediating potential for the rest of

the group as well” (p. 477). Therefore, it was possible that the co-construction of a ZPD with an individual pushed the development of the group of students forward (Poehner, 2009).

The second approach that Poehner (2009) suggests for classroom DA, the *concurrent* approach, is more similar to the IC. Poehner (2009) drew upon the work of Gibbons (2003) to illustrate the *concurrent* approach. In this approach, a teacher opens dialogue to all students instead of directing all mediation to a single student. When an individual gives an incorrect answer, the teacher provides mediation and calls upon a different student to reformulate the answer, thereby creating a group ZPD. While Poehner (2009) draws upon Gibbons (2003) to illustrate the *concurrent* approach to group DA, he notes that Gibbons “does not refer to DA but understands the exchanges as teaching-focused interactions that take account of the ZPD” (p. 480). Theoretically, the difference between *concurrent* DA and the IC lies in assessment. The goal of DA is twofold: to promote development and to assess an individual’s ability to profit from mediation. Because the *concurrent* approach directly engages multiple students in each interaction, the teacher’s ability to assess an individual is limited to one student response. In practice, no empirical evidence exists to illustrate the difference between *concurrent* DA and the IC. In the present study, the teacher’s use of flexible mediation to create a group ZPD with no attempt at individual assessment will be described as an IC. The IC framework has been explored by van Compernelle and Williams (2012) within the L2 classroom setting.

Van Compernelle and Williams (2012) examined how the IC framework could be implemented to promote awareness and understanding of sociolinguistic variation in French in a university classroom. Within the whole-class discussion format, the instructor collaboratively dialogued with students to assess learners’ actual developmental level and to discover their ZPD. He led the class discussion using the IC framework by providing “the least explicit assistance

needed to guide the class to full participation and to encourage learners to assume increasing responsibility for the task” (van Compernelle & Williams, 2012, p. 45). The collaborative dialogue that occurred within the group ZPD provided opportunities for students to test hypotheses and co-create knowledge. Through this dialogue, the instructor created a ZPD within which students could develop sociolinguistic competence. While the instructor did engage in some form of assessment to create a group ZPD, the IC framework was not used to track the development of individuals.

III Current study

The present study is part of a larger research program examining dynamic assessment in a combined 4th and 5th grade elementary school Spanish foreign language classroom. The classroom was part of a laboratory school associated with a large research university that frequently participated in teacher training and educational research. The mediator in the present study was a second year Spanish teacher, hereafter referred to as Ms. Ryan (a pseudonym). In Ms. Ryan’s classroom, all 17 students were Novice level learners of Spanish (American Council on the Teaching of Foreign Languages, 2012) and ranged in age from 10 to 12 years old.¹ In the 4th and 5th grade Spanish curriculum, Ms. Ryan began to introduce grammar more explicitly as a way to support communication in preparation for the middle school (grades 6-8) Spanish program (Curtain & Dahlberg, 2010). The semester during which the study was undertaken included a unit on Argentina. As the culmination of the unit, Ms. Ryan invited an Argentinean international student to the class to engage students in an interview. To prepare for the visit, she

planned a 150 minute (ten 15 minute class periods) unit of study on WH-question formation, referred to as the questioning unit.

Initially, the researcher and Ms. Ryan decided that the *cumulative interventionist* approach to DA was most suitable for this context. During a pre-study interview, Ms. Ryan indicated a preference for this pre-scripted format of DA to meet her assessment needs. Because Spanish was the only foreign language offered at this school, Ms. Ryan was responsible for teaching approximately 200 students each day in grades kindergarten-through-fifth-grade (K-5). She provided 15 minutes of daily instruction in each class of approximately 20 students. Despite these brief class periods, Ms. Ryan was tasked with assessing the progress of all 200 students. She indicated that the *interventionist* approach to DA appealed to her as a way to more systematically track student progress.

