

INSTRUCTIONAL CONVERSATIONS WITH PRESCHOOL CHILDREN

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Dedication

To my grandmother, Margaret Roelofs

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ABSTRACT

Although challenging to enact well, conversations between preschool educators and small groups of children have been found to facilitate language development and cognitive growth. This study investigated behaviors that preschool teachers used to promote children's participation in a strategy called "Instructional Conversation," reciprocal discussions between a teacher and small group of children that are centered on a learning goal. The study also investigated the relationship between outcome measures of children's expressive and receptive English vocabulary and their teachers' enactment of Instructional Conversation. Nine educators were video recorded while conducting an Instructional Conversation with children, ages 2-5, in their preschool classrooms. Educators in the video recordings were also interviewed to gain their perspective on how they encouraged the children to engage in the conversations. Two analyses of covariance (ANCOVA) were conducted using teachers' level of enactment of IC, gender and children's status as a dual language learner as independent variables, and children's receptive and expressive vocabulary and age as covariates. The findings from the ANCOVA analyses indicated a relationship between dual language learners' and girls' language development and teachers' high enactment of IC. Using discourse analysis, the video recordings of the highest scoring Instructional Conversations were also analyzed for patterns of teacher actions that promoted child participation, and the interview transcripts were analyzed using other qualitative analytic methods. These analyses suggested that the teachers promoted children's participation by (a) creating a context, or environmental conditions to promote conversation, (b) responsiveness, (c) using multimodal resources, and (d) questioning.

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CHAPTER 1

INTRODUCTION

Rationale for the Study

Dialog between teachers and small groups of children have been shown to facilitate children's language development (Estrada, 2005; Hilberg, Doherty, Epaloose, Tharp, 2004; Padron & Waxman, 1999). Research indicates that such dialogue is especially helpful for bilingual or second-language learners (Institute of Educational Sciences, 2006; Rymes, 2003; Saunders & Goldenberg, 2007). Yet, successfully engaging children in conversations with high levels of participation can be challenging for teachers (Yamauchi, Im, & Schonleber, 2012; Saunders & Goldenberg, 2007). Furthermore, the literature on early childhood education (preschool to third grade) indicates that conversation is an underutilized teaching strategy (Massey, 2003; Miller, 2010; Justice, Mashburn, Hamre, & Pianta, 2008). Calls have been made by early childhood researchers to further examine child-teacher interactions using observational data and ultimately design professional development on effective strategies to promote such interactions (Justice et al., 2008; Scott-Little et al., 2011).

Households in the United States that use a language other than English increased 148 percent between 1980 and 2009 (Ortman & Shin, 2011). As a result, preschools around the nation have seen an increase in the population of young dual language learners (DLLs), or children who are learning multiple languages at the same time (Division for Early Childhood, 2010). Furthermore, it is predicted that the population of young DLLs will continue to increase dramatically over the next 20 years (Cochran, 2007). To effectively educate this growing population of children, there is a need for research that

focuses on understanding how to engage young DLLs in dialog and promote their language acquisition. A research focus on language acquisition in the preschool context is especially important because of the unique developmental characteristics of preschool children and because research shows oral language development serves as a foundation of success in reading and writing (Justice et al., 2008; Scott-Little et al., 2011). This study focused on teachers conversing with preschool DLLs because of the increasing population of DLLs in preschools and evidence that teachers can facilitate their language development by engaging them in conversation (Institute of Educational Sciences, 2006; Rymes, 2003; Saunders & Goldenberg, 2007).

Literature on classroom discourse (de Rivera, Girolametto, Greenberg, & Weitzman, 2005; Yamauchi, et al., 2012) suggests that a reason teachers do not use conversation with children could be due to a lack of teacher preparation regarding effective strategies to engage children in such conversations. Collecting evidence on effective strategies to engage children in conversation that eventually could be used to prepare teachers to promote conversations with children is important because, as previously stated, children's participation in conversations is beneficial to their development. As Bodrova and Leong (2007) write, "The teacher must keep in mind that children must participate in the dialogue for it to teach them anything, because they must construct their own meaning" (p. 85). Therefore, the current study investigated strategies effective teachers use to engage preschool children, especially DLLs, in conversations.

Theoretical Perspective

Sociocultural Theory. Social interactions between teachers and small groups of young children were the principal unit of analysis for this research because it was based on Vygotsky's (1978) sociocultural theory. According to this theory, social interactions promote learning and development. Vygotsky writes, "All the higher functions originate as actual relations between human individuals" (p. 57). Higher functions include voluntary attention, logical memory, and concept formation. Therefore, according to Vygotsky, learning first takes place on the social level, such as during an engaging conversation. After the child has social experiences, the learning is internalized. A key component of sociocultural theory is that language is a tool used during social experiences to share and expand thinking, and ultimately promote development (Mercer, 1995). Lightbrown and Spada (2006) write, "Vygotsky's theory assumes that cognitive development, including language development, arises as a result of social interactions" (p. 45). Thus, the perspective that informed my research was that engaging young children in conversations promotes social interaction that ultimately facilitates learning and development. Promoting interaction is an important educational strategy. Researchers have found the sociocultural perspective to be a useful framework to explore language acquisition (Lantolf, 2000; Ohta, 2000; Tocalli-Beller & Swain, 2007). It provides a theoretical link between children's active participation in conversations with their cognitive growth and language development.

Researchers working from a sociocultural perspective have inquired into the educational value of interactions among students in small groups participating in an activity (Rueda, Goldenberg, & Gallimore, 1992; Vygotsky, 1978). Vygotsky

emphasizes the educational importance of a child's active participation in an interaction when he writes, "Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (p. 90). Therefore, studying interaction has been an important part of sociocultural research. For example, researchers have studied interaction patterns during classroom discourse (Cazden, 1988, 2005; Erickson, 1982, 1996). In addition, sociocultural researchers have analyzed discourse of mothers and teachers interacting with young children and identified significant examples of adults mediating learning and child appropriation of language and cognitive skills (Wertsch, 1991). These studies indicate that a sociocultural theoretical perspective provides a strong foundation to analyze adult-child interactions in preschool classrooms to better understand strategies that encourage participation and ultimately language and conceptual development.

Instructional conversations. Vygotsky's sociocultural theory is the foundation for a pedagogical strategy called, "Instructional Conversation" or IC, which I refer to throughout this paper (Tharp & Gallimore, 1988). Tharp and Gallimore developed the term with specific criteria, building upon Vygotsky's concepts related to the importance of conversing with learners to promote their thinking. The criteria assist classroom observers, researchers and teachers to apply concepts from sociocultural theory to classrooms (Wells & Haneda, 2005).

Originally, IC was developed for use in K-12 classrooms; however, it was subsequently adapted for use in early childhood settings (Yamauchi et al., 2012). This paper uses the early childhood definition of ICs (Yamauchi et al., 2012). ICs in early

childhood include verbal and non-verbal communication between teachers and small groups of children that focus on a learning goal. Throughout an IC, a teacher assesses and assists the children's understandings while guiding them to become aware of, and express, their views, judgments and rationales. Fully enacted ICs have a balanced participation structure such that the teacher and children verbally and non-verbally contribute at equal rates (Yamauchi et al., 2012). Table 1 presents an observational rubric for scoring ICs.

Table 1
Criteria for Measuring Instructional Conversations in Early Childhood

Level of use	Criteria
Not observed (0)	Not observed
Emerging (1)	The teacher converses with a child or the whole class AND uses questioning, listening, or rephrasing to elicit communication.
Developing (2)	The teacher converses with a small group of children AND uses questioning, listening, or rephrasing to elicit communication.
Advancing (3)	The teacher designs and enacts an instructional conversation (IC) with a small group of children with a clear learning goal AND elicits communication with questioning, listening, rephrasing, or modeling.
Enacting (4)	The teacher designs and enacts an instructional conversation (IC) with a small group of children on a clear learning goal. The teacher listens carefully to assess and assist understanding toward the goal. The verbal and non-verbal communication ratio of teacher-child turn-taking is approx. 1 to 1.
Exemplary (5)	The teacher designs and enacts an instructional conversation (IC) with a clear learning goal; listens carefully to assess and assist understanding toward the goal AND questions children on their views, judgments or rationales in reaching the goal. The verbal and non-verbal communication ratio of teacher-child turn-taking is approx. 1 to 1.

Preschool teachers who learned to use ICs suggested that it is difficult to promote young children's participation in conversations, particularly with the children expressing their views, judgments and rationales (Yamauchi et al., 2012). Therefore, this dissertation analyzed strategies to promote young children's participation in conversations used by teachers identified as being effective at ICs.

Research Questions

This research addressed the following four questions:

1. What strategies do effective teachers use to engage preschool aged children in ICs and how do the children respond?
2. How do preschool teachers use these strategies to engage children who are learning dual languages?
3. How do these dual language learners respond?
4. Is there a relationship between preschool teachers' use of IC in their classroom and students' language achievement as measured by the Peabody Picture Vocabulary Test, 4th Edition (PPVT-4; Dunn & Dunn, 2007) and the Expressive Vocabulary Test, 2nd Edition (EVT-2; Williams, 2007)?

The results of this research add to the literature on effective ICs with preschool aged children, especially when working with DLLs. It also adds to the literature on discourse strategies to engage learners, especially DLLs. My objective was to build on the work of Tharp and Gallimore (1998) and Yamauchi et al. (2012) to deepen our understanding of ICs in preschool by analyzing highly effective educators and identifying actions they used to promote child participation.

Overview of the Study

The following chapter provides a review of the literature that informed this study. It is organized around five areas: a) CREDE research on ICs; b) adult-child interactions and child language acquisition; c) nature of “effective” conversations between adult and young children; d) K-12 classroom discourse and student participation; e) approaches to studying discourse.

The literature review provided background information that shaped my methodology, which is outlined in Chapter 3. In this chapter, I provide a description of my data sources, the setting, participants and instruments used to address my research questions. I outline the procedures I used for analyzing the data and address my role as a researcher. Lastly, I describe the strategies used to promote the trustworthiness of the results.

Chapter 4 is a summary of the results. I provide the discourse analysis of strategies that promoted preschool children’s participation in ICs, particularly with DLLs. I also provide the results exploring the relationship between teachers’ use of IC and children’s English vocabulary acquisition as measured by the PPVT-4 and EVT-2.

My final chapter is a discussion of the results. I relate my findings back to the literature and highlight possible contributions of this project to ICs in early childhood, particularly with DLLs. I outline possible limitations of this dissertation and propose further research related to ICs with preschool children.

CHAPTER 2

REVIEW OF LITERATURE

The Center for Research on Education, Diversity, and Excellence

This dissertation builds on previous work conducted by the Center for Research on Education, Diversity, and Excellence (CREDE) in early childhood settings (preschool to third grade) (Goh, Yamauchi, & Ratliffe, 2012; Yamauchi, Im, & Mark, 2013; Yamauchi et al., 2012). The CREDE researchers and study the Standards for Effective Pedagogy, which are rooted in the Vygotskian sociocultural perspective that learners construct their higher psychological functions through social interactions (Tharp, Estrada, Dalton & Yamauchi, 2000). The standards originated from the seminal Kamehameha Early Education Project (KEEP) (Tharp & Gallimore, 1998) and are designed to assist teachers to better meet the needs of linguistically and culturally diverse learners (Tharp et al., 2000). Research supports the CREDE Standards' effectiveness at improving outcomes for learners (Doherty, Hilberg, Pinal, & Tharp, 2003; Estrada, 2004; Hilberg, Tharp, & DeGeest, 2000; Saunders & Goldenberg, 2007). CREDE research has shown that Instructional Conversations (ICs), the focus this study, have positive outcomes for students' language development (Estrada, 2005; Hilberg et al., 2004), especially for English language learners or dual language learners (Institute of Educational Sciences, 2006; Saunders & Goldenberg, 2007).

In 2006, the CREDE Hawai'i project began a partnership with teachers and administrators at the University of Hawai'i at Mānoa Children's Center to study, adapt and apply the CREDE Standards for Effective Pedagogy for use in early childhood settings. Yamauchi, Im, and Schonleber (2012) present research from the first three years

of the collaboration using participant observations and video recordings as data sources. As a result of the research between the Children's Center and CREDE Hawai'i, the criteria used for the K-12 CREDE Standards were adapted to be more developmentally appropriate for early childhood.

One example of an adjustment to the CREDE criteria relates to expectations of child-child collaboration. The researchers and teachers from the Children's Center found that child-child collaboration does not happen as easily with young children as with older children. Yamauchi et al. (2012) found that young children often use an adult to mediate their group collaboration towards a joint product. Therefore, the adjusted early childhood criteria for the CREDE Standards emphasize the role of an adult to assist collaboration between peers. Another way the Standards were adjusted to be more developmentally appropriate was to include non-verbal forms of communication, not just speech, in the criteria related to participation. Lastly, as a result of reviewing the data, the researchers and teachers decided to broaden the Standards to include social and self-management goals, not just academic goals. Yamauchi et. al write that the results of their study suggest that the CREDE model is appropriate for early childhood. More research is needed, however, on the extent ICs are used in preschool and how children's and teacher's background characteristics affect the use of IC.

Goh, Yamauchi, and Ratliffe (2012) findings also come from the collaborative research between CREDE Hawai'i and the University of Hawai'i at Mānoa Children's Center. They explored preschool teachers' perspectives on the IC Standard and how it can be applied to early childhood education. The data came from participant observations and focus-group interviews. Teachers from the Children's Center were

video recorded having ICs with small groups of children, ages 2-5. While observing the videos, Goh took notes describing strategies that seemed to increase child engagement in the conversation. In addition to her notes, Goh used ratings from independent coders who watched the same videos. The raters used an early child rubric to rate use of the CREDE Standards and identified lessons with relatively high implementation of IC. Using a combination of her notes and the coders' ratings, Goh identified clips of ICs to discuss with teachers during semi-structured focus group interviews. The purpose of the interviews was to promote teachers reflecting on their use of ICs, identifying strategies that seemed to support ICs, and discussing ways the criteria for ICs could be changed to be more developmentally appropriate for young learners.

After completing their analysis of the data, Goh, Yamauchi, and Ratliffe (2012) found several interesting themes regarding ICs with preschool aged children. First, from the teachers' perspective, ICs are characterized by reciprocity, or "a two-way interaction between teachers and children involving both verbal dialogue and purposeful nonverbal communication" (p. 309). The conversations are times of "intense engagement" between teachers and children during which teachers assess children's prior knowledge, interests and make links to learning goals. An important finding from Goh et al. was that some educators felt that asking young children questions about their views, judgments and rationales, part of the IC criteria, was not developmentally appropriate. According to the interview data, some educators felt that young children were not old enough to be asked such questions. However, the authors found examples from the video recordings that demonstrated teachers asking such questions. The research focused on the teachers' behaviors and perspectives. Follow-up research focusing on different types of questions

and how children respond during ICs could further address the concerns voiced by teachers related to the developmental appropriateness of questioning young children and their views, judgments and rationales. Research exploring children's responses to teachers' attempts to engage children in ICs could expand knowledge of how the standard can be effectively used with very young learners.

Yamauchi et al. (2013) study investigated if professional development activities influenced preschool teachers' use of the IC CREDE standard. As with the previous two studies, Yamauchi et al.'s work came from the collaboration between CREDE Hawai'i and the University of Hawai'i at Mānoa Children's Center. The findings indicated that educators' use of IC increased throughout their participation in professional development, regardless of their prior teaching experience. The authors found that teachers who worked with older preschool children tended to have higher IC scores than teachers who worked with younger preschoolers. This finding confirmed similar findings from previous research that children's ability to attend to and hold conversations increase over time (Miller, 2010) and therefore, it makes sense that it is easier for teachers of older preschool aged children score higher for the IC standard than teachers of younger preschool aged children. However, as Yamauchi et al. write, and the forthcoming articles summarized in this literature review on social interactions and language development highlight, conversing with children, even very young children, has educational value in terms of promoting language and cognitive development. As long as the non-verbal resources of very young children are recognized, it is possible to have conversations with even the youngest of preschoolers. Yamauchi et al. suggested, "Instructional conversation, as a planned instructional strategy, has the potential to encourage more

stimulating, engaging, and cognitively challenging communication in early childhood settings” (p. 143). The researchers did not look at the effects of IC on child outcomes or children’s cognitive development. Possibly, a microanalysis of ICs that looks at the details of teachers’ actions and students response to those actions could give valuable information on how ICs promote language and cognitive development.

The prior work on ICs and early childhood (Goh, et al., 2012; Yamauchi, et al., 2013; Yamauchi et al., 2012) has served to define criteria for ICs with young children and shared teachers’ perspective of the standard. The results of their research demonstrated that although ICs can be challenging, with professional development, teachers could increase their enactment of the standard. Next steps include analyzing ICs in early childhood classrooms to understand strategies teachers use to cope with the realities of implementing ICs with children from a variety of backgrounds, languages and levels of development. Microanalyzing ICs could illuminate patterns of when children engage in ICs, and how they respond to teacher behaviors outlined by the early childhood CREDE criteria for effective ICs.

Other research, not necessarily from CREDE, has shown a positive relationship between teachers conversing directly with children or small groups of children and their language development. Following are examples of that research.

Adult-Child Interactions and Child Language Acquisition

The literature on adult-child interactions and child language acquisition is extensive. Research in this area strongly suggests there is a positive relationship between the quality of adult and child conversations and child language development

(Chapman, 2000; Hart & Risely, 1992, 1995, Huttenlocher et al., 2002; Mashburn et al., 2008; McCartney, 1984; Ruston & Schwaneflugel, 2010).

Using multiple-regression analysis, Huttenlocher et al.'s (2002) work found a correlation between the amount of teachers' syntactic input (complexity and organization of words used with children) and the syntactic growth of the language of preschool children they taught. McCartney (1984) found the number of utterances caregivers directed to young children predicted their language scores on two language achievement tests after controlling for family background and current center care experience. She concluded that verbal interactions with caregivers appeared to positively affect children's language development.

Similarly, Ruston and Schwaneflugel (2010), who studied the effects of teachers conversing with preschool children, found a correlation between adults conversing with children and their language achievement scores on the Expressive Vocabulary Test (EVT). The authors administered the EVT as a pre and post test measure. Children with similar EVT scores were then placed in either an experimental or control group. The intervention involved pairs of children being pulled out of their preschool class to have conversations with a trained adult. The children in the experimental group received 500 minutes of the intervention. The adults were trained to engage the young children in conversations, using rare words, linguistic recasts and open-ended questions with the children. The intervention led to an increase in children's vocabulary in the experimental group, especially for children who were identified as having "low vocabulary" before the intervention. Mashburn, et al. (2008) also found a link between children's expressive language skills and the amount, as well as quality of teacher-child interactions in the

preschool classroom. The aforementioned research presented a positive causal relationship between the quality of adult conversations with young children and their language development. However, there is still a need to better understand the nature of such “effective” interactions with young children and to explore why conversing with young children in preschools continues to be an underused teaching strategy (Justice, et al., 2008; Massey, 2003; Miller, 2010; Turnbull, Anthony, Justice & Bowles, 2009).

Researchers have begun to explore the nature and quality of effective interactions between adults and young children. In this literature, effective interactions are those in which adults and children are actively engaged with high levels of participation from the children (Jurrow & Creighton, 2005; Lobman, 2006; Sawyer, 2004). ICs would fit this description. The following are some initial themes in the literature on what effective interactions between adults and children look like.

Chapman (2000) offers a meta-analysis of the literature on child language acquisition and proposes that the research is converging on an interactionist perspective. She concludes her synthesis of the literature by suggesting that conversational language interventions lead to faster language acquisition. Chapman suggested that the interventions have four things in common: (a) Modeling of developmentally appropriate words and sentence structures, (b) Requests for participation by the adult (eliciting production), (c) Expansion or adding of missing but necessary words or grammatical forms to children’s utterances, and (d) Following children’s leads by staying on the children’s conversational topic or by commenting on their actions. All four of these language interventions require adults to be highly aware of and responsiveness to children.

Responsiveness. A common theme in the research on the nature of effective interactions is adult responsiveness to children and their communicative attempts. Chapman (2000) wrote that the last 25 years of work on child language acquisition provides evidence for two important generalizations about the nature of children's language learning:

First, language acquisition follows a course in which *new meanings and communicative functions are first expressed by old means, or forms, of behavior--* -whether gesture, vocalization, words or sentence structure. Second, *new forms of communicative behavior typically emerge to express meanings and communicative intents already in the child's repertoire* (italics in the original; page 33).

Chapman's generalizations relate directly to the theme of responsiveness. When adults uptake, or use, children's gestures, vocalization or words and build upon them during a conversation, language acquisition is facilitated, as Ruston and Schwaneflug's (2010) found when they had adults recast, or repeat back children's utterances with subtle corrections or additions. Responsiveness entails integration of what a child says or does into a conversation. It contrasts with the concept of "direct instruction" and relates to the concept of "reciprocity" during ICs from Goh et al. (2012) research. The preschool teachers interviewed by Goh, Yamauchi and Ratliffe emphasized that ICs are interactive with teachers responding to children using multiple "tools" to support learning. Responsive educators bridge a child's existing behaviors or communicative functions with new communicative behaviors. For example, when a teacher responds to a child who is holding up three fingers by mirroring three fingers on her own hand and saying, "You are showing me three. One-two-three [while pointing to their fingers]," she is

linking the new communicative function of verbalizing the number three with the child's already existing behavior of communicating numbers with gestures.

Responsiveness from adults during conversations encourages children to be more engaged (Tizard & Hughes, 2002; Lobman, 2006). When responsive adults use personally relevant topics when interacting with children, the children tend to be more participatory and expressive (Tizard & Hughes, 2002). Knowledge of personally relevant topics for children requires educators to be sensitive and familiar with children and their backgrounds. Tizard and Hughes call using personally relevant topics "familiarity" between teachers and young children. By analyzing interactions, the authors found that familiarity was a major factor to promote meaningful conversations between teachers and preschool aged children. The concept of "familiarity" correlates with the term "responsiveness" used by several researchers (Jurrow & Creighton, 2005; Lobman, 2006; Sawyer, 2004) who explore behaviors adults use to engage children in interactions to promote language, as well as cognitive development. Responsiveness results from adults demonstrating sensitivity and knowledge of children during conversations; it entails accepting and building on children's contributions during interactions.

Lobman (2006) conducted an in-depth case study to explore how experienced early childhood educators interacted with children. Lobman suggested that educators coparticipating and responding to children during activities was an effective means to enhance learning (as cited in de Kruif, McWilliam, Ridley, & Wakely, 2000; Kontos, 1999). Lobman compares responsive teaching to improvisation as Erickson (1982), Jurrow and Creighton, (2005) and Sawyer (2004, 2004a) also did. Lobman wrote, "Responsive teachers are those who pick up on children's cues and who find ways to

extend and enhance what children are doing, rather than limiting or redirecting their activity” (p. 456). Educators can extend and enhance activities by adding materials, or by providing information. The importance of extending and enhancing activities and actions of children in early childhood settings relates back to Chapman’s (2000) generalizations, gleaned from 25 years of research on child language acquisition, that new meanings and communicative functions are built from existing behaviors. If teachers are constantly initiating and directing activities, opportunities for children to express their existing behavior and knowledge could be limited.

Lobman (2006) analyzed the behaviors of educators during interactions, as well as the behaviors of children, to better understand the educational value of responsiveness. Lobman categorized responsive interactions from her data and identified times when the educator acknowledged, enhanced, or elaborated on what children were saying or doing. In addition, she categorized less responsive behaviors when the educator ignored, distracted, or redirected children to other activities and found decreased participation levels compared to the responsive episodes. Lobman focused on one teacher and her interactions so there is a need expand her research to a larger sample size. Also, Lobman focused on interactions and teacher responsiveness during more open-ended play activities. A need exists to examine teacher responsiveness in other early childhood context, such as during instructional conversations or when teachers want to address specific goals.

When comparing effective teaching to improvisation in the arts, Sawyer (2004) adds, “disciplined” to the term, “improvisation.” “Disciplined improvisation,” according to Sawyer, represents responsive teaching that occurs within classroom routines and

activity structures. The metaphor helps to highlight the role of children as active participants in the classroom, while maintaining a facilitator role for the teacher. Sawyer emphasized the reciprocal nature of interactions and contrasted these “disciplined interactions” to scripted programs, the latter are more like teachers as actors, performing for an audience. Sawyer (2004a) continued to use the disciplined improvisation metaphor and outlines specific behaviors improvisation actors use to maintain an on-going scene that teachers could also use to promote on-going discourse in a classroom. Sawyer writes about professional development for teachers using the “rules of improvisation” as a framework to instruct teachers on how to engage learners in conversations. One action, or rule of improvisation, is acceptance rather than rejection. Effective improvisation actors “accept” or uptake the fellow actors previous line and add to it to move the scene forward. Acceptance relates directly to the interaction literature of adult responsiveness. Revoicing a comment made by a learner is a way for teachers to accept a comment. Revoicing relates directly to “recasting and expanding” child utterances discussed in the child language acquisition literature referenced earlier (Chapman, 2000; Girolametto, Weitzman, and Greenberg, 2006; Ruston and Schwaneflugel, 2010).

Research indicates an important component of adult responsiveness to the use of utterances that are not overly complex. Tsybina, Girolametto, Weitzman, and Greenberg (2006) worked with preschool aged English as a second language children focusing on linguistic recasts, or semantic and syntactic revisions of children’s utterances, during educator-child interactions. The authors filmed and transcribed interactions. They recorded rates of educator recasts and analyzed child uptake of recasts. The authors

found evidence of increased child uptake of language when teachers used recasts that were not overly complex. They recommended educators increase rates of recasts and decrease the complexity.

Context. Another theme in the literature on effective adult-child interactions is context, with data suggesting context influences how children and adults use language, the quality of language input and ultimately child's language development (Chapman, 2000). Turnbull, Anthony, Justice and Bowles (2009), as well as Girolametto, Weitzman, van Lieshout and Duff (2000) also found that context plays a significant role in adult-child interactions in preschool classrooms. Turnbull, et al. (2009) looked at the quality and quantity of interactions between educators and economically disadvantaged preschool children and how contextual factors such as group size (small group vs. large group) and activity context (teacher-directed versus child-directed) influenced language used by educators. The quality of language preschool teachers used was defined by looking at six types of language stimulation techniques (Rice & Hadley, 1995). The language stimulation techniques included, (a) Models or when adults used a target sound, word, or grammatical structure, (b) Event casts when the adult describes an event or activity that took place, (c) Open questions that required more than yes/no answers and did not have one correct or in-correct answer, (d) Recasts/Expansions that involved an adult repeating what the child said while making subtle changes to model target language, (e) Redirects/ prompted initiations when the adult directed the child to initiate conversation with a peer, and (f) Focused contrasts such that the adult provided feedback by contrasting differences between utterance used by the child and the correct form.

Only 36% of educators' utterances in Turnbull et al. (2009) could be categorized as one of the language stimulation techniques. The authors reported the other utterances included things like directives, closed-ended or rhetorical questions, or general praise. Models and recasts occurred the most frequently. Event casts, focused contrasts and prompted initiations had negligible rates. The authors also found dramatic variability in the frequency of language stimulation techniques between classrooms, and these findings were independent of group size. Language stimulation strategies took place relatively more frequently when group size was from between 1-5 children and the activity context was child-directed such as during centers, dramatic play or art activities. Turnbull et al. (2009) did not study how children responded to the language stimulation techniques nor did they examine whether use of language stimulation techniques promoted greater participation of children or more extended conversational turns by the children.

Context was also a factor in Girolametto et al.'s (2000) findings. The authors observed significant differences between types of language input teachers use with toddlers and preschoolers during two different contexts, book reading and a play-dough activity, and differences in children's overt participation in the classroom. The book reading context was characterized as being more teacher-directed and the play-dough activity as more child-directed. Teachers used significantly more behavior and response control discourse moves, such as topic-control, commands, test-type questions, and yes/no questions during the book reading activity than the play-dough activity. The adult-child interaction during the play-dough activity was characterized as being less directive and more interactive. Child participation, regardless of age, was higher during the play-dough activity. The play-dough activity was associated with the greatest number

of utterances from children, including a greater variety and more complex combinations of words. The authors report that when teachers were highly directive, the activity had less balanced turn-taking overall. Their study suggests that teachers may benefit from training to reduce directives to control behavior, turn-taking and topics and increase use of open-ended, more conversational questions during book reading.

Questioning. A final theme in the literature related to the nature of effective child-adult interactions relates to questioning. Several recent articles focused specifically on educators' use of questions to encourage participation of children and ultimately assist their language growth and cognitive development (Lee & Kinzie, 2012; Massey, Pence, Justice & Bowles, 2008; van de Pol, Volman, Beishuizen, 2010). The use of too many questions, questions beyond a child's developmental level, or questions meant to control the flow of the conversation stifled child participation in interactions (Lobman, 2006; Sawyer, 2004; Weitzman & Greenberg, 2002). When sharing their perspectives on ICs, teachers participating in the CREDE Hawai'i project voiced concerns about asking very young children questions about their views, judgments and rationales (Goh, et al., 2012). Successfully using questions to promote child participation during interactions requires sensitivity and responsiveness by teachers, especially when conversing with very young children or dual language learners.

When correctly designed, questions can serve as invitations for children to take turns in conversational interactions and assist, or scaffold, cognitive growth by encouraging children to use their higher mental functioning to predict, hypothesize, reason, imagine, and problem solve (Massey et al., 2008). However, effective use of open-ended questions that encourage participation is underused in preschools. Massey et

al. researched if there was a difference in preschool educators' use of cognitively challenging questions based on classroom context in economically disadvantaged classrooms. They found that 33.5% of all teacher utterances were questions. More cognitively challenging questions represented about 10% of preschool teachers' utterances. Of the questions documented, management questions were the most frequent type (44.8%). More cognitively challenging questions characterized 32.5% and less cognitively challenging questions characterized 22.7%. Classroom context influenced the types of questions used by teachers. Contexts characterized as teacher-directed and child-directed had teachers using more management type questions, while more cognitively complex questions occurred most frequently during shared storybook reading. The study did not analyze how children responded to different types of questions.

To explore the effects of adult questions posed to small groups of children on children's response rates and complexity of responses, de Rivera et al. (2005) studied 13 toddler teachers and 13 preschool teachers. Children and teachers were videotaped during classroom free-play time. The researchers coded the frequency of open-ended versus closed questions. The authors found that preschool teachers who used more topic-continuing questions (questions with a semantic link to what the child previously said) than did toddler teachers. The authors also found that toddlers did not respond differently to the two types of questions; however, preschoolers responded with more multiword utterances when asked open-ended questions and topic-continuing questions. Weitzman and Greenberg (2002) emphasized the importance of educators using questions that match children's stage of communication: "You can't avoid asking children questions they don't understand, nor should you try to. However, you should be aware of the types

of questions that will frustrate children or end the conversation because they are inappropriately complex” (p. 136). Weitzman recommended that if educators find children are not responding to open-ended questions, they should narrow them with modified follow-up questions.

Lee and Kinzie (2012) observed that teachers modified open-ended questions when children did not respond. Their research focused on teacher-student discourse during pre-kindergarten science activities and teachers’ use of questions during different science activities, types of questions used, and how children responded. Lee and Kinzie found that teachers mostly used closed-ended questions, or questions with one expected response. Open-ended questions were found, however, during small group science experiments in which the teachers asked children to make predictions and explain their reasoning. In response to such open-ended questions, children often used more varied vocabulary and more complex sentence structure compared to when teachers asked closed-questions. Lee and Kinzie observed that closed-questions frequently resulted in student responses that were single words with more limited range of vocabulary. As mentioned earlier, Lee and Kinzie noted a pattern that when children did not respond to a teachers’ open-ended question, the teacher would often follow-up with a series of closed-ended questions until the children responded. The opposite was rarely true with teachers following-up closed questions with open-ended questions. Perhaps the closed-ended question served the discursive purpose of encouraging the children to continue taking a turn and the teachers were “scaffolding” children to respond by narrowing the scope of the question. Further research in the area of what happens when children do not respond to open-ended questions is needed.

Using her improvisation lens, Lobman (2006) found that when preschool teachers asked a lot of questions, compared to when they used other moves to show “acceptance” of a child’s utterance such as revoicing, the children’s participation seemed to be restricted. Lobman postulated that the questioning positioned the teacher in a different role than conversational partner and the children responded with fewer comments. Lobman presented episodes in which the teachers’ questions appeared to control or redirect the children versus carry on the conversation. Weitzman and Greenberg (2002), building on their research on language intervention strategies, recommended that teachers carefully format their questions so that they continue, not control, conversations with young children.