In three meetings that lasted approximately one hour each, the researcher trained Ms. Ryan in *cumulative interventionist* DA, namely the delivery of hierarchical, pre-scripted mediation prompts (Budoff, 1987; Campione et al., 1984; Carlson & Weidl, 1992; Guthke, 1992; Kozulin & Garb, 2002) modeled after those used by the teacher described in the work of Lantolf and Poehner (2011a). Whenever a student incorrectly formed a question in the classroom setting, Ms. Ryan utilized the menu of prompts in Table 2.

[Insert Table 2]

As shown in Table 2, the graduated prompts became more and more explicit until the student formulated the response correctly. Within this *cumulative* format of DA, each interaction took place between the teacher and an individual student, although other students in the class

were potentially actively listening to, and benefitting from, the exchange (Poehner, 2009). After providing each prompt, Ms. Ryan gave the student an opportunity to correct the error. She then offered additional prompts, followed by a pause, until the student corrected the error. Ms. Ryan maintained a daily mediation record in which she tracked the progress of each student to whom she provided mediation (See Table 4 for an example). This record listed each student's name and had columns under which Ms. Ryan could record the number of mediation prompts required by the student and the source of the student's error (i.e. vocabulary word, word order, etc.).

In the current study, mediation was provided during daily instruction throughout the questioning unit. Similar to the procedures of Feuerstein and colleagues (1980, 2003) and Budoff (1987), the mediation phase was *sandwiched* between a non-dynamic pre- and posttest (Budoff, 1987), as displayed in Table 3.

[Insert Table 3]

The posttest was followed by a near transfer task and a far transfer task (Ableeva, 2010; Campione et al., 1984; Poehner, 2005) that served to determine whether students could extend their knowledge of WH-question formation to novel contexts. Although pretest, posttest, and near and far transfer tasks were included as part of the larger study, this article focuses on how DA was used during the mediation phase to guide instruction and assessment. Instead of comparing pretest scores to posttest or transfer task scores to calculate development, the intent here is to examine how Ms. Ryan provided mediation to negotiate the dual goals of instruction and assessment in the classroom setting.

Data sources in the present study consisted of interview transcriptions, audio-recordings, field notes, and the teacher's mediation records. The researcher interviewed Ms. Ryan before the questioning unit began and after the unit ended. She also conducted quick interviews that lasted approximately 10 minutes with Ms. Ryan after each class during the questioning unit. Each class meeting was audio-recorded and transcribed (using pseudonyms). These transcripts were compared to Ms. Ryan's mediation record and the field notes taken during daily observations by the researcher. Within the transcripts, each interaction series between the teacher and a student was highlighted. The term interaction series refers to the dialogue that unfolded after each student error or inquiry posed to the teacher. In the initial coding phase, all interaction series in which *interventionist* DA was used were counted, classified according to the type of error made by the student, and coded for the five pre-scripted mediation prompts. In a secondary coding phase, all interaction series in which ICs occurred were counted. These series were classified according to the type of error made or type of inquiry posed, and an open coding system was used to examine patterns in the data. The following section discusses the patterns that emerged from each round of coding.

IV Data analysis

Transcript analyses revealed 29 interaction series during the mediation phase of the questioning unit. Eleven of these series consisted of questions formed correctly without mediation. In the remaining 18 series, the teacher utilized the pre-scripted prompts for 13 interactions. These 13 interactions took place between Ms. Ryan and individual students in the whole group setting following the *cumulative* approach to classroom DA (Poehner, 2009). The format of the

remaining five interaction series followed the IC framework and varied significantly from the *cumulative* approach to DA in that mediation was flexible and was directed toward all students. The data analyses presented below explore the use and strengths of *cumulative interventionist* DA and the IC.

1 *Use of cumulative interventionist DA*

Analysis of the 13 interaction series in which the pre-scripted prompts were used revealed their utility for mediating predictable lexical and grammatical errors. Three excerpts are presented here to illustrate the three most common types of errors for which the mediation prompts were used. The most common error (six out of 13 errors) in WH-question formation dealt with vocabulary choice. Because the vocabulary for WH-question words was new information for students, Ms. Ryan anticipated student errors in this domain. Excerpt 1 shows an example of an interaction in which a student used an incorrect question word. An asterisk is used to identify the site of the error that the teacher is mediating.