Significant themes on the nature of effective child-adult interactions have emerged from the research. Responsiveness, context and questioning are three areas multiple authors have written about in terms of strategies that adults can use to engage young children in conversations. However, more work is needed to explore how children of different developmental levels and language backgrounds respond to various types of questions. Are some questions developmentally inappropriate for certain children or dual language learners? Does overuse of questions actually stifle such children’s participation? More research that not only looks at teacher questions but also at children’s responses is needed. Specifically, there is a need to further research if the CREDE early childhood criterion that teachers ask children their views, judgments and rationales actually discourages some children from participating in conversations? If so, two components of the IC criteria, asking questions and student-teacher participation

ratio at approximating one-to-one, may be opposing one another. Perhaps that is why so few teachers reach the “enacting” level of Instructional Conversations (ICs).

Discourse analysis is a resource that researchers of K-12 classrooms have been using to analyze teacher-student interactions. Although not specifically from a preschool context, the research is foundational to understanding teacher behaviors that encourage students to engage in conversations.

Classroom Discourse and Student Participation

In the current study, in order to address my research questions on *how* teachers promote child participation in ICs, I conducted a discourse analysis, or the detailed analysis of how language is used in different contexts (Rymes, 2009). How teachers engaged students in classroom conversations has been extensively studied. In this section, I summarize research that explores K-12 teacher behaviors and their impact on promoting student participation in classroom discourse. Interestingly, many of the teacher behaviors to promote participation are complimentary to the adult behaviors cited in the interactionist literature that promote child language acquisition, such as responsiveness, context and use of open-ended questions.

The following literature overview provides background information that directed my method and addressed my questions related to strategies teachers use to engage children in ICs and how the children respond, as well as my question on strategies to engage dual language learners. After my overview of research on classroom discourse, I describe and provide examples of different approaches used to analyze classroom discourse. Lastly, I synthesize the literature to describe and justify my methods.

There has been extensive research focusing on the role of dialogue in teaching that provide insights regarding the ways teachers can engage learners in interactions. To get a broad picture of prior research, I reviewed studies on teachers dialoging with students for educational purposes, studies on Instructional Conversations (ICs), as well as classroom discourse, student-adult interactions, and classroom dialogue. Over the past three decades, several researchers analyzed student participation in classroom discourse and uncovered important teacher behaviors that promoted child participation (Erickson, 1982; O'Connor & Michaels, 1993; Rowe, 1974, 1987; Rymes, 2003). Erickson's (1982) microanalysis of teacher-child interactions in a bilingual first grade found that when teachers were responsive to children and their comments, children's participation and focus on academic tasks increased. Related to teacher responsiveness, O'Connor and Michaels' (1993) microanalysis of classroom discourse strategies explored the purposeful use of language by two experienced teachers who had high rates of student engagement and participation in classroom discussions. They found teacher "revoicing," or reuttering of student's contributions, promoted participation, as well as supported thinking and language development. Rowe (1974) extensively researched teacher "wait-time," or pauses after posing questions, and its impact on student participation in classroom discourse. She completed a microanalysis, tracking speech, pauses and silences of teachers and elementary school students and found teachers' use of pauses after questions led to increased student participation in discussions and higher quality student responses.

Jurow and Creighton (2005) also wrote about responsiveness in terms of improvisational teaching. They focused on an early childhood context of bilingual (Spanish and English) K-1 teaching related to science and offered a perspective on

teaching in a responsive manner that is not necessarily a “play-based” context as Lobman’s (2006) study of preschool teaching being like improvisation. Jurow and Creighton wrote, “Improvisational teaching is informed both by students’ interests and ideas and teachers’ deep understanding of curricular goals; it is purposeful, but not predetermined (citing Erickson, 1982 and Sawyer, 2004)” (p. 276). Jurow and Creighton drew on discourse analysis and ethnography to analyze two “exemplary” K-1 teachers during science lessons and found that the two teachers in their study responded to scientific insights children expressed and built upon those insights to deepen their instruction.

By presenting a series of dialogic episodes taken from classroom conversations between teachers and a small group of children, Jurow and Creighton (2005) documented how the teachers’ responsiveness served to scaffold and deepen the children’s understanding of scientific concepts. Furthermore, Jurow and Creighton highlighted a variety of discursive resources the teachers used to promote the participation of children in the interaction. For example, relating back to the theme of responsiveness presented earlier in this literature review, Jurow and Creighton presented an episode in which the teacher responded in Spanish when a child shared an idea about a scientific concept in Spanish (bringing in responsiveness and personal relevancy to that student). The teacher also used embodied actions such as hand gestures and gaze, material artifacts to support the interaction. The episodes presented in the paper document that the teachers had both structure and flexibility.

Rymes’ (2003) conducted a longitudinal analysis of English as a second language learners’ participation in classroom discourse throughout Grades 2 and 3 and

found that the context of the discourse led to qualitatively different opportunities for oral language participation. The second language learners she studied did not contribute elaborate oral narratives during formal, explicit, teacher-driven literacy activities. Their participation was minimal during the highly structured, “academic” activities. However, outside the “official lessons,” when interactions between the teacher and students became more conversational and spontaneous, Rymes documented the second language learners participating, co-telling, and taking extended turns at talk to share narratives of their personal experiences. Rymes’ post-lesson interactions, that appeared more conversational, responsive, and personally relevant than the more scripted lessons, had features consistent with ICs. The literature cited above describes a connection between teacher’s interactional behaviors and student participation levels. Teacher behaviors, such as responsiveness to children’s comments, revoicing of utterances, teacher wait-time, and structuring of classroom activities all appear to influence student participation levels.

Some researchers who have studied classroom interactions analyzed participation structures of conversations. An oft-cited participation structure is the sequence of Initiation-Response-Evaluation, or I-R-E (Mehan, 1985) found in many American classrooms. Teacher and student discourse in the classroom often follows the sequence of the teacher initiating the interaction, usually by asking a question, a student response, and then teacher evaluation. Typically, the interaction stops after the teachers’ evaluative move. Such interactions do not have the reciprocal nature of participation found in naturally occurring conversations.

The work of Goffman (1974) and Goodwin (1990) use the concept of participant framework to analyze student engagement in student-teacher classroom discussions. Participant framework, as described by Rymes (2009), refers to implicit participation structures. These structures offer differing degrees of status, depending on the conversational “role” each participant takes. For example, when a teacher is present in a small group discussion, the students often fall into the role of “being the student,” waiting to follow the lead of the teacher. However, if the students are working in a group independent of the teacher, the participation structure shifts and students often participate differently than when the teacher is present.

Other seminal analyses of classroom discourse include research by Heath (1983) Cazden (1988, 2005), and Erickson (1996) who analyzed classroom interactions and uncovered significant features of conversational participation patterns between teachers and students. The researchers referenced above recorded interactions between learners and adults at home and at schools. Some studies were longitudinal (Heath, 1983) and compared significant episodes (Erickson, 1996) across contexts. The taped interactions were transcribed using various conventions, however all uncovered details of participant’s conversational actions. As I will describe further in the following paragraphs, Heath, Cazden and Erickson’s observations provide foundational insights regarding how interactions between teachers and children are structured, how those structures impact student participation that ultimately contributes to learning—both in the areas language acquisition and cognitive development.

Heath’s seminal (1983) research analyzed participation frameworks and roles in children’s homes and schools. Her work was a longitudinal, ethnographic study and

included extensive background information. Heath found that known-information questions were common in classrooms, which was not necessarily the case in the children's home context. She saw a mismatch between a child's home discourse patterns and school discourse patterns that contributed to why some children struggled in school settings. Teachers frequently asked known-answer questions, which were unfamiliar, and even intimidating for some students, inhibiting their participation in classroom discussions.

Cazden's (1988, 2005) work highlighted how teachers can adjust their behaviors and classroom structures to increase student participation in discussions. Cazden presented examples of "true" classroom discussions in which students talked more than teachers, decided when to speak, and addressed one another directly. She delineated possible teacher actions that may contribute to the increased participation. First, Cazden (2005) emphasized the importance of relating concepts to children's personal experiences, much like Tizard and Hughes (2002) from the language acquisition literature. In addition, Cazden (1988) discussed how speaking rights, or how and when children are given opportunities to speak in the classroom, impacts participation. Higher rates of student participation were related to classrooms where children self-selected turn taking as opposed to those that were teachers dominated. Also, Cazden wrote about the teacher's role in discussions and how, when asking too many known-answer, test-like questions, teachers "foil" discussions and inhibit participation. In comparison, when teachers ask sincere, non-test questions, children's participation and quality of contributions improves.

Approaches to Studying Discourse

Discourse analysis is a general term for multiple approaches to studying written or spoken communication in different contexts. Discourse analysis is also an approach in and of itself. Based on a social constructivist point of view, (Bucholtz, 2004; Phillips & Hardy, 2002) discourse analysis helps researchers discover *how* social reality is produced through language. To study how social reality is produced through discourse, analysts look at the details of speech (as well as gaze, gesture, and action) that are relevant to the context and the hypotheses being explored (Gee, 2011).

Discourse analysis is a topic of interest for linguists, anthropologists, sociologists, psychologists and educational researchers (Gordon, 2011). As Gordon stated, “this multidisciplinary interest explains the methodological and theoretical diversity in published studies” (p. 105). As there are different methods and theoretical perspectives within the broad discourse analysis category, it is important to stress that there is no universal agreement in terms of differentiating the approaches to studying discourse, or categorizing particular studies (Gordon, 2011). However, discourse analyses share a common perspective that language helps construct social reality. The approaches often differ in two regards: (a) the amount of background knowledge necessary to understand the discourse and, (b) whether the researcher’s role is to discover the participants’ own perspectives, or to offer an interpretation of the discourse (Bucholtz, 2003).

To answer these questions, researchers apply their theoretical framework and disciplinary traditions. The approaches to discourse analysis are similar in that they recognize interaction as being highly organized and patterned. Furthermore, in terms of the type of data to be analyzed, researchers who apply the following approaches prefer to

use “naturally occurring” data such as conversations between children in the classroom (Burdelski & Mitsuhasi 2010), or children and teachers (Rymes, 2003), as well as conversations between children and parents (Heath, 1983). The approaches all use detailed, transcribed data to analyze the discourse; however, the amount of detail and foci in the transcripts varies depending on the purpose of the study. Typically, the analysis is qualitative, but may also include some quantitative approaches (Gordon, 2011). For example, in Burdelski and Mitsuhasi (2010) analyzed interactions between preschool teachers and children and child peers related to socializing boys and girls differently to use the word *kawaii*. The authors presented qualitative data of significant episodes of conversations, as well as a quantitative analysis related to frequency of teachers’ use of *kawaii* with different genders of children in different contexts.

I found several approaches to analyzing classroom discourse in the literature I reviewed—and oftentimes the articles used a combination of approaches. Examples of approaches found in the literature include interactional sociolinguistics, ethnography of communication, and conversation analysis. In the following paragraphs I will describe these three approaches and provide examples from the literature.

Interactional sociolinguistics. Interactional sociolinguistics is an approach rooted in linguistics, anthropology and sociology (Gordon, 2011). By analyzing detailed transcripts of naturally occurring conversations, researchers applying the interactional sociolinguistic approach look at linguistic structure, as well as the social and cultural contexts of talk and include background information on culture, differentiating this approach from others such as conversation analysis. Interactional sociolinguistics is a theoretical orientation used to examine gender and communication, such as with the

Burdelski and Mitsuhasi (2010) article on interactions between preschool teachers and children and child peers related to socializing boys and girls differently to use the word *kawaii*. Interactional sociolinguistics also looks at cross-cultural miscommunication and construction of identities through discourse (Gordon, 2011). Therefore, the analysis offers interpretation of discourse, unlike some other approaches to discourse analysis that focus on just presenting the participants' perspective. Interactional sociolinguistics often focus on participants' use of contextualization cues, which are often culturally influenced. Such contextualization cues could include word choice, sentence structure, rhythm, stress, and intonation. For example, Burdelski and Mitsuhasi illustrated the ways teachers use talk, embodied actions, material objects, and participation frameworks to socialize children into language use and gender roles.

Ethnography of communication. The ethnography of communication approach has roots in anthropology and linguistics. It focuses on understanding diversity of language use related to cultures and communities and uses a wider perspective of context than other forms of discourse analysis (Gordon, 2011). Researchers often spend significant amounts of time within the community being studied and examine community members' language use within different context (such as at home and school). A key concept studied is speakers' communicative competence (Hymes, 1972) or the idea that to effectively communicate in a language one must know more than just the grammatical rules. In addition to grammar, effective communicators know cultural or group norms related to how the language is used. Heath's (1983) longitudinal research analyzing participation frameworks and participant roles at children's homes and schools is an example of ethnography of communication. As with Heath's study, ethnographers invest

significant time to learn cultural patterns and norms in terms of how language is used within the community being studied. Significant amounts of background information are provided.

Conversation analysis. With the conversation-analytic approach, the researcher's focus is on the events directly observable in the interaction. The analysis uses the communicative actions of the participants to determine what is relevant or consequential and focuses on the participant's perspectives (Schegloff, 1992). Therefore, strict conversation analysis (CA) does not include background information and avoids interpreting the purpose behind the participants' actions. Schegloff, Koshik, Jacoby and Olsher (2002), describe turn taking, repair, and word selection as being some major areas of focus in the CA approach. It is an approach to study verbal and non-verbal interactions in everyday social interactions. It looks at conversational structure and the moment-to-moment creation of social organization through conversation (Gordon, 2011). The CA method of transcribing documents interactional factors such as turn sequences, pauses, intonation, gaze, gestures, overlapping speech, repeated speech, and more. There are standard recommendations in terms of font and the numbers of characters per line in order to help analysts better see how the turn sequences are structured and capture overlaps (see Appendix A for examples of CA transcription conventions).

Because CA transcription is highly technical and detailed, the act of transcribing becomes part of the analysis process (Davidson, 2010). True CA researchers begin transcribing their data without pre-identified criteria in order to avoid bias and oversight. Conversation analysts use the actions of the participants in the videos to determine what is relevant or consequential (Schegloff, 1992). As Ortega (2009) puts it:

CA forbids the analyst to engage in any *a priori* invocation of social structure, culture, power, ideology or any such interpretive categories that pre-existing theories or assumptions may make available, although it may allow all such categories if they are *a posteriori* interpretations closely grounded in the observable interactional conduct of the social agents at talk. (italics in the original, p. 229)

Although CA researchers avoid approaching the data with predefined categories, the method does provide techniques to help them determine what is relevant and consequential such as analyzing how participants take turns and orient to one another (Gordon, 2011). When analyzing data using CA, one looks for repeated sequences, recurrent patterns, turn-taking, interruptions and pauses, overlapping speech, tone, pitch, pace and volume, and word choice (Cahill & Papageorgiou, 2007). For example, with turn taking, CA researchers examine how certain turns have expected responses. For example, it is expected that the response to a question is an answer and if the expected response is missing, a conversational breakdown has occurred. Looking at how the participants deal with trouble in the interaction, or repair, can illuminate relevant factors to the interaction. CA can help identify and describe how teachers and children organize and coordinate their actions and interactions, as well as the resources they use to communicate (Birch, personal communication, 2012).

Cahill and Papageorgiou (2007) used CA to analyze communication between doctors and their pediatric patients and found patterns in doctor's behaviors during consultations with children (6-12 years) and the amount of participation from children in the consultation. They found that children participated more in consultations when

doctors used recipient design, or communicated an orientation to the children as coparticipants (Sacks, Schegloff, & Jefferson, 1974). Recipient design, much like responsiveness discussed earlier in this literature review, happens when a speaker uses words, tone, actions, etc.... that display sensitivity to the recipient(s) personal characteristics and background knowledge (Greer, 2010). It is, according to Greer, the “designing of utterances for intended audiences” (page 44). Cahill and Papageorgiou found that doctors employed recipient design by using the child’s name, gazing directly at the child and pausing for longer periods than usual after asking a question. The authors also found that children responded more when doctor’s asked closed questions versus open ones.

Researchers from a sociocultural perspective have effectively used CA to help uncover authentic moments of establishing intersubjectivity, or when two participants reach a common, shared understanding related to a certain topic (van Compernelle & Williams, 2012). Furthermore, researchers working with young children have successfully used CA and it is becoming a more common method to facilitate analysis of interactions with young children (Davidson, 2010; Tarplee, 2010). As Lieven (2010) writes, examining how young children use their language in detail using CA has the potential to provide a “much more complete account of language development” (page vii).

CHAPTER 3

METHODS

The following methods were designed to study the details of communication between teachers and children during ICs in preschool classrooms. I employed qualitative methods to address my first three research questions related to uncovering communication strategies effective teachers use to engage preschool children in ICs and the children's responses. I used quantitative methods to address my final question on the relationship between preschool teachers' use of IC and their children's language achievement as measured by the Peabody Picture Vocabulary Test, 4th Edition (PPVT) and the Expressive Vocabulary Test (EVT).

Setting

A total of 27 hours of video data were collected and analyzed. All videos were recorded at the University of Hawai'i at Mānoa Children's Center in 2009. The Children's Center provides early childhood education to children of University of Hawai'i students, faculty and staff. According to the school's website, the Children's Center's mission is to model high-quality, relationship-based early childhood education, as well as provide student parents, faculty and staff access to high-quality care (University of Hawai'i at Mānoa Children's Center Website, n.d.). A goal of the Children's Center is to also provide on-going professional development for their staff, University of Hawai'i students, and the broader early childhood education community. Children at the site range from 2- to 5-years-old. Approximately 42% of the children at the Children's Center were Asian/Asian-American, 40% were European/ European-American, 15% Native Hawaiian/ Pacific Islander and the remaining were African-

American or Latino (W. Watkins, personal communications, 2011). Children from the preschool came from a range of socioeconomic backgrounds (a range from 31-48% qualify for free and reduced lunch each year).

Participants

Nine female teachers trained to use ICs participated in this study. The teachers' years of experience ranged from 5 to 16 years with a mean of 10.667 and standard deviation of 4.848. All of the teachers spoke English as their first language and identified themselves as Asian-American (n=7) or European-American (n=2).

The teachers were required to participate in the professional development by the school's director; however, they volunteered to participate in the research and provided their informed consent. The University of Hawai'i Committee on Human Studies approved the research.

In total, 117 children at the preschool site participated in the study and parents provided consent. This sample size, since it was over 100, was sufficient for statistical power (Stevens, 1996). There were 66 boys and 51 girls in the sample. The range of ages was 33 to 65 months, with a mean of 48 months and standard deviation of 7.9. There were 65 English only speakers and 52 DLLs.

Instruments

Video recording and scoring of ICs. Video recordings were scored using the ECE-7 rubric, an observational tool to measure use of the CREDE standards in early childhood classrooms (see Appendix B for a copy of the ECE-7). The ECE-7 was created by modifying the Standards Performance Continuum, a validated instrument to assess K-12 teachers' use of the CREDE Standards (Doherty, Hilberg, Epaloose, &

Tharp, 2002; Yamauchi et al, 2012). Teachers' scores range from zero, "Not Observed" to five "Exemplary".

Measuring vocabulary achievement. The Peabody Picture Vocabulary Test-4th Edition (PPVT-4; Dunn & Dunn, 2007) was used to measure student's receptive English language vocabulary. The PPVT-4 is widely used and norm-referenced (Community-University Partnership for the Study of Children, Youth, and Families; 2011b). It is designed to assess individuals 2 years 6 months, to 90 (or more) years. The PPVT-4 is individually administered. Four pictures are presented to a child and he or she is asked to point to the picture corresponding to a word spoken by the test administrator. The difficulty of the words increases as the test progresses. The administrator stops the test once a ceiling is met and the child is no longer able to identify corresponding pictures.

The psychometric properties for the PPVT-4 are good. The test-retest reliability has correlations between .92 and .96, the internal consistency using the split-half method for the two forms (A and B) of .94 and .95, respectively, and alternate-form reliability using forms A and B have reliability coefficients between .87 and .93.

The PPVT-4 manual referenced several studies that assessed the construct and convergent validity of the assessment with moderate to high correlations (Dunn & Dunn, 2007). First, the PPVT-4 was compared to the EVT-2 with high correlations ($r = .80$ to $.84$) for all age groups. Second, the PPVT-4 was compared to the Comprehensive Assessment of Spoken Language (CASL) with correlations for the 3-5 age range averaging at $r = .49$. Third, correlations between the PPVT-4 and the Clinical Evaluation of Language Fundamentals Fourth Edition (CELF-4) were found. For the 5-8 age range (the youngest range available), the average correlation was $r = .71$. A fourth study

compared the PPVT-4 to the Group Reading Assessment and Diagnostic Evaluation (GRADE). The average correlation was $r = .63$. Finally, the PPVT-4 was compared to the PPVT-III, the previous edition of the test, with a correlation of $r = .84$.

The Expressive Vocabulary Test-2 was used to measure expressive vocabulary and word retrieval in English. (EVT-2; Williams, 2007). It is designed to assess individuals aged 2 years 6 months to 90 (or more) years and is co-normed with the PPVT-4 (Community-University Partnership for the Study of Children, Youth, and Families, 2011a). The EVT-2 is also individually administered. The test administrator presents a picture and reads a question to the child. The child responds with an acceptable label, answers a question, or gives a synonym for the word. As with the PPVT-4, the test increases in difficulty as it progresses and a ceiling is established once the child can no longer provide answers at which point the test stops.

The psychometric properties for the EVT-2 are also good. The test-retest reliability has correlations between .94 and .97, the internal consistency using the split-half method yielding .94 and .93 on Forms A and B respectively, and alternate-form reliability using forms A and B had reliability coefficients between .83 and .91 (Community-University Partnership for the Study of Children, Youth, and Families, 2011a; Williams, 2007).

To determine the construct and convergent validity of the EVT-2, the test was compared to other assessments of English vocabulary such as the PPVT-4, as referenced above. It was also compared to the Group Reading Assessment and Diagnostic Evaluation (GRADE) test, with average correlations in the .60s and .70s. Lastly, EVT-2

scores were compared to a previous edition of the test, the EVT, with strong correlations between .78 and .82 (Williams, 2007).

Procedures

Professional development and video recording of ICs. Throughout the 2008-2009 school year, the nine teachers participating in the current study attended three professional development workshops with the CREDE Project at the University of Hawai'i at Mānoa during school intercessions. The teachers, the preschool administrators, and the CREDE staff met for approximately four hours to discuss ICs and the other CREDE Pedagogical Standards (see Yamauchi, et al., 2012 for a full description of the professional development). The workshops promoted the teachers' knowledge and application of the CREDE standards. Teachers also provided the CREDE staff with feedback on the developmental appropriateness of the standards, which was used to refine the ECE-7 observational rubric.

As part of the professional development, teachers were video recorded three times during the year while working with small groups of children for 60 to 90 minutes. The recordings took place in the morning at the Children's Center and the teachers did not know when the videographers were coming. The purpose of the tapes was to support the teacher's on-going reflection and growth related to implementing IC and the other CREDE standards, as well as for more general research purposes. One reason I researched strategies preschool teachers used to promote participation of children in ICs, especially with dual language learners, is because it was an area of concern voiced by the Children Center's teachers during the CREDE professional development described above.

ECE-7 coding. A total of 27 video recordings were collected. Two trained, independent observers watched the recordings and rated the teachers' use of IC using the ECE-7 observational rubric (Appendix B shows the rubric). The coders first watched the videos independently and scored them using the rubric. The observers noted examples of how teachers did and did not meet criteria from the ECE-7 rubric on coding sheets. An inter-rater analysis using intraclass correlations was performed to determine consistency among the two coders' IC scores. It was found to be .905, which is very high and satisfactory (Shrout & Fleiss, 1979). After independently scoring the videos, the two coders met to discuss any score discrepancy and come to consensus on one score.

PPVT-4 and EVT-2 Administration. The 117 children were pulled individually from their classroom and took the PPVT-4 and EVT-2 in the spring of 2009. A teaching assistant administered the tests from the Children's Center who was trained to use the PPVT-4 and EVT-2.

Data Analysis

Discourse analysis of video recordings. The discourse analysis focused on the transcripts of video recordings that were coded as level 4 "enacting" or level 5 "exemplary" for IC. Two of the 27 recordings were coded at level 4 "enacting" and three recordings were at level 5 "exemplary". This criterion sampling allowed for a more detailed analysis of engagement strategies and child responses during fully enacted ICs (Merriam, 2009).

I watched the five video recordings multiple times and used the Transana transcription and analysis software (Fassnacht & Woods, 2005) to insert time codes that linked the transcripts to the video recordings. As I watched the recordings, I identified

one to two minute episodes with a verbal and non-verbal communication ratio of teacher-child turn-taking of at least 1 to 1 (following data reduction strategies from Miles & Huberman, 1994). When selecting the episodes, I focused on how the teachers' actions contributed to the on-going activity and children's participation (Erickson, 1995; Goffman, 1981). I used Goffman's notion of participation frameworks, or the analysis of how the participants in conversations respond to one another's utterances or gestures, throughout my discourse analysis. For example, I analyzed how the children responded to certain types of words the teachers used (such as their use of plural pronouns) and compared the responses across the data to find patterns.

Although the five video recordings were "enacting" or "exemplary" ICs, there were moments when child participation in the conversations decreased and teachers' attempts to engage the children were not successful. Children at the Children's Center are free to come and go from activities as they please, so a good measure of disengagement was when children chose to leave an activity before it was completed. While watching the recordings, I noted teacher actions when participation was low.

My initial analysis of the high-participation video-recordings entailed inserting key words related to observed teacher actions (Jacobs, 1987). The key words came from the literature review on adult-child interactions and strategies to promote child participation as well as my observations. Table 2 summarizes the key words and definitions.

Table 2

Description of Key Words Used to Identify Teacher Actions

Action	Description
Questioning	Using open and closed ended questions (Lee and Kinzie; 2012).
Topic-continuing	Saying something that has a semantic link to what the child previously said (de Rivera et al., 2005).
Recipient Design	Communicating an orientation to the children as coparticipants (Sacks, Schegloff, & Jefferson, 1974).
Multimodal Resources	Using resources such as gestures, material objects, or children's home languages to support communication (Jurrow & Creighton, 2005).
Expansions/ Recasts	Repeating what the child said while making subtle changes to model target language (Rice & Hadley, 1995).
Teaching Participation	Direct instruction related to taking turns and how to talk with other children.
Tone	Using a higher-pitched or song-like tone.
Narrative	Telling stories about things that happened in the past.
Playful language	Using playful words. Using rhyming words.

Details were added to the transcripts of these episodes to better understand the communicative actions of the participants. The added details showed turn sequences, pauses, intonation, gaze, gestures, overlapping speech, and repeated speech. Multimodal resources, such as embodied actions (body language) and use of material objects were also included and analyzed.

Teacher Interviews. I conducted semi-structured interviews with the teachers in the five video recordings individually for approximately one hour to gain their perspective and confirm findings (Forman & McCormick, 1995). See Appendix C for

the interview protocols for each of the teachers. The interviews were audio recorded. During the interview, the teachers watched episodes of themselves having an IC with a small group of children in which the children were highly participatory. I asked the teachers to describe how they were encouraging children's participation, as well as follow-up questions about ICs with preschool aged children that were based on their responses. This methodology was influenced by the visual ethnography methodology described in Tobin, Wu and Davidson's (1989) book, *Preschool in Three Cultures*. Key parts of the interviews were transcribed and sent to the teachers to confirm accuracy.

Analysis of PPVT-4 and EVT-2. My fourth research question explored the relationship in my data between the level of teachers' IC enactment and their children's English language vocabulary outcomes. Initially, to answer this question, I ran a multivariate analysis of covariance (MANCOVA), using both the PPVT-4 and EVT-2 scores as my dependent variables. The covariate was age. My independent variables were DLL status (mono-English or DLL), gender, and teacher enactment level of IC. I determined the teachers' level of IC enactment by averaging their three IC scores from the video recordings and dividing the teachers into two groups, low enactors and high enactors. The internal consistency of the three scores was determined by looking at Cronbach's alpha and found to be acceptable at .74, justifying my use of the teachers' average IC score to determine my groups.

When I ran the MANCOVA, however, I observed in the profile plots that the PPVT-4 and EVT-2 were exhibiting different patterns so I decided to create two models to analyze the outcome measures separately. Analyzing the PPVT-4, which measures receptive English vocabulary, and EVT-2, a measure of expressive English vocabulary,

separately gave me a broader understanding of how IC enactment influences different components of English vocabulary development in children. Therefore, I conducted two separate 3-way between groups factorial analyses of covariance (ANCOVA). In my first model, the dependent variable was the children's PPVT-4 raw scores. In my second model, the dependent variable was the children's EVT-2 raw scores. Both models had the same three independent, categorical variables, gender (coded 0 for male and 1 for female), mono-English or DLL (0 for mono-English and 1 for DLL), and teachers' enactment level of IC (0 for low enactors and 1 for high enactors). I included age as a covariate to control for its influence on children's PPVT-4 and EVT-2 scores.

My Role as the Researcher

I have prior relationships with the Children's Center and the CREDE project. My daughter has been a student at the Center these past three years and a teacher in the videos being researched was one of my daughter's teachers. Also, for the past two years, I have been an instructional coach of teachers in preschool to Grade 3 classrooms using the CREDE Standards for Effective Pedagogy. Two of the teachers I coached also worked at the Children's Center. Furthermore, before becoming an instructional coach for the CREDE project, I taught second grade and participated in the CREDE professional development program. My experiences teaching and coaching using CREDE provided me with a deep understanding of the standards, such as IC. I have been providing workshops on CREDE as well as observing and giving targeted feedback to teachers regarding their use of IC and the other standards.

As a researcher, my relationship with the Children's Center, as well as my employment with the CREDE project could potentially lead to bias in that I may be

overly positive about teachers' enactment of IC or select teachers based on personal relationships. To guard against these biases, I used video recordings to analyze based off of two independent coders scoring on a rubric. Also, to promote the trustworthiness of my results, I used member checking by interviewing the teachers (Merriam, 2009). In addition, I also brought examples of my episodes to the Conversation Analysis Discussion Group to confirm my findings. The Conversation Analysis Discussion Group is made up of graduate students and professors trained to do conversation analysis and discourse analysis. Lastly, I found a counterexample of the strategies identified in my results.

CHAPTER 4

RESULTS

Included in this chapter are seven exemplar transcripts showing teacher actions that promoted preschool children's participation in ICs. For each exemplar, I highlight effective teacher actions that were indicated by high participation ratios of the children. Then, I present a counterexample. After that, I explain the pattern that emerged in the data of common teacher actions across the high scoring IC video recordings. Lastly, I describe the results of the quantitative analysis exploring the relationship between teachers' use of IC and children's English vocabulary acquisition as measured by the PPVT-4 and EVT-2.

IC Scores of Video Recordings

The coders scored only five of the 27 video recordings as “enacting” or “exemplary” on the ECE-7 rubric (Appendix B). The coders included notes on their coding sheets to justify their scores. The most frequently listed reason that video recordings did not score as “enacting” or “exemplary” was teachers and small groups of students not having the 1 to 1 verbal and non-verbal communication ratio of teacher-child turn-taking. Another frequently cited reason was that the interactions were too brief to be considered conversations.

Teacher Actions in High Scoring ICs

There were three different teachers in the five video recordings identified as having “enacting” or “exemplary” ICs. Table 3 lists the video recordings, the teachers' names, years of experience, ages of children in the recordings and the IC scores.

Table 3
Summary of High Scoring Video Recordings

Video Recording #	IC Score	Teacher's Name	Years of Teaching Experience	Ages of Children (years)
271	4	Rheta ¹	15	4-5
298	4	Rheta	15	4-5
262	5	Kristi	5	4-5
264	5	WenDee	16	2-3
295	5	WenDee	16	2-3

Following are the exemplar transcripts from my discourse analysis of the high-participation episodes. I considered taking verbal and non-verbal turns as indicators of high degrees of participation. There are examples below when the turn-taking sequence was teacher-child-child, not just teacher-child-teacher. Such sequences indicated that the children were taking a more directive role in the conversations and not depending on the teacher to lead the turn taking. Another indicator is when children stayed at an activity for an extended period of time. At the Children's Center, children are free to join and leave activities as they wish. In the following seven examples, the children stayed with the activities for at least 30 minutes. Furthermore, children in the following examples engaged in topic-continuing questioning, or questions that built off what was just said or done. Asking topic-continuing questions requires engagement and indicates the children considered themselves as coparticipants in the conversations. The teachers and children in these exemplars build off of one another's previous turns, showing mutual attention and engagement. Furthermore, in these examples, children mirrored the teachers' use of

¹ The teachers consented to using their real names.

multimodal resources, such as gesturing or code switching to the children's home languages. Such mirroring illustrated the children's uptake of the conversation.