Excerpt 1

1. Annie: ¿**Qué es tu cantante favorita?*
*What is your favorite singer?²
2. Ms. Ryan: (pause with questioning look) **(Prompt 1)**
3. Annie: (silence)
4. Ms. Ryan: ¿**Qué es tu cantante favorita?* **(Prompt 2)**
*What is your favorite singer?

5. Annie: *Oh!, ¿Quién es tu cantante favorita?*

Who is your favorite singer?

In this exchange, the student begins the interaction with an incorrect question word, *qué* ‘what’. Ms. Ryan offers the first prompt by pausing, to which the student remains silent. The student’s silence indicates to Ms. Ryan that a more explicit prompt is required. Ms. Ryan moves to the second prompt, and repeats the student’s entire question with emphasis on the word *qué*. This prompt is sufficient for the student to 1) locate the error, and 2) correct the error by changing *qué* ‘what’ to *quién* ‘who’. In this interaction series, the pre-scripted prompts permitted Ms. Ryan to provide appropriate mediation to the student while simultaneously assessing the quality and quantity of mediation that was required. Because Annie only required two prompts to correctly form this question, Ms. Ryan recorded the number 2 on her chart and specified that the misunderstanding centered upon the question word.

The second most common error during the questioning unit dealt with word order. Of the 13 interaction series in which the pre-scripted prompts were used, five resulted from student errors with word order. Excerpt 2 illustrates an example of how the pre-scripted prompts functioned to mediate these types of errors.

Excerpt 2

6. Alex: *¿Qué es tu *favorito equipo de fútbol?*³

What is your *favorite soccer team?

7. Ms. Ryan: (pause with questioning look) **(Prompt 1)**
 8. Alex: (silence)

9. Ms. Ryan: *¿Qué es tu *favorito equipo de fútbol?* **(Prompt 2)**

What is your *favorite soccer team?

10. Alex.: **Fútbol equipo*

*soccer team...

11. Ms. Ryan: **¿favorito equipo?* **(Prompt 3)**

*team favorite?

12. Alex: *sí, *favorito equipo*

yes, *team favorite

13. Ms. Ryan: *¿Qué es tu *‘favorito equipo’ o ‘equipo favorito’?* **(Prompt 4)**

What is your *team favorite or favorite team?

14. Alex: *¿equipo favorito?*

favorite team

15. Ms. Ryan: *uh-huh. ¿Por qué? Why?*

16. Alex: *umm*

17. Ms. Ryan: *¿Qué es tu equipo favorito? Alex, ¿por qué es ‘equipo favorito’ y no es *‘favorito equipo’?*

What is your favorite team? Alex, why is it ‘favorite team’ instead of ‘team favorite’?

18. Alex: (silence)

19. Ms. Ryan: *como dije... porque the adjective a lot of times will come after the noun. Umm
hmm.*

As I said...because

In Excerpt 2, Alex required four prompts to correctly place the adjective after the noun in his question. In Turn 6, he suggests that the class ask the visitor about her favorite soccer team. He incorrectly places the adjective *favorito* ‘favorite’ in front of the word *equipo* ‘team’. Ms. Ryan provides Prompt 1, a short pause to indicate an error. Alex remains silent, signaling to Ms. Ryan that he is unaware of the error and requires more explicit mediation. Ms. Ryan then provides Prompt 2 by repeating Alex’s entire question, with stress on the phrase **favorito equipo*. Alex’s decision to switch the order of the words *team* and *soccer* in Turn 10 reveals that he is still unaware of the location of the error and that he requires more explicit mediation. Therefore, Ms. Ryan provides the third prompt, repeating only **favorito equipo*, which indicates the location of the error. Again, Alex confirms his utterance by saying “yes, **favorito equipo*” signaling that he needs the next prompt. After the fourth mediation prompt (an either/or option) is provided, Alex corrects his error, realizing that the word order must be *equipo favorito* due to the teacher’s narrowing of the scope of the task and rather explicit highlighting of the specific locus of trouble. Because the goal of DA is “not simply to help learners master a specific task but to help them develop a principled understanding of the object of study” (Poehner & Lantolf, 2005, p. 257), Ms. Ryan asks Alex to explain why *favorito* should come after *equipo*. This new information seemingly conflicts with Alex’s previous understanding of noun/adjective placement and he is unable to explain the grammar rule. Ms. Ryan provides a brief explanation and records a 4 on her observation protocol, also indicating that the error was due to syntax. The 4 serves as a record that Alex required very explicit mediation on word order and that he might need more mediation than a student who, for example, required only two prompts.