For each of the following examples I first share the context and then the transcript. After each transcript, I highlight the indicators of high child participation followed by a description of the teacher actions that promoted children's participation in the ICs.

Example 1. In Example 1 Rheta, the teacher, was with a group of five children picking 'uki'uki berries to make dye. The children's names were, Ryan² (5-years-old), Mary (5-years-old), Bo (5-years-old), Nadia (4-years-old) and Joel (4-years-old). Just before this scene, Joel noticed the colorful 'ohi'a lehua blossom growing on a nearby tree and pointed them out to the group. In response, Rheta and the children started talking about the tree and a legend that if you pick the 'ohi'a lehua flowers, it will rain (Figure 3). Nadia, Bo and Joel are DLLs. (See Appendix A for a summary of transcription conventions.)



Figure 1. Rheta pointing out the blossom to the children.

² All the children's names are pseudonyms.

1 Rheta: 'Ohi'A:: (1.0) lehua. 'ohi'a lehua. ((points to a flower))
 2 So the story is (.) if you pick the flower,
 3 what will happen. =
 4 Ryan: =It was raining.
 5 Rheta: It'll ra::in. ((waves hand over head))
 6 It'll rain, so we always say (.) ↑ don't
 7 pick the flower, we don't want it to ra::in.
 8 Mary: I like rain.
 9 (1.5)
 10 Bo: Me too, let's pick it.
 11 (0.8)
 12 Rheta: Next time we'll do an 'ohi'a hunt, oka::y?
 13 (.) ((walks around the tree))
 14 Mary: An- and it will rain for real?
 15 Rheta: I don't know. Do you wanna test it out now?
 16 Mary: [Yah.
 17 Nadia: [Yah.
 18 (.)
 19 Rheta: Okay, let's pick the 'uki'ukis first ((bends down to berries))
 20 and then we'll test it out, okay? (0.5)
 21 We'll do an experiment.
 22 (.)
 23 Mary: °What is experiment?
 24 (.)
 25 Rheta: ((picking berries))
 26 Mary what is an experiment?
 27 (1.5)
 28 Rheta: Can the dinosaur group tell Mary
 29 what is an experiment?
 30 (1.5)
 31 Bo: Try it out, it will rain. ((raises hand))
 32 (.)
 33 Rheta: That's right, you try it out.
 34 You have an idea
 35 Children: ()
 36 Rheta: And then, ((picking berries))
 37 you want to <try it out and you test
 38 to see if your idea was [right or not.>
 39 Joel: [Wha- hey, does that
 40 make rain come down? ((points to flower))
 41 Rheta: That's our ex-, that's what the story said.

High ratio of child participation. This example had a high ratio of child participation from both native English speakers and DLLs. Bo and Joel, two DLLs in this example, took some of the longer, multiword turns. Bo, in Line 10 said, “Me too, let’s pick it” and in Line 31, “Try it out, it will rain.” Joel, in Line 39 asked, “Hey, does that make the rain come down?” Joel’s topic-continuing question shows his engagement in the conversation. Mary asked her own topic-continuing questions in Line 14 when she said, “It will rain for real?” and in Line 23, “What is experiment?” In Line 31 Bo raised his hand when he said “rain,” mirroring Rheta’s gesture when she said, “rain” in Line 5.

Teacher positioning herself as coparticipant. Rheta positioned herself as a coparticipant in the conversation and not as a teacher director. She did this by physically engaging in the activity of picking the berries with the children (Lines 19 and 25), placing herself as an equal member of the group, not an overseer. Rheta used plural pronouns throughout the conversation communicating that the activity, as well as the conversation, was collaborative (Lines 6, 7, 12, 19, 20, 21 and 41). In Lines 6 and 7 Rheta said, “we always say, don’t pick the flower, we don’t want it to rain.” Mary and Bo followed Rheta’s Line 7 giving their opinions, with Mary saying, “I like the rain” and Bo following with, “Me too, let’s pick it.” Mary and Bo’s responses show that they saw themselves as collaborators in the activity and the conversation.

Teacher responsiveness. The interaction in Example 1 was in response to Joel pointing out the ‘ohi’a lehua flower to the group as they picked the ‘uki‘uki berries. Rheta’s moving the conversation to a discussion about the flower in response to Joel’s comment communicated to the group that the children had equal power in terms of the direction of the conversation. Later, Bo, in Line 10, took a turn and made his own

suggestion to direct the activity saying, “Me too, let’s pick it.” Mary, in Line 23 asked a question that shifted the conversation asking, “What is an experiment,” which Rheta responded to by asking the group to come up with a definition. In this example, Joel, Bo, and Mary all influenced the direction of the conversation suggesting they had equal conversational power.

Rheta’s responsiveness to Mary’s question in Lines 14-21 also showed shared conversational power. Rheta suggested a future action based on what Mary said. Mary asked in Line 14, “It will rain for real?” and Rheta responded on Line 15, “I don’t know. Do you wanna test it out now?” Followed by Mary and Nadia in Lines 16 and 17 saying, “Yah.” Later in the transcript, Rheta followed through on the suggestion and picked a flower (Figure 4). These examples show that Rheta was not sticking to her original teacher’s agenda, but allowing the conversation to flow in response to the children’s contributions. Her uptake and use of the children’s input, such as her response to Mary’s question in Line 23 asking for clarification on what is an experiment, was not only good for maintaining the flow of the conversation, but also facilitated a group discussion on an important school concept, experimentation. Furthermore, Rheta’s responsiveness reinforced the children to ask their own questions and probably helped motivate all the children to participate.

Teacher’s use of questioning. Rheta used a combination of open-ended and closed-ended questions. Her questions were topic-continuing, or built off of the previous child’s comments, such as in Line 15 when she asked the group if they wanted to pick the flower, responding to Mary’s question in Line 14 if it would really rain. Rheta did not ask repeated questions. She combined questions with comments and her questions were

not overly complex but still encouraged deeper level understanding of the topic, such as in Line 28 when she facilitated the discussion on the meaning of the word experiment. Bo responded to Rheta's question, "What is an experiment" (Line 29) by saying, "Try it out, it will rain" (Line 30). Rheta expanded Bo's comment saying, "That's right, you try it out. You have an idea and then you want to try it out and you test to see if your idea was right or not" (Lines 33-38). Rheta's response validated Bo's contribution while giving the group a more complete definition of what experiment meant. This example shows how Rheta used questions to invite the children to participate and share their thinking in the conversation. She also was rewarding the children who asked questions and attempted answers by focusing her attention on them and integrating their answers into the conversation.

Example 2. Later, in the same video recording as Example 1, Rheta, Kaito (4-years-old), Kaeden (4-years-old) and Cameron (4-years-old) were sitting together at a table painting fabric using the dye made from the 'uki'uki berries. Kaito was to the right of Rheta, Cameron to the right of Kaito, and Kaeden to the right of Cameron (Figure 4). Kaito was a DLL and for the 30 minutes preceding this clip, he did not participate in the conversation. Just before this interaction, Rheta asked Kaito to come sit close to her.

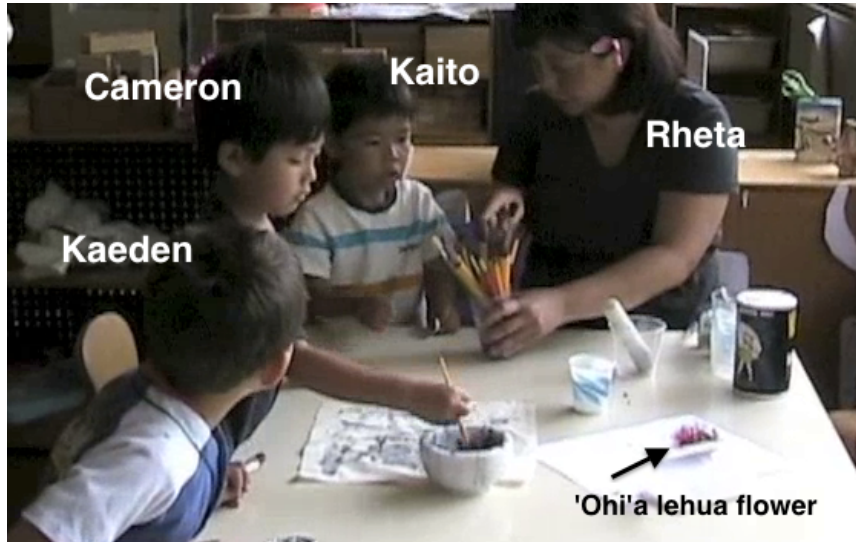


Figure 2. Rheta pointing to the paintbrush. The 'ohi'a lehua flower from Example 1 is laying on the paper to the right of the paint container.

- 1 Rheta: Kaito? Kaito? ((picks up can of brushes))
- 2 (.)
- 3 → Rheta: Do you want a paintbrush? ((moves Kaito's chair closer))
- 4 (1.8)
- 5 Rheta: Paintbrush? ((points to a brush)) [Figure 4]
- 6 (3.8)
- 7 Kaito: ((grabs a brush))
- 8 Rheta: ((puts brush container on table))
- 9 And then Cameron, ((moves paint container toward Kaito))
- 10 I'm gonna move it down so (.) that Kaito can reach too.
- 11 (5.5)
- 12 → Kaito: ((puts paint on his brush))
- 13 Cameron: ((paints the fabric))
- 14 Kaeden: ((paints the fabric))
- 15 → Rheta: [Kaeden shall I put more paint on yours?
- 16 ((reaches toward Kaeden))
- 17 Cameron: [I'm done
- 18 Rheta: Are you done? Cameron you can wash your brush.
- 19 ((takes Kaeden's brush and adds paint))
- 20 (2.1)
- 21 Cameron: ((walks away with his brush))
- 22 → Kaeden: I switched chairs = ((moves to chair next to Kaito))
- 23 → Rheta: = Okay here you go. ((hands brush to Kaeden))
- 24 (2.0)

25 → Rheta: I think I'm gonna try also. = ((gets brush from container)) [Figure 5]



Figure 3. Rheta participates in the activity with Kaito and Kaeden.

26 → Kaito: = Kore nani ireta? ((‘what did you put in this?’))
 27 → Rheta: Uhh (.) hmm ((makes small circle with fingers on left hand))
 28 ‘uki’uki berry. ((lifts hand towards Kaito and looks at him))
 29 Berry. (2.0) ((moves hand down with fingers in small circle))
 30 Kaito: ((points into the paint container))
 31 Rheta: Hmm (.) ((nods head up and down)) it’s a berry.
 32 (1.5)
 33 Kaito: ((scratches head with left hand))
 34 → Rheta: And then we smash, smash, smash, smash, smash. (0.5)
 35 → ((left hand fist on table four times as she says smash)) [Figure 6]
 36 → And then we made this. ((holds up paint brush in front of Kaito))
 37 (3.1)



Figure 4. Rheta making smashing motion in Line 34.

- 38 → Kaeden: That's how you dye colors. ((painting the fabric))
- 39 → Rheta: Let me show you Kaito. ((picks up camera))
- 40 (2.0)
- 41 Rheta I took a picture of the 'uki'uki berries
- 42 ((holds camera in front of Kaito)
- 43 so you, you can [see what it is. =
- 44 Kaeden: [Can I see? ((stands up and leans forward))
- 45 Rheta: See. Koko, koko ((‘here, here’)) ((points towards camera))
- 46 ‘uki’uki (.) berry. (.) ((makes small circle with fingers on right hand))
- 47 you pick (1.5) ((makes up and down picking motion with right hand))
- 48 from the plant
- 49 → Kaito: Tabereru? ((‘can you eat it?’))
- 50 Rheta: No. Tabenasai, ((‘please eat’)) ((shakes right hand left to right))
- 51 n-, uh, don't eat it. (1.0) ((shakes right hand left to right))
- 52 → Kaito: Taberen? ((‘can't eat it?’)) ((paints the fabric))
- 53 Rheta: Yah.
- 54 (2.5)
- 55 → Kaeden: Don't eat. ((adds paint to his brush))

High ratio of child participation. As with Example 1, Example 2 was selected because it had a significant amount of child participation, especially by a DLL, Kaito. Prior to this clip, Kaito had been sitting and observing the interaction, but not participating. In this clip, he physically participated in the activity (Line 12) and verbally participated by asking a topic-continuing question in Line 26, “Kore nani ireta (what did

you put in this?)” Rheta then employed a variety of multimodal resources (gestures, material objects, and Kaito’s home language) to respond to his question. Kaito continued to have increased participation in Line 49 when he asked, “Tabereru (can you eat it?)” He clarified and corrected Rheta’s response in Lines 50 and 51 about not eating the berries saying, “Taberen (‘can’t eat it?)” in Line 52. Rheta took specific teacher actions just prior to Kaito’s increased participation that I outline below.

Teacher positioning herself as coparticipant. As with Example 1, Rheta physically engaged in the painting activity along-side the children (Figure 5) and presented herself as a collaborator. In Line 25 she said, “I think I’m gonna try also.” Kaito responded by taking his first verbal turn in the very next line. He asked, “Kore nani ireta (what did you put in this?)” (Line 26).

Rheta did not present herself in this conversation as the teacher director. Her words and actions reflected collaboration. In Lines 34 and 35 she said, “we smash, smash, smash...” and “we made this.” At which point Kaeden contributed saying, “That’s how you dye colors” (Line 36) indicating his positioning as a coparticipant as well.

Teacher’s use of multimodal resources. Throughout this example, Rheta used multimodal resources to engage the children, especially Kaito. For example, she gestured in Line 3 when she pointed at a paintbrush and asked Kaito if he wanted one (Figure 4). Rheta gestured the shape of a berry in Line 27 to answer Kaito’s question about what was in the container and made a smashing motion with her fists in Line 35 to communicate how the group made the dye from the berries. She used her camera as an important visual tool to communicate. In Line 39 she said, “Let me show you, Kaito” and

presented him a picture of the berries on her camera. Rheta also integrated Japanese, Kaito's home language, as a resource to communicate and respond to Kaito's questions. In Line 45 Rheta said, "See. Koko, koko ('here, here')." Kaito responded by taking the next turn in Line 49, "Tabereru (can you eat it?)" Rheta's use of multimodal resources, such as Kaito's home language and the camera, her positioning him directly next to her and the frequent use of his name are all examples of employing recipient design or displaying sensitivity to Kaito's personal characteristics and background knowledge. Her use of recipient design opened up opportunities for Kaito to participate, to which he was very responsive.

Teacher's use of questioning. Rheta used closed-ended questions to invite the children to participate in the activity. In Line 3 she asked Kaito, "Do you want a paintbrush?" and moved his chair closer to hers. She did a similar action in Line 15 asking, "Kaeden, shall I put more paint on yours?" Both of the questions were topic-continuing which built off the previous turn. Both Kaito and Kaeden increased their engagement in the activity and conversation after Rheta's questions. Kaito started painting along with his peers and started asking his own questions (Lines 12, 26, 49 and 52). Kaeden moved closer to Kaito saying, "I switched chairs" (Line 22). Subsequently, Kaeden took a more active role in the instructional nature of the conversation. In Line 38 he said, "That's how you dye colors" and after Line 55 he said, "Don't eat."

Rheta's interview. During our interview, Rheta and I watched clips from her video recordings and she answered questions about ways she encouraged children to participate in her high scoring ICs. Rheta emphasized being highly observant and "in tune" with the children (R. Kuwahara, personal communication, April 24, 2003). She

said to have a successful IC, teachers need to be, “Present and reading the kids.”

According to Rheta, to effectively converse with children, teachers need to be “smooth” with their conversations and have the right “timing” while being careful to not be too intrusive.

Rheta described that it is important for teachers to help children feel relaxed and confident about the activity during an IC. She said, “I try to make them feel comfortable so they can share their thoughts.” For example, when reflecting on the Example 2 where she is painting with Kaito and Kaeden, Rheta said:

I can remember thinking that I’m going to be painting with them instead of standing up and saying, “Okay, here’s your paper. Get your brushes. All of you paint,” like a stereotypical traditional teacher. I was aiming for an intimate and interactive [experience]. “Let’s all get in there and do this together.” We could have a shared experience with me, a teacher, as an active participant. For Kaito to participate in this activity, I knew I would have to be a part of the experience. If I encouraged him from the sidelines and said, “Go ahead, paint! No, no try just do it.” He wouldn’t have done it. For Kaito, I was his vehicle to engage with the activity and participate with other children.