The third most common error dealt with errors concerning word omission. On two occasions, students omitted necessary modifiers such as possessive pronouns or articles. Because

each of these grammatical points had been taught earlier in the year, Ms. Ryan provided mediation for these omissions. Excerpt 3 illustrates one example.

Excerpt 3

20. Mark: *¿Qué es *capital de Argentina?*

What is *capital of Argentina?

21. Ms. Ryan: (pause with questioning look) **(Prompt 1)**

22. Mark: (silence)

23. Ms. Ryan: *¿Qué es *capital de Argentina?* **(Prompt 2)**

What is *capital of Argentina?

24. Mark: *¿Qué es *capital...*

What is *capital?

25. Ms. Ryan: *¿Qué es *capital?* **(Prompt 3)**

What is *capital?

26. Mark: *¿Qué es *tu capital?*

What is *your capital?

27. Ms. Ryan: *¿*el o la?* **(Prompt 4)**

*the (masculine) or the (feminine)?

28. Mark: *uhhh, la*

29. Ms. Ryan: *la, sí, porque queremos decir 'the capital', ¿Qué es la capital? Muy bien.*

Excelente.

la, yes, because we want to say 'the capital', What is the capital? Very good. Excellent.

In Turn 20, Mark attempts to ask about the capital of Argentina. While his question is comprehensible, it is not grammatically accurate because it lacks a definite article. Prompts 1-3 do not serve as sufficient mediation for Mark to correct his error. After the first prompt in Turn 21, Mark remains silent indicating that he requires more explicit mediation. The second prompt is also not sufficiently explicit, although Mark responds by repeating the first three words of his question ¿*Qué es *capital?* ‘What is *capital?’, indicating that perhaps he has an idea of the location of his error. In response to the third prompt, Mark deduces that his question requires a modifier before the word *capital*. He inserts *tu* ‘your’, indicating that although he has identified the location and source of his error, he still requires a more explicit prompt. After Prompt 4, Mark correctly identifies *la* ‘the’ as the definite article required before *capital*. Ms. Ryan affirms this response and records a 4 on her observation protocol.

2 *Strengths of cumulative interventionist DA*

These three interaction series show how *cumulative interventionist DA* was utilized to mediate lexical and grammatical errors that were routine and predictable. There were two main advantages of using pre-scripted prompts within the classroom context. First, the pre-scripted prompts allowed Ms. Ryan to be highly systematic in her responses to student errors (Lantolf & Poehner, 2011a). By using the same five prompts to respond to student errors, Ms. Ryan could quickly respond to students with prompts that were graduated and contingent, necessary characteristics of mediation within the ZPD (Aljaafreh & Lantolf, 1994). In this regard, she was able to capitalize on each predictable lexical or grammatical error made by students to promote student understanding of WH-question formation.

The second advantage of the pre-scripted prompts was the ease with which they could be used for assessment. Student responses to the pre-scripted prompts provided a window into each individual's development of WH-question formation. After each *interventionist* DA interaction, Ms. Ryan documented the number of prompts required by a student, permitting her to track the individual's progress. For example, Table 4 illustrates the four questions formed aloud by one student during the questioning unit.