Being a coparticipant in the activity was an important strategy to promote the children’s engagement. Later in our interview, Rheta discussed how her activity design impacted children’s participation in her ICs. She said,

If there is a personal context there for the students, I try to draw upon that experience first. For some activities or concepts, it is not easy to find a common context for all children to discuss as the launching point. Sometimes, the children

have never experienced some of the things we were going to discuss. Then, I emphasize creating the shared experience for the small group of children during the joint productive activity. That shared experience then becomes a common context for the children to then draw upon for ideas and discussions.

Having a shared experience with the children was the base of her conversations. The shared experience could later be used to facilitate the children's complex thinking. She said, "They [the children] have to have an experience [first] in order to [be able to] analyze it later." According to Rheta, it is important to present an activity, let the children explore it and then ask questions in as authentic a way as possible. She talked about asking 'why' questions only after the children have had ample opportunities to explore and be "with a concept." Otherwise, she said, "Asking the why questions can appear to not be authentic, like we're using someone else's words."

Lastly, Rheta discussed that a measure of success for her when facilitating an IC was when the children started asking their own questions. She said that when children started asking their own questions, "The conversation became reciprocal and natural. When that didn't happen, it got uncomfortable for me as a teacher. It was a one way dialogue rather than a true discussion of ideas or delving into the concept."

Example 3. Example 3 is an IC between Kristi, the teacher, and two of her students, Zane (3-year-old) and Heidi (4-year-old). Heidi was a DLL. They were sitting around a circle table (Figure 7). Kristi was to the left of Zane and Heidi was to the right of Zane. Three large plastic containers filled with colored water were on the table. Small boats made from milk boxes were floating in the containers. Just before this example,

Kristi suggested that they try to see if seashells float. Zane and Heidi went to get the shells and Zane dropped a shell into the water.



Figure 5. Kristi pointing to the floating shell (Line 19).

- | | | |
|------|---------|---|
| 1 | Zane: | It si::nk. |
| 2 | Kristi: | It <u>sank</u> ? |
| 3 | | (0.5) |
| 4 | Zane: | Ah ha |
| 5 | Heidi: | ((drops a shell in the water)) |
| 6 → | Kristi: | <u>Oh::</u> they're all <u>sinking</u> . ((reaches in the water)) |
| 7 | | (2.0) |
| 8 | Zane: | [((reaches in the water)) |
| 9 | Heidi: | [((lifts shell out of water and drops)) |
| 10 → | Kristi: | Is there a way that we could- ((holds up shell)) |
| 11 → | | cuz <u>doesn't</u> this look like a <u>boat</u> ? |
| 12 | | (.) |
| 13 → | Heidi: | Look, mine's floating. |
| 14 | | [I help it float ((skims shell on water surface)) |
| 15 → | Kristi: | [Doesn't this look like a <u>boat</u> ? ((lays shell on water surface)) |
| 16 | Heidi: | °Yeah. |
| 17 | | (2.0) |
| 18 | Zane: | ((smiling and looking at Kristi's hand)) |
| 19 | Kristi: | <u>Look</u> Zane. ((points to shell)) [Figure 7] |
| 20 | | (1.5) |
| 21 | Zane: | ((reaches for the shell)) |
| 22 | Kristi: | I made it <u>float</u> . |

23 Zane: ((pulls hand away looking at the shell))
 24 → Kristi: How come when you put it in it sank?
 25 (3.2)
 26 Zane: ((holds up shell and puts it back on water surface))
 27 It's ↑ doing it ↑
 28 Heidi: ((empties water out from her shell))
 29 Kristi: ((lifts up Zane's shell and turns it over))
 30 → Try put it in upside down. Put it this way.
 31 (1.5)
 32 ((hands shell to Zane))
 33 Zane: ((takes shell and drops it in the water upside down))
 34 Zane: Sink
 35 → Kristi: How come? ((singing voice))

High ratio of child participation. In this clip, Zane and Heidi were highly engaged and responsive to Kristi's suggestions. Just before this transcript, both children moved from experimenting with boats to using the shells in response to Kristi asking, "How about the shells?" When Kristi suggested the link between the shells and the boats in Line 11 saying, "Doesn't this look like a boat?" both children started using the shells like boats and made related comments. Heidi, in Lines 13 and 14 said, "Look mine's floating. I help it float," as she moved the shell on the water's surface like a boat. Kristi showed Zane how to make a shell float in Line 22. Zane went to pick up the shell, but instead took some time watching it float. With Kristi's encouragement in Line 24, Zane experimented with making the shell float and enthusiastically said in Line 27, "It's doing it" as it stayed on the water's surface.

Teacher positioning herself as coparticipant. Throughout this recording, Kristi sat next to the children and participated in the activity along with them, experimenting to see how things sank and floated. She engaged in the experimentation and guided the children towards discovering why some things float and some sink, but she did not dominate the conversation. Her coparticipant status can be seen in Line 6 by the way she

physically engaged in the activity. She reached into the water saying, “Oh, they are sinking,” in reference to the shells. In Lines 10 and 11 she asked, “Is there a way that *we* could- doesn’t this look like a boat?” while holding up the shell. By using the plural pronoun “we” she projected that she and the children were experimenting together. As a result, the children took a more active role in the experiment and conversation.

Teacher’s use of questioning. Kristi used a combination of closed-ended and open-ended questions. An example of a closed-ended question is Line 15 when she asked, “Doesn’t this look like a boat?” An open-ended question can be seen in Line 24 when she asked, “How come when you put it in it sank?” Her questions invited the children to take turns in the conversation. The questions also assisted the children to think about the activity in a more complex way in terms of *why* things sink and float.

Kristi asked the children about their views, judgments and rationales (such as in Lines 24 and 35) while maintaining their participation. Zane non-verbally responded to Kristi’s question, “How come when you put it in it sank?” (Line 24) by making the shell float. When Zane did not verbally respond to the question, Kristi did not immediately repeat it. Instead, she assisted his discovery of the answer by encouraging him to flip the shell over in Line 30 saying, “Try put it in upside down. Put it this way.” Zane put the shell upside down in Line 33 and then in Line 34 he said, “Sink,” which Kristi responded to by asking in a playful, sing-song tone, “How come?” (Line 35).

Example 4. Later in the same video recording as Example 3, Zane, Heidi and Kristi experimented with making a plastic bag float. Just before this interaction, Kristi got a plastic Ziploc bag and blew it up with air (Figure 8).



Figure 6. Zane pushing down on the plastic bag.

- 1 Kristi: It's like a balloon. ((blows into bag))
- 2 (2.5)
- 3 → Zane: What's it going to do?
- 4 (.)
- 5 Are you going to put it in here?
- 6 (1.8)
- 7 → Kristi: What's going to happen to it?
- 8 ((sealing the bag closed))
- 9 → Zane: It's gonna float.
- 10 → Kristi: You think it's going to float? ((floats bag on water's surface))
- 11 (1.5)
- 12 → How are, how can we make it sink? ((leans forward))
- 13 (1.7)
- 14 → Zane: ((pushes down on bag)) [Figure 8]
- 15 Get all the air out. ((lifts bag up))

16 → Kristi: Get all the air out? Let's try.
 17 (5.2)
 18 → Zane: ((opens bag)) (°I got to try to do this°)
 19 Kristi: And then what.
 20 (1.0)
 21 Zane: [((pushes bag down into the water))
 22 Heidi: [°Into the water°
 23 Kristi: If you fill up the ba::g ((reaches in opens bag))
 24 (2.0)
 25 with (1.8) ↑ water. ((fills bag with water))
 26 (0.8)
 27 Heidi: ((stops playing with shells and gazes toward bag))
 28 Kristi: [What's going to happen?
 29 → Heidi: [The shells going in. ((puts a shell in the bag))
 30 (1.0)
 31 Kristi: Oh (.) and put a shell in there. ((holds bag open))
 32 (.)
 33 Heidi: Yah. ((lifts shell out of the bag))
 34 (3.5)
 35 → Zane: What is it going do?
 36 Kristi: Wha- what is it going to do? ((sealing bag closed))
 37 (.)
 38 Heidi: ((drops shell in water, walks to Kristi))
 39 Zane: ↑ I don't know.
 40 (3.0)
 41 Kristi: Wait I gotta zip it up. ((seals bag closed))
 42 Heidi: ((picks up penny from table and walks back to original spot))
 43 → I think the air's going get trapped-
 44 the air's going get trapped in. =
 45 ((puts hand with penny in the water))
 46 → Kristi: =Ok (.) let's see what happens. ((holds up the bag))
 47 (0.7)
 48 Zane: I'll put it in. ((takes bag and releases it into the water)) [Figure 9]
 49 (1.0)



Figure 7. Seeing if the full bag will sink.

- 50 Kristi: What happened?
 51 (2.0)
 52 Zane: °Sa::nk. ((lifts bag back out of the water and drops it again))

High ratio of child participation. This interaction shows the children asking their own topic-continuing questions and taking multiword turns related to the activity. At first, it appeared that Heidi was not participating as Zane and Kristi interacted with the bag. Heidi was playing with the shells in the water. However, her head movement indicated that she was following along with Kristi and Zane's interaction and in Line 29, she took a turn by suggesting they put shells in the bag. In Line 43 Heidi shared her views saying, "I think the air's going get trapped- the air's going get trapped in." Although she was not verbally contributing as much as Zane, Lines 29 and 43 show she was engaged and remained a coparticipant in the activity.

Zane took several multiword turns in this example and asked topic-continuing questions. In Lines 3 to 6 he asked, "What's it going to do? Are you going to put it in

here?” In Line 18 he said, “I got to try to do this.” As with Heidi in Line 43, Zane responded to Kristi’s questions and stated his judgments about the bag in Line 9, “It’s gonna float,” and shared that they needed to, “get all the air out” (Lines 14-15).

Teacher positioning herself as coparticipant. Kristi communicated a collaborative stance by saying in Line 12, “How can *we* make it sink?” and in Line 16, “Get all the air out? *Let’s* try.” Her use of plural pronouns and responsiveness to the children’s suggestions illustrates how Kristi positioned herself as a coparticipant.

Teacher’s use of questioning. As with Example 3, Kristi used a combination of open and closed-ended questions to encourage the children to take turns and share their thoughts. The questions expanded off the children’s comments and questions. The exchange between Kristi and Zane in Lines 7 to 16 showed how she encouraged the children to participate and assisted their developing understanding of buoyancy. For example, in Line 7 she asked, “What’s going to happen to it?” Zane responded in Line 8, “It’s gonna float.” Kristi expanded Zane’s comment saying, “You think it’s going to float? How can we make it sink?” (Lines 10-12). Zane said in Line 15, “Get all the air out” which was followed by Kristi, “Let’s try” (Line 16). Kristi facilitated the on-going conversation by asking appropriate questions. She did not judge Zane’s responses by saying, “Yes, that’s right” or “No, that’s wrong” but gently pushed the conversation on to promote his experimentation, which supported his cognitive development and high degree of participation.

Kristi’s interview. Kristi and I met for approximately an hour. We watched her video clips and discussed ways she encouraged the children to participate in her ICs.

Kristi emphasized getting to know her children well and “gearing” conversations based on that knowledge in order to promote their participation. She said,

I know where their ability is or how verbal they are and then I can gear the conversation for that child. I pick up on things that I know they are interested in and get them more into the activity and wanting to talk with me and sharing their ideas (K. Kawahara-Xu, personal communications, July 3, 2013).

Related to her comment about “gearing” ICs to children, Kristi said, “We have a goal and an idea and we kind of flow with the children.” She talked about not “over-thinking” a plan for IC and being able to “go with the children” better.

Kristi believes that in order to get children talking in an IC they have to feel comfortable with her first. She emphasized it is important to have strong relationships with the children to encourage their participation in ICs. She said, “It was about building up the relationship. Getting the kids to trust and be comfortable.”

Kristi also talked about the importance of working with children in small groups to get DLL and less verbal children participating. She said she would, “mix up the abilities in the group so have a highly verbal child with a non-verbal child or dual language child so they can model for each other. The one that can verbalize can model for the ones who can’t speak.” She also mentioned that with DLLs she asks more “yes and no questions” to support their participation. She said, “Then with the children who can talk, more open-ended questions like, ‘what do you think it will do?’ and ‘why do you think that?’” Later she said, “If they don’t seem to understand and they are not answering a question, I try to think of another way to say it or explain what a word means, because maybe I don’t realize they don’t understand.”

Related to her clips with Zane and Heidi and how she encouraged their participation Kristi said,

I think I was asking them an open-ended question, which they were not responding, so I gave them ideas to use and to try out so getting them to do the hands-on instead of just sitting at group time. Having them try it out as well and then doing different objects trying to teach them about why it's sinking or why it's floating. So doing it different ways and also showing them too. I think I was trying to get them to answer it and they were not answering so being able to step in and say, "okay, let's try this" and then, "why do you think that happened?"

Kristi believes the sink and float activity worked so well because the children had the sensory experience and all the objects there in front of them. She believes that when asking more complex questions, such as ones that get at children's views, judgments and rationales, it is important for the children to have had a tangible experience to go along with the question.

In terms of asking "why" questions or questions geared directly at children's views, judgments and rationales, Kristi saw the value as a tool for modeling and focusing children's thinking, but she also has observed that young children have difficulty answering these types of questions. She said,

It's very hard for the children to explain why they think a certain thing. A lot of times when I ask, "Why did you say that?" the conversation ends. And then I move on to something else. I think it's too abstract for them at this age if it's not tangible it's harder for them to grasp and answer it. So a lot of times the conversation ends with that [views, judgments, and rationales question]... It's

good to get them familiar with that type of thinking too, but it's harder at this age to question their judgments or their views. They usually say, "Just because" or "my mom said so."

Kristi does see the value of asking "why" questions, although they do seem to stifle children's participation rates. She said, "It's good to get them to think about why and not just take things at face value. It's a way to get them to think further about things, not just because she [the teacher] said so, but maybe because we're going to find something new and experience that." Kristi also said she uses "why" questions during ICs for assessment,

Questioning can be for me to understand what they are doing or for them to realize they are doing something. So it's like, "Oh I see you're doing this. Why are you doing that?" Maybe a lot of times they're just doing something and not putting the thought into it so it's, "Why are you doing that?" or "I see you're putting more pennies in" and seeing if they can express their ideas as well.

Kristi believes questions can invite children into an activity and capture their attention. She said,

I think questioning helps bring them [the children] into the activity. I think it helps them focus, especially the younger ones. The biggest reason I use questioning is getting them to refocus and getting them to think about their actions. It's a way to get them involved in the discussion and state their ideas.

Valuing children's ideas in ICs was something Kristi mentioned several times throughout our interview. Kristi talked about the importance of communicating that, "It is okay if the answer is not right and exploring why it was not right and seeing their thinking about

that.” She emphasized modeling for the children during IC that it’s okay to give wrong answers and learning from it.

Example 5. In Example 5, the teacher, WenDee, was having a conversation with three children, Josh (3-years-old and a DLL), Tiff (3-years-old) and Rosa (3-years-old). WenDee informed me during our interview that Rosa was hearing-impaired. Before this scene, WenDee and the children had been sitting together on a couch reading a book about baking pretzels. During the following interaction, WenDee and Tiff were sitting on the couch (Figure 10). WenDee had the book open on her lap in front of her. Josh was sitting on a basket in front of WenDee. Rosa was standing to the right of Tiff.



Figure 8. WenDee asking the children if they bake at home.