[Insert Table 4]

This table served as a record that Roxanne was silent during the first four days of the questioning unit. On Day 5, she formed her first question without error. She formed a second question on Day 5, which is crossed out because Ms. Ryan did not follow the pre-scripted prompts (explained in the following section). On Day 10, Roxanne asked the same question as on Day 5, but required two pre-scripted mediation prompts indicating the possibility of regression (Lantolf & Aljaafreh, 1995). On the same day, she also asked a second question for which she did not require mediation. These numbers served as important indicators of development through the ZPD. As Lantolf and Thorne (2006) state, the ZPD "is forward looking through its assertion that assisted performance, and importantly the varying qualities of assistance needed for a particular individual to perform particular competencies, is often indicative of independent functioning in the future" (p.263). Tracking students' transitions from reliance on explicit mediation to implicit mediation allowed the teacher to hypothesize how far along the student was toward autonomous performance.

3 *Use of the IC*

After the initial phase of coding, five of 18 interaction series remained that did not fit into the initial coding scheme. In these five interactions, Ms. Ryan had varied from the pre-scripted prompts and used the IC framework to guide interaction. Analyses revealed that each of these five interactions represented opportunities for Ms. Ryan to address language topics that she had not anticipated, but that were based on inquiries posed by students. Two excerpts are presented in this section to highlight the characteristics of these interactions. Excerpt 4 illustrates the dialogue represented in Table 4 for the second question asked by Roxanne on Day 5.

Excerpt 4

30. Roxanne: *¿Qué es ...how do you say weather?*

What is...

31. Ms. Ryan: (pauses) *¿Cómo se dice, qué es?* **(Prompt 1 and Prompt 2)**

How do you say, what is?

32. Roxanne: *Well, um, What is the weather like?*

33. Ms. Ryan: *Um hmm. Qué es, qué...¿Qué tiempo *es?* **(Prompt 3)**

What is, what...What the weather *is?

34. Roxanne: (silence)

35. Ms. Ryan: (pauses) *Clase, piensan en la canción, ¿Qué tiempo *es? ¿Qué ti-em-po...*

(students sing along to the tune)

Class, think about the song, What weather *is?

36. Hal: *hace*

37. Ms. Ryan: *¿Alguien sabe? ¿Qué tiempo *es? o ¿Qué tiempo hace?*

Does anyone know?. ‘What weather *is’ or ‘what is the weather like’?

38. Chorus of students: *¿Qué tiempo hace?*

(forms question correctly)

39. Ms. Ryan: *¿Qué tiempo hace? Sí, es una pregunta un poquito extraña. Parece que sería ‘¿Qué tiempo *es?’ pero es ‘¿Qué tiempo hace?’ Okay? What’s the weather like? ¿Más preguntas?*

What is the weather like? Yes, it is a bit of a strange question. It seems like it would be ‘¿Qué tiempo *es?’ but it is ‘¿Qué tiempo hace?’ What’s the weather like? More questions?

In these turns, Roxanne begins by asking *What is?* and then asks the teacher for the word for *weather*. Ms. Ryan pauses, later indicating to the researcher that the intention behind her pause was not to provide the first pre-scripted prompt, but rather to figure out how to answer this question with an implicit hint instead of by providing the answer. To give herself more time and to elicit more speech from Roxanne, she follows the pause by repeating Roxanne’s question. Roxanne translates her question to English in Turn 32. Ms. Ryan again attempts to provide implicit mediation, but provides both the vocabulary word *tiempo* ‘weather’ and information on word order. She places emphasis on the word *es* ‘is’ to indicate the location of the error. Roxanne remains silent, and Ms. Ryan pauses again to think about how she can provide mediation. In Turn 35, the transition to the IC framework occurs when Ms. Ryan directs her attention to the entire class and uses the modeling form of assistance described by Tharp and Gallimore (1991; See Table 1) to prompt students to think about a weather song that they know

in Spanish. She begins to sing the first line and the other students begin to sing along. At this point, another student, Hal, calls out the correct word, *hace* ('does' or 'make' when translated literally). Ms. Ryan uses the questioning form of assistance (Tharp & Gallimore, 1991) and again involves the entire class by asking them which is correct ¿*Qué tiempo *es?* or ¿*Qué tiempo hace?* The students respond in chorus with the correct phrase ¿*Qué tiempo hace?* 'What is the weather like?'.