- 1 WenDee: Do you bake at ↑ home? ((opens left hand toward Josh)
- 2 (1.8)
- 3 Josh: ((nods head up and down))
- 4 WenDee: ((flips pages of the book with right hand))
- 5 With your mommy or your daddy? (2.8)
- 6 Josh: (°) (1.2)
- 7 WenDee: With who? ((leans forward towards Josh)
- 8 (0.9)
- 9 [Mommy?
- 10 Josh: [(°)
- 11 WenDee: Mommy?
- 12 Josh: °Daddy
- 13 WenDee: Daddy? ((leans forward and touches Josh’s foot with left hand))
- 14 You bake with your daddy? ((shakes head and leans backwards))

15 (.)
 16 WenDee: Ohh:: [and what do you make?
 17 Tiff: [Mommy, MOmmy
 18 WenDee: [Josh, what do you make?
 19 Tiff: [MOmmy MA::.
 20 (1.8)
 21 WenDee: ((turns to look at Tiff pointing towards her with left thumb))
 22 >You bake with your mommy?<
 23 (.)
 24 Tiff: Ya::h ((smiling))
 25 WenDee: Ohh, what do you make with your mom?
 26 (.)
 27 WenDee: Do you make pretzels? ((flips a page in the book))
 28 (1.2)
 29 Tiff: Yah ((looking down at the book))
 30 (2.5)
 31 → Rosa: [°Daddy
 32 WenDee: [Do you make bread?
 33 °hhh ((looks to Rosa raising eyebrows))
 34 → You, <you bake with your ↑ daddy? >
 35 ((leans forward, raises eyebrows and smiles))
 36 Rosa: Yah ((moving her fingers on a pink hat she is holding in front of her))
 37 WenDee: Ya::h? ((smiley voice))
 38 → Tiff: Pretzels
 39 Rosa: [(°) ((steps backwards))
 40 → WenDee: [Pretzels? Shall we make ↑ pretzels?
 41 Tiff: [Pretzels.
 42 Tiff: Yah
 43 WenDee: K, let's go. ((folds book))
 44 → Let's go make some pretzels. (.)
 45 → Let's go make some pretzels. ((stands up))

High ratio of child participation. This small group of three-year-olds was listening to one another and took turns speaking and gesturing in response to WenDee's questions. The children's gaze indicated their engagement in this conversation. As can be seen in Figure 10, all three of the children were gazing at WenDee as she asked questions.

Teacher positioning herself as coparticipant. Like Rheta and Kristi in the previous examples, WenDee used plural pronouns to establish that the activity was collaborative such as in Line 40, “Shall *we* make pretzels?” and Line 44, “*Let’s* go make some pretzels.” WenDee presented the activity as something the children already did at home with their moms or dads, communicating the expectation that they would be able to contribute.

Teacher responsiveness. Throughout this example, WenDee paused, listened, and expanded on the children’s utterances, modeling language use and validating the children’s contributions to the conversation. For example, in Line 38 Tiff said, “Pretzels.” WenDee expanded on Tiff’s utterance in Line 40 saying, “Pretzels? Shall we make pretzels?” and in Lines 44-45, “Let’s go make pretzels. Let’s go make some pretzels.”

Teacher’s use of questioning. In this example, WenDee used closed-ended questions that were personally relevant to the children. She initiated the conversation in Lines 1 and 5, “Do you bake at home? With mommy or daddy?” WenDee assisted the children to answer her questions by modeling responses through her expansions. For example in Line 31 Rosa softly says, “Daddy,” which WenDee immediately responded to in Line 34 saying, “You bake with your daddy?” while leaning towards Rosa, raising her eyebrows, smiling and nodding. WenDee’s body language encouraged the children to respond to her questions.

Example 6. Example 6 took place later in the same video recording as Example 5. WenDee and Tiff were sitting next to one another at a table, mixing things to make pretzels (Figure 11). Rosa was standing on the other side of the table gazing towards

WenDee and Josh. Just before this interaction, Josh asked to taste the sugar which WenDee facilitated giving him a plastic spoon with some sugar. At the beginning of Example 6, WenDee was helping Josh pour salt into the pretzel mixture.



Figure 9. WenDee and the Children discussing the dry ingredients.

- 1 → Josh: What kind (.) I wanna taste salt ().
- 2 → ((right hand holding measuring spoon guided by WenDee's
- 3 right hand scooping out salt from silver container))
- 4 WenDee: You wanna, what do you wanna taste?
- 5 ((joined hands with measuring spoon over the bowl))
- 6 (3.1)
- 7 WenDee: ((guides Josh's hand to start dumping salt in the bowl))
- 8 The salt? (.) You [wanna taste the salt?
- 9 Tiff: [Sugar. ((looking into the bowl))
- 10 (1.8)
- 11 WenDee: Dump it ↑ o::ut (2.)
- 12 → ((guides Josh to dump the rest of the salt in the bowl))
- 13 Tiff: Sugar=
- 14 WenDee: =Look closely. What do you see? ((looks and points into the bowl))
- 15 (.)
- 16 → Josh: I see ss- (.) salt (.) an::d flours. ((looks into the bowl and points))
- 17 WenDee: Salt, <you see salt (.) ((pointing into the bowl))
- 18 and you see flour> and what else?
- 19 ((turns hand palm up towards bowl))
- 20 (1.8)
- 21 Tiff: ((points into the bowl))
- 22 WenDee: Do you remember what that was?
- 23 (.)

24 Josh: Yah
 25 Tiff: Sugar
 26 Josh: Sugar
 27 → WenDee: Sugar. Do they look the same
 28 or do they look different?
 29 ((moves her finger in circle motion around the bowl))
 30 (.)
 31 Josh: Different. (looking into the bowl))
 32 Tiff: ((touches the dry ingredients in the bowl))
 33 WenDee: Differ::ent. (.)
 34 → How many different things ((lifts up Tiff's hand))
 35 → do we have in there? (.) Look, let's count.
 36 (1.5)
 37 Tiff: Three ((turns hand face up holding out four fingers))
 38 WenDee: Three = ((turns hand face up and looks at Tiff))
 39 → = ↑ How did you know it was three?
 40 (1.2)
 41 → Josh: ((moving his right fingers in a counting motion assisted by left hand))
 42 → Tiff: Four =
 43 → WenDee: = Let's count it. Let's count it. ((points at dry ingredients))
 44 (0.8)
 45 You said salt ((holds out one finger with left hand))
 46 (2.1)
 47 Josh: S:: (.) salt ((holds out one finger with right hand))
 48 (.)
 49 WenDee: And then <flour>. ((holds out two fingers with left hand))
 50 Josh: Flo:ur ((holds out two fingers with right hand))
 51 Tiff: ((holds out two fingers with left hand))
 52 WenDee: And what is this one again Tiff? ((points towards ingredients))
 53 (.)
 54 Tiff: Sugar
 55 → WenDee: Sugar, how many do we have? ((holds up three fingers))
 56 (1.2)
 57 → Josh: ((holds up three fingers and touches WenDee's three fingers))
 58 WenDee: °hh I have the same as you. ((smiley voice))
 59 ((touches Josh's three fingers and moves hands back and forth))



Figure 10. Counting the dry ingredients.

- 60 Josh: ((touches right three fingers with left hand)) (Figure 12)
 61 Tiff: ((holds up three fingers with her left hand))
 61 → WenDee: How many do we have? (1.2)
 62 → How many do we have?
 63 ((holds up Tiff's left hand from the bowl))
 64 → WenDee: One, two, thre::e ((holds Tiff's hand and points to fingers))
 65 different ingredients in ther::e.
 66 Josh: ((continues to hold up three fingers))
 67 → WenDee: And they look different Josh said.

High ratio of child participation. Josh, who speaks two languages, took multiword turns in this example and both children exhibited many non-verbal actions, such as pointing and counting with their hands that directly related to the conversation and activity. Josh said in Line 1, “What kind. I wanna taste salt” and in Line 16, “I see

salt and flours.” Josh and Tiff took multiple non-verbal turns and mirror WenDee’s hand movements demonstrating their uptake of what she was saying and doing (Figure 12). The counting interaction in Lines 41-55 illustrated their engagement and use of their hands to help them communicate.

Teacher positioning herself as coparticipant. Throughout this video recording, WenDee was engaged in the cooking activity along with the children. She assisted them to physically participate by guiding the children’s hands to measure and pour the ingredients (Lines 2 and 12). WenDee used plural pronouns throughout this example, such as in Line 34 when she asked, “How many different things do *we* have in there? Look, *let’s* count” while pointing to the bowl. She continued to repeat using “*we*” in Lines 55, 61 and 62. The plural pronouns sent the message to Josh and Tiff that they were working and talking together as equals.

Teacher’s responsiveness. This transcript showed WenDee being highly responsive to Josh and Tiff. In Line 14 WenDee said, “Look closely, what do you see?” in reference to the ingredients in the bowl. She was responding to Josh and Tiff’s conversational turns in which they were talking about salt and sugar (Lines 1 and 13). WenDee expanded on the children’s expressed interests in salt and sugar validating their contributions and encouraging them to discuss more complex topics. For example the group discussed contrasting flour, sugar and salt (Lines 27 and 28). WenDee also modeled how to verbally and non-verbally describe their rationales for saying there were three different “things” in the bowl (Lines 41-67).

Teacher’s use of multimodal resources. The counting interaction in Lines 41-55 shows WenDee, Josh and Tiff using multimodal resources to communicate. WenDee’s

actions in these lines engaged the children and supported their thinking. For example, in Line 42, Tiff said “four” in response to WenDee’s question in Line 35, “How many different things do we have in there?” although she initially said three. WenDee responded to Tiff and took the opportunity to assist her and Jason in developing their ability to count and explain their thinking. WenDee asked in Line 39, “How did you know it was three?” (an open-ended question getting at Tiff’s views, judgments and rationales). After a brief pause and Tiff’s incorrect response in Line 40, “Four”, WenDee said, “Let’s count it. Let’s count it” and started to hold up her fingers, an action that both children mirrored. In Line 57 Josh touched his three fingers to WenDee’s matching three fingers and WenDee said, “I have the same as you,” while smiling at Josh.

Teacher’s use of questioning. As mentioned above, WenDee asked an open-ended question getting at the children’s views, judgments and rationales in Line 39, “How did you know it was three?” Afterwards she paused and then supported the children to answer. It is significant that she did not repeat the same question over again when the children did not answer. Also, she did not offer judgment to the children’s responses, but guided them to answering correctly and modeled a way to justify their thinking by counting out the dry ingredients, as seen in Lines 64 and 67 when she said, “One, two, three (counting the fingers on Tiff’s hand) different ingredients in there. And they look different Josh said.”

Example 7. This example captures the end of WenDee, Josh and Tiff’s pretzel making activity. The three were sitting at a table together. Each of them rolling dough. WenDee is in the middle. Tiff was to WenDee’s left and Josh to her right (Figure 13).

26 Josh: Yah ((touching the pretzel))
 27 WenDee: Or you wanna make the f-
 28 → >wanna make the hole with your finger?<
 29 ((leaning towards Josh looking at his face)) [Figure 14]
 30 (0.6)



Figure 12. WenDee leaning forward to help Josh.

31 WenDee: Up to yo:u.
 32 (1.8)
 33 → Josh: <I want my (.) finger.> (Figure 14)
 34 ((holding up dough as he pushes his finger through to make holes))
 35 WenDee: With your finger? (.) Okay. ((moves hands towards the pretzel))
 36 (0.5)
 37 ↑ There's two ho:les. ↑ I see it coming. ((points toward the holes))
 38 There's one. (1.0) There's another one.
 39 Josh: (There's) holes. ((pushes down on the dough))
 40 (0.8)
 41 WenDee: Can you make one more hole? (0.5)
 42 → We need one more hole. ((points toward the holes))
 43 We need, >how many holes do we have?<
 44 We have two. Then we need three.
 45 WenDee: Right there. ((pushes hole into pretzel))
 46 Josh: Pretzel. ((hands around his pretzel))
 47 WenDee: PREtze::l. ((leans back))
 48 → Okay. (0.8) so let's put your pretzel on here Josh.
 49 ((grabs a pan and lays it on the table))
 50 Josh: Ya:y ((claps hands together))
 51 WenDee: Ya::y. (.) Josh's pretzel.
 52 ((pats the pan with palm of her hand))

53 Josh: ((lifts up pretzel from the table))
 54 WenDee: You want me help you? ((reaches toward his pretzel))
 55 Josh: ((lifts hands from pretzel and steps slightly backwards))
 56 WenDee: Okay. (2.0) okay. (.) pick up Josh's pretzel and put it right her::e.
 57 ((lift up the pretzel and lays it on the pan))
 58 (1.5)
 59 Josh: ((gaze is following WenDee's hands and rubs his hands together))
 60 → WenDee: And then we'll put Auntie WenDee's pretzel next to yours.
 61 ((lifts her pretzel and puts it on the pan))
 62 (0.5)
 63 → Right her::e. (1.2) Okay? We got three holes.
 64 ((points to Josh's pretzel))
 65 (1.0)
 66 Josh: Look
 67 WenDee: Alright ((leans backwards))
 68 Josh: Sticky ((holds up hands towards WenDee))
 69 WenDee: Sticky (.) do you wanna make another one?
 70 Josh: I want flour ((rubs hands together))
 71 WenDee: You want some more flour? K.
 72 ((pinches some flour up from the table))
 73 Open your hand.
 74 Josh: ((opens his hands palm up over the table))
 75 WenDee: K, dust it, (0.9) dust it ((sprinkles flour over Josh's hands)).

High ratio of child participation. Josh and Tiff both took multiword turns that related to WenDee's utterances in the previous lines showing Josh and Tiff were highly engaged in the activity and conversation. For example, in response to WenDee's Lines 1 and 2, "Okay, so here's our pretzel," Josh said, "I rolling round" in Line 3. WenDee then did an expansion of Josh's Line 3 in Line 4 saying, "Are you rolling it around and around?" Tiff followed with her multiword comment, "I want to roll" (Line 5), which led to WenDee's Line 6, "You're rolling yours too?"

Teacher positioning herself as coparticipant. WenDee was making the pretzels along with the children (Figure 13) and frequently used plural pronouns in this example positioning herself as a coparticipant. She started in Line one saying, "Here's *our* pretzel." And in Line 9 she said, "*We* gotta make three holes." Throughout the

remainder of the example plural pronouns were used such as “*let’s*” (Line 48), “*we’ll*” (Line 60) and several more “*we*” (Lines 9, 42, 63). WenDee did not project herself as the teacher director. She encouraged the children to lead the activity, such as in Line 28 when she observed Josh using his fingers to poke the three pretzel holes. WenDee said, “Wanna make the hole with your finger? Up to you.” Josh responded with the multiword utterance, “I want my finger” in Line 33.

Teacher responsiveness. Lines 28-33 just mentioned above illustrate WenDee’s responsiveness to the children. She frequently repeated back and expanded on the children’s previous turn or narrated what she saw the children doing. Expansions and narrating the children’s actions validated their contributions, provided opportunities to model language use and ultimately promoted their participation, as can be seen by the children’s engagement and frequent turns in the conversation (especially their multiword turns).

Teacher’s use of questioning. Doing a joint activity while having an IC promotes questioning. The purpose of the questions is to relate to and develop the activity versus questions meant to judge or control the conversation. In this example, WenDee asked questions of the children directly related to the activity and the answers to her questions helped facilitate their completion of the task. For example, in Line 13 she asked Josh, “You have three holes?” after which is a long pause while Josh looks at his pretzel and then eventually says, “no” (Line 15). WenDee helped Josh make three holes in his pretzel (being responsive to his requests in Lines 8, 10 and 12 when he asked, “Like this?”). Another example of WenDee asking a purposeful question can be seen in Line 28 when she wanted to know if Josh wanted to make his holes with his fingers.

WenDee's interview. During our interview, WenDee talked with me about the importance of non-verbal communication when interacting with young children. She emphasized that if a child is not saying something, it does not mean he or she is not engaged. "There is a lot of engagement with eye contact and so the non-verbal becomes a big part of the picture," she said. Less verbal children can even engage in turn taking by using their eye contact. WenDee believes it is really important when thinking about ICs with two-year-olds and three-year-olds that the measure of participation is not just related to spoken words.

WenDee said she encourages children's participation by building the IC around activities that use as many of the five senses as possible. She is aware of how things sound to the children (she believes tone and singing are very important to engage them). She also thinks about how she can get the children feeling, smelling and tasting things. Having such sensory experiences helps get the children talking. About her pretzel making IC, WenDee said,

I want them to use all of their senses to learn. I try to be sure that I am not just talking. I am taking my cues from the children and indulging them in using as many senses as possible. They are learning through their senses. They are listening, watching and touching during this hands-on experience. (W. Eng, personal communications, July 26, 2013).

WenDee said she repeats activities like her pretzel making activity found in the clips. Repeating activities seems to engage the children and encourage their participation in ICs.

WenDee uses singing and playful activities to promote their participation and help them learn language and communication skills, especially with her DLL children. She said, “I would sing about the children’s family and make up songs to get them to ask me, ‘oh, sing about my brother or sing about my sister or my mother or my mother’s work so it starts a dialog.’” For WenDee, singing is a vehicle she uses to help get the children to participate in conversations with her and is related to her goal of using as many of the senses as possible. One of her favorite strategies is to sing books. She likes to have children bring in books in their home languages and she will sing those with the children. She said, “It’s a nice way to connect with children from another culture and a nice way for them to feel like they belong and also to share their culture with other children and I’m just amazed by how two-year-olds can pick up words to songs.” WenDee told me she believes singing is one of the most useful ways to encourage young children to interact with her.