A similar occurrence took place later during this same class session when a student raised his hand to ask about the translation of the auxiliary verb *do* in Spanish. Excerpt 5 shows how this interaction unfolded.

Excerpt 5

40. Ivan: *How do you say 'do'?*

41. Ms. Ryan: *recuerda de ayer, ¿Hay preguntas con 'do' en español? Recuerda ayer cuando dijimos '¿Cómo baila?' Chicos, ¿Qué significa 'cómo baila'? Sara?*

Remember yesterday, are there questions with 'do' in Spanish? Remember yesterday when we said, ¿*Cómo baila?* Children, what does ¿*Cómo baila?* mean?

42. Sara: *How*

43. Ms. Ryan: *How?*

44. Sara: *How do you dance?*

45. Ms. Ryan: *How do you dance? En español, ¿Hay una pregunta para 'do you'?*

In Spanish, is there a question for 'do you'?

46. Class: *no*

47. Ms. Ryan: *No, no hay una pregunta para 'do'. '¿Cómo baila?' significa 'how do you dance?', pero solo necesitamos 'como baila'...okay, Ivan?*

No, there is not a question for 'do'. '¿Cómo baila?' means 'how do you dance?', but we only need '¿cómo baila?'...okay, what else?

48. Ivan: *¿*Qué es *favorita baila?*

What is your favorite dance?

49. Ms. Ryan: (pause) Ah, **¿Qué es *favorita baila?*

Ah, **what is...*dance favorite*

50. Ivan: *baila favorita*

Favorite dance

In this excerpt, Ms. Ryan seizes an opportunity to lead students in an IC about the auxiliary verb *do*. The pre-scripted prompts are not suitable for this interaction, and she abandons them for flexible mediation. In his attempt to form a question about dancing in Argentina, Ivan realizes that he does not know how to say *how do you*, so he consults his teacher. Instead of providing an explicit explanation on this grammatical point, Ms. Ryan engages the whole class in the IC and leads the co-construction of the appropriate way to formulate this question. In Turn 41, she uses the questioning form of assistance (Tharp and Gallimore, 1991) to remind students of a question formed on the previous day. She shifts her attention to the entire class and asks them to translate the question *¿Cómo baila?* 'How do you dance?' Sara raises her hand and suggests that *cómo* means how. To encourage Sara to translate the entire question, Ms. Ryan repeats the word *how*. Sara responds by translating the question as *How do you dance?* Drawing upon this example, Ms. Ryan again looks to the whole class and asks them if the word *do* is

directly translated, to which the class responds in a chorus of “no”. Ms. Ryan concludes the IC in Turn 47 by using the explaining form of assistance (Tharp & Gallimore, 1991) to clarify that the auxiliary verb *do* is not its own separate word in Spanish. After this explanation and without recording any type of assessment data, Ms. Ryan transitions back to the *cumulative interventionist* format of DA. She returns her attention to Ivan so that he can form his question. Interestingly, Ivan does not ask a question that requires the auxiliary verb *do* in English and instead asks ¿**Qué es *baila favorita?* ‘What is favorite dance?’ In response, Ms. Ryan returns to her pre-scripted prompts, mediates the need for a possessive pronoun, and resumes using DA to meet her assessment needs.

4 *Strengths of the IC*

Excerpts 4 and 5 illustrate two of the five interaction series in which Ms. Ryan switched her response framework to an IC to better meet the needs of her students, thereby relinquishing her ability to track the progress of individuals. As Newman, Griffin, and Cole (1989) argue, a teacher must be prepared to provide appropriate forms of mediation when students shift instruction to unanticipated directions within the classroom. In the present study, the researcher and Ms. Ryan had not anticipated inquiries for which the pre-scripted prompts would be insufficient and had not discussed an alternative response framework. Had Ms. Ryan and the researcher planned for alternative approaches to dealing with student problems unrelated to the formation of WH-questions, it is likely that her initial transition from DA to the IC in Excerpt 4 would have gone more smoothly. Ms. Ryan initially struggled with the transition away from the pre-scripted prompts in Excerpt 4. Instead of responding without hesitation, she had to stop to

consider how she might provide implicit mediation. In Excerpt 5, which occurred later in the same class period, Ms. Ryan was able to respond more quickly and with less hesitation. In each of these cases, without prompting from the researcher, Ms. Ryan realized that *interventionist* DA would not serve to create an individual ZPD, and she seized the opportunity to create a group ZPD through an IC. By doing this, Ms. Ryan intentionally placed the instructional needs of her students above her own assessment goals. Figure 1 outlines the internal process that the mediator described to the researcher.

[Insert Figure 1]

V Conclusions

Findings in the present study provide evidence of the compatibility of *interventionist* DA and the IC within the classroom setting. These two frameworks can work symbiotically to meet the students' and teacher's needs. Pre-scripted prompts characteristic of *interventionist* DA can be utilized to construct individual ZPDs that mediate routine lexical and grammatical errors that are anticipated in advance of classroom teaching. The value of using this form of mediation lies in the ease with which it allows the teacher to track student progress through the use of the systematized feedback responses (Budoff, 1987; Campione & Brown, 1987; Carlson & Wiedl, 1992; Guthke, 1992). A byproduct of constructing individual ZPDs in the whole group setting is that the passive participants also benefit from the mediation. However, if the mediator judges that the group will benefit from this mediation and that there is an opportunity to promote the

development of the class as a whole, a teacher can utilize the IC framework to construct a group ZPD, inviting all students to participate in the discussion.

When organizing classroom instruction and assessment, a teacher might consider using the IC framework to introduce new concepts and the DA framework for material that has already been covered. The present study illustrates how the IC was conducted to engage students in dialogue about lexical and grammatical concepts that had not yet been studied. Linguistic concepts that are unfamiliar to students often require more flexible mediation. A teacher might employ a variety of the forms of assistance presented by Tharp and Gallimore (1991) based on students' needs. This flexible mediation framework typical of the IC emphasizes instructional goals rather than the assessment of individuals (Gibbons, 2003; Goldenberg, 1991; Tharp & Gallimore, 1991; van Compernelle & Williams, 2012). By constructing a conversation with a group of students and offering flexible mediation, instructional needs are emphasized over assessment needs.

This study contributes to a deeper understanding of the use of Vygotsky's ZPD construct to guide interaction within the classroom context. Findings revealed that the DA and IC frameworks can be used in conjunction to construct individual and group ZPDs within the classroom that push the development of all students forward. In the present study, the integration of these two mediation frameworks emerged naturally from teacher-student interactions. The teacher in the study had not received any instruction or been given any direction on how to implement an IC in her classroom. As such, the teacher's use of this framework evidences the complementary nature of the IC, which filled a void left behind by *interventionist* DA. The integration of these two frameworks has important implications for all classroom teachers, independent of content area or level of instruction, as they can be implemented in a highly

strategic manner depending on the need of the instructor to either introduce new concepts or provide additional instruction on content previously covered.

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Notes

- 1 Students' proficiency levels were determined by an Integrated Performance Assessment (IPA) conducted in the spring of 2010.
- 2 In transcript excerpts, words in italics are those utterances from Ms. Ryan or the students. Words in regular typeface beneath are English translations of Spanish provided by the author.
- 3 The phrase *¿Qué es?* used in both Excerpts 2 and 3 is not grammatically correct and should be *¿Cuál es?*. In these two excerpts, this error was not mediated by Ms. Ryan.

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Table 1. Forms of assistance in ICs (see Tharp & Gallimore, 1991)

Form of Assistance	Action by Teacher
Modeling	Offers image for learner to imitate
Feeding back	Compares learner output to standard
Contingency managing	Provides reinforcement and punishment
Directing	Specifies correct response
Questioning	Shifts learner attention to new considerations
Explaining	Provides necessary information for understanding
Task structuring	Sequences or chunks task into component parts

Table 2. Mediation prompts provided by Ms. Ryan

Level of Explicitness	Mediation Prompt
Prompt 1	Pause with questioning look
Prompt 2	Repetition of entire phrase by teacher with emphasis on source of error
Prompt 3	Repetition of specific site of error
Prompt 4	Forced choice option (i.e. <i>¿qué?</i> or <i>¿quién?</i>)
Prompt 5	Correct response and explanation provided

Table 3. Component parts of questioning unit

Non-Dynamic Pretest		
Days 1 - 2	Whole Group Configuration	Introduction to WH- words
Days 3 - 6	Whole Group Configuration	Classroom DA used as students formulate questions aloud
Days 7 - 9	Students in Groups of Three	Students brainstorm and make lists of questions for visitor
Day 10	Whole Group Configuration	Classroom DA used while students share questions formed during small group work
Non-Dynamic Posttest		
Non-Dynamic Near Transfer Task		
Non-Dynamic Far Transfer Task		

Table 4. Questions formed by Roxanne

Day of Questioning Unit	Number of Prompts Required/Source of Error	Answer Given
Day 5	0	<i>¿Quién es tu cantante favorita?</i> 'Who is your favorite singer?'
Day 5	Group — 'do'	<i>¿Qué tiempo hace?</i>
Day 10	2 – Question Word (QW)	<i>¿*Qué es tu cantante favorita?</i> 'What is your favorite singer?'
Day 10	0	<i>¿Dónde vives?</i>

		'Where do you live?'	
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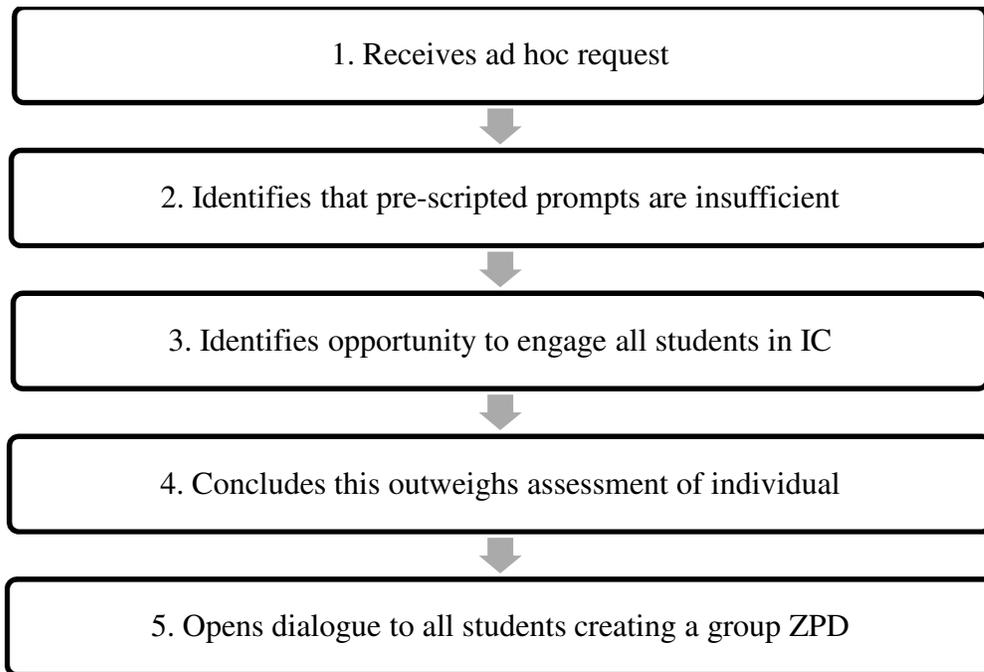


Figure 1. Process to shift from DA to IC