Regarding her video clips, WenDee said she used a lot of eye contact and touch to encourage Josh, Tiff and Rosa to talk with her about the activity. She also wanted to make this activity very hands-on and tie it to a story to promote the children’s literacy development. WenDee engaged her less verbal or DLL children in the clip by, “showing and telling” what she was doing during an activity. She said,

I use a lot of eye contact, touch and talk with all children to engage them in verbal or non-verbal interaction. I aim to give opportunities to children who are less verbal or dual language learners to be up close and personal. I pose questions to the small group of children during a lesson. I may engage the most verbal child to

provide opportunities for the less verbal peers to hear verbal interactions and language models from their peers.

WenDee believes peer models are great learning tools and purposefully encourages the children to help one another. One of her best tools during IC to engage the children and support their learning is modeling, especially peer to peer modeling.

WenDee said it is important to acknowledge the children's thoughts and to take cues from them while still having a learning goal. She said, "Yes, I always have a learning goal. I seek to provide opportunities for language and vocabulary learning, peer learning and working together cooperatively with peers." However, she emphasized that she still uses the children to guide her. She said, as a teacher of young children, she has had to slow her speech down and learn to watch the children and "listen for cues and really allow them to think and expand on ideas and move them along that path that I want them to go and provide the information that I want them to learn." She concluded that it is good to have spontaneity and planning together when having an IC with young children. She was glad she responded to the children's interest in the sugar, although that was not part of her original plan. Otherwise, if she had not responded, she believes it would have "shut down the learning" during that interaction.

Regarding acknowledging children's thoughts, WenDee noticed in one of her clips that she said, "Ohh, right" to one of the children but believed she really did not need to say that. "The children don't really need to know if they are right or wrong. But, I am trying to guide their thinking towards interaction or the activity and I acknowledge what they say." WenDee believes that asking children, even two-year-olds, about their views, judgments and rationales is important to guide their thinking. She added that the children

are not always able to answer the questions, but it is okay because it is an opportunity to model thinking about those higher-level questions. WenDee said to be careful with questioning though because if teachers ask too many questions, “you lose them all, especially at two.”

Being responsive and warm to the two-year-olds is very important, WenDee says, not only verbally, but also responding to them with eye contact and gently touching the children. “They are two, they’ve only had a few summers in their whole lives. They are quite young and if you want to engage them in learning, they need to know you care about them.”

Analyzing the seven exemplars and interviewing the teachers illuminated actions that appear to promote child participation in ICs. The children responded to teachers’ positioning of themselves as coparticipants in the activity, their responsiveness, as well as use of questioning and multimodal resources, by engaging in conversations for extended periods of time. So, what about when the children react by walking away from the IC? Following is a counterexample to the seven exemplars above. Interestingly, it appears that one of the teacher actions that promote participation, questioning, can also discourage it, as the teachers mentioned during their interviews.

A Counterexample

Following is an example where a child joins an IC and quickly leaves the group. This example contrasts Examples 1-7 where the children had sustained participation. Here, the teacher is sitting with Kris and Cody, both 4-year-olds. They are sitting together and having a conversation as they paint. Cody is a DLL and is sitting between the teacher and Kris. Luke, also a 4-year-old and DLL, joins the group at the beginning

of this transcript. The three children are painting one cloth together. The teacher is not painting along with the children.

- 1 Luke: Excuse me can I paint? ((walks to the table and stands next to Kris))
2 Teacher: ↑ Sure (1.5) ((grabs a brush, adds paint and hands to Luke))
3 Here's a PAintbrush, with some paint on it.
4 Luke: ((takes the brush and starts painting while standing))
5 (1)
6 Kris: I let Jenny look at my (.) badge.
7 Teacher: Oh, that was nice of you.
8 (1.2)
9 Kris: I told her to not take it over but, but sh:e would listen.
10 Luke: But don't break it. ((reaching over to ceramic paint container))
11 (.)
12 Teacher: Don't break what?
13 (.)
14 → Luke: Don't break this. ((pointing to the paint container))
15 → Teacher: We won't break it. Right? ((looking down at the painting))
16 (.)
17 Luke: [What you making? ((sits down in the chair next to Kris))
18 Teacher: [Can you see the paint?
19 Luke: What you ma::king aunty?
20 Teacher: We're painting right no::w. ((looks up at Luke))
21 Luke: What you have to paint? ((painting the cloth))
22 Teacher: This cloth. ((points fingers towards the cloth))
23 (.8)
24 Luke: This [cloth?
25 Teacher: [Kris do you see the paint right there? ((pointing to the paint))
26 Kris: Yah.
27 (1.0)
28 Teacher: Look at the colors.
29 (5.2)
30 Kris: Ho::w bout if we add red? And orange? ((looks up at teacher))
31 Teacher: Then what color do you think [it'll come out? ((looks at Kris))
32 Luke: [Oh, I need water.
33 ((stands and leans over table to put brush in water container))
34 Teacher: If we add red.
35 Kris: Like a rai::nbow.
36 Teacher: You think so? It'll look like a rainbow.
37 Kris: And we'll, and we'll get to paint it.
38 Cody: ((reaches to water container and puts brush in))
39 Luke: ((sits back down and paints the cloth))
40 Teacher: Water?
41 Kris: Paint it blue. As, as a tablecloth. (2.0)

42 And it will be (1.3)
 43 Luke: [() ((stands and puts water on brush))
 44 Kris: [A rai::nbow.
 45 (3.2)
 46 All look like a rai::nbow.=
 47 Teacher: =Um hm
 48 (1.9)
 49 → Luke: Why you, why you need wa::ter? ((stands and puts water on brush))
 50 Teacher: ((looks at Luke))
 51 → You're the one who wanted to do it.
 52 → Luke, why did you need water?
 53 Luke: Cuz I need it. ((paints the fabric))
 54 Teacher: Why?
 55 Luke: Cuz I need water for paint. ((looking down at cloth))
 56 Teacher: Why. ((looking down at cloth))
 57 Luke: And we have to make paint.
 58 Teacher: Right.(.) So why did you need the water to paint. ((looks up))
 59 Luke: Cuz we have to put water in it.
 60 Teacher: Why?
 61 Luke: Put wa::ter.
 62 Teacher: Why do we need to put water?
 63 Luke: Cuz [()
 64 Kris: [There's already water in it Luke.
 65 (.)
 66 Teacher: That's why I'm wondering why does he want to put (.) more water?
 67 Luke why do we need more water? ((looks up at Luke))
 68 Luke: Cuz we need more. ((looking down))
 69 Teacher: ↑ How come. ((looking up at Luke))
 70 Luke: We don't need more then this is nuff water.
 71 Teacher: It is enough, so we don't need any More.
 72 (.)
 73 Luke: Ok, I'm finish aunty ((gives teacher the brush and walks away))

This example is a counterexample to the previous seven because Luke does not have sustained participation in the interaction like the other children did in the previous examples. He walks away from the IC after two minutes.

The teacher's conversational actions in this example contrast to the actions Rheta, Kristi and WenDee used in the first seven exemplars. For example, the teacher in this example is not coparticipating with the children as they paint. Also, the teacher's

responsiveness to Luke is different than the way teachers' responded to the children in the high participation examples.

In this clip the teacher was not exhibiting "uptake" or acceptance of Luke's contributions to the conversation. For example, in Line 14, Luke made the suggestion, "Don't break this," while pointing to the paint container. He was trying to initiate an interaction about the container. The teacher effectively rejected his initiation when saying, "We won't break it" and the conversation about the container abruptly ended. Perhaps, if the teacher had made a comment showing uptake of Luke's comment such as, "You noticed this is breakable. Would you like us to be careful with it?" The interaction would have lasted longer. In Line 49 Luke asked the question, "Why you need water?" and again attempted to initiate a conversational topic. Instead of answering his question, the teacher responded, "You're the one who wanted it. Luke, why did you need water?" (Lines 51-52). Luke was unable to articulate why he was adding water to his paint in the next line. The teacher then repeatedly asked "why" he wanted to put water in the paint (Lines 51-62) and Luke continued to not be able to answer why. In Line 62 Kris provided an end to the questioning saying, "There's already water in it Luke." However, in Line 69 the teacher asked Luke again, "How come" he wants water in the paint. In Line 70 Luke replied, "We don't need more then this is nuff water" and in Line 73 he tells the teacher he is finished, hands her his brush, and walked away.

Quantitative Analysis

I ran two analyses of covariance (ANCOVA). The first model explored the influence of teachers' level of IC implementation, children's DLL status, and gender, on receptive English language, as measured by children's PPVT-4 scores, while controlling

for age. The second model explored IC implementation, children's DLL status, and gender on Children's expressive English language, as measured by children's EVT-2 scores, while controlling for age.

The average IC scores of the three video recordings ranged from a minimum of 2.50 and a maximum of 4.33. The mean was 3.15 and standard deviation was .5409. Teachers were categorized as high or low enactors of IC by considering the average of their three IC scores from the video recordings. Six teachers fell into the low group and three teachers fell into the high group.

Assumptions. Before I ran my statistical models, I did routine data screening. I found one outlier in the data, which I removed. I tested for normal distribution of the PPVT-4 and EVT-2 raw scores. Both the PPVT-4 and EVT-2 scores were normally distributed (see Figures 1 and 2 below). My sample size of $N=112$ was large enough so any violation of normal distribution should not cause major problems (Tabachnick & Fidell, 2007). Homogeneity of variance was tested using Leven's test for equality of variance and found to not be significant for the PPVT-4 and EVT-2. I tested the linear relationship between the dependent variables and age, my covariate, for my groups and found that I met the assumption. The homogeneity of regression slopes was also checked and there was not a statistically significant interaction between IC enactment and age so I met the assumption. The risk of Type 1 error, or finding a significant difference between my three groups of IC enactment when there was not one, was mitigated by meeting the assumptions for ANCOVA, by having a sample size of over 100 and by using an alpha level of .05 (Stevens, 1996).

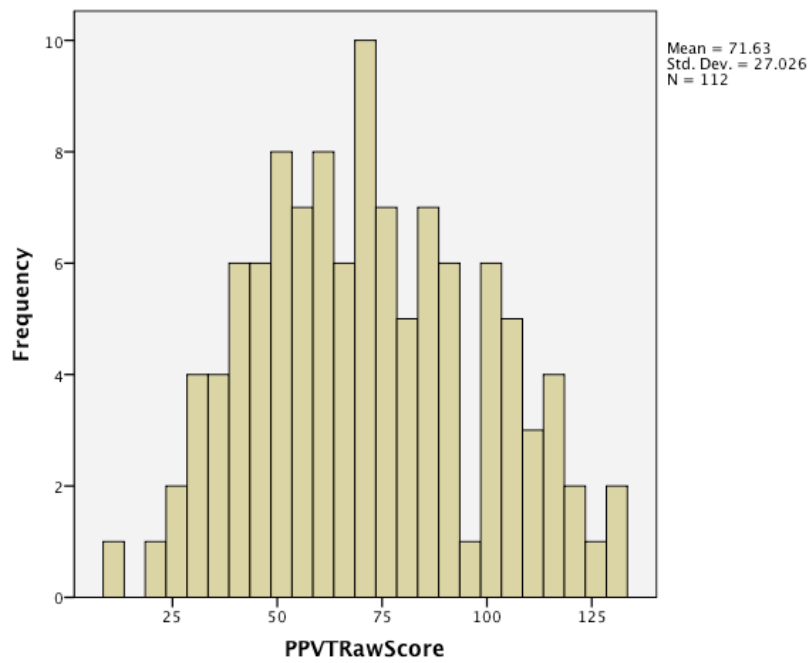


Figure 13. Histogram of PPVT-4 Scores

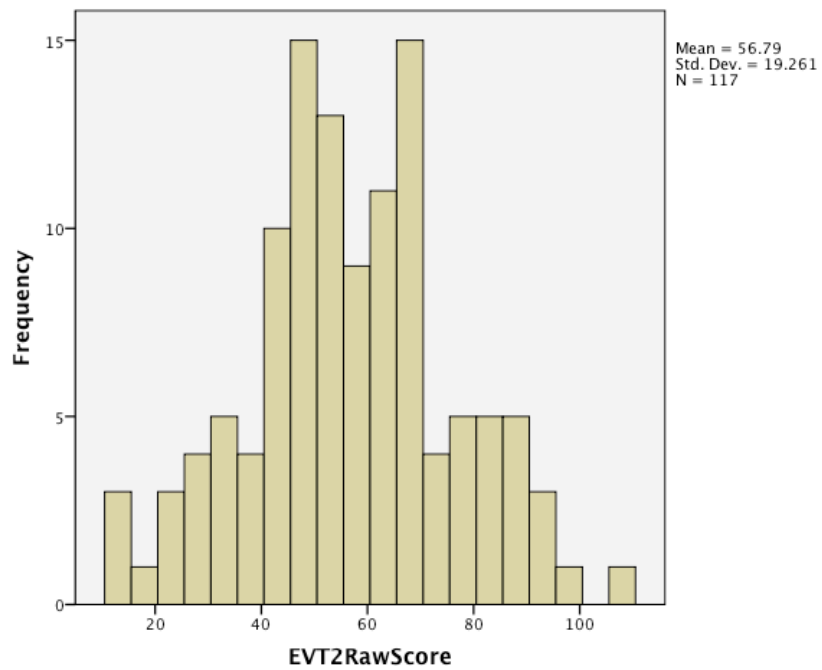


Figure 14. Histogram of EVT-2 Scores

ANCOVA using PPVT-4. Table 4 shows the descriptive statistics for the ANCOVA using the PPVT-4 raw scores as the dependent variable.

Table 4
Descriptive Statistics of Variables by Group. (Dependent Variable PPVT-4 Raw Scores)

IC		Mono-English		DLL		Total	
		n	M (SD)	n	M (SD)	n	M (SD)
Low	Boy	16	75.75 (21.70)	20	54.40 (21.66)	36	63.89 (23.92)
	Girl	16	79.69 (17.16)	7	44.14 (24.16)	23	68.87 (25.29)
	Total	32	77.72 (19.35)	27	51.74 (22.33)	59	65.83 (24.37)
High	Boy	17	85.53 (25.52)	11	56.09 (16.90)	28	73.96 (26.57)
	Girl	13	90.08 (25.00)	11	70.09 (32.60)	24	80.92 (29.86)
	Total	30	87.50 (24.96)	22	63.09 (26.33)	52	77.12 (28.07)
Total	Boy	33	80.79 (23.90)	31	55.00 (19.82)	64	68.30 (25.41)
	Girl	29	84.34 (21.29)	18	60.00 (31.63)	47	75.02 (28.08)
	Total	62	82.45 (22.60)	49	56.84 (24.61)	111	71.14 (26.66)

With my first model focusing on children's receptive vocabulary, after adjusting for age, there was not a significant interaction effect between DLL status and IC enactment, $F(1, 102) = 2.36, p = .13$, or between DLL status and gender, $F(1, 102) = .32, p = .57$. However, there was a significant interaction effect between IC enactment and gender, $F(1, 102) = 6.21, p = .01$, with a small effect size (partial eta squared = .06). The statistically significant main effects were age, $F(1, 102) = 77.93, p < .0005$ and DLL status, $F(1, 102) = 39.78, p < .0005$. Gender did not have a statistically significant main effect, however it was close, $F(1, 102) = 3.58, p = .06$. IC enactment did not have a statistically significant main effect, $F(1, 102) = .44, p = .51$. These results suggest that age and DLL status have a statistically significant effect on the children's receptive

English vocabulary. Gender does not have a statistically significant main effect on the PPVT-4 scores, but it is close. There was a significant interaction effect between gender and IC enactment suggesting that boys and girls respond differently to IC enactment in terms of their receptive English vocabulary. Girls whose teachers were high enactors of IC showed a more substantial increase in their receptive English vocabulary than boys (Table 5, Figure 15).

Table 5
Test of Between-Subjects Effects (Dependent Variable PPVT-4 Raw Scores)

Source	SS	df	MS	F	Partial Eta Squared
Age	23949.56	1	23949.56	77.93**	.43
Language	12225.44	1	12225.44	39.78**	.28
IC	133.83	1	133.83	.44	.004
Gender	1100.39	1	1100.39	3.58	.03
Language*IC	724.27	1	724.27	2.36	.02
Language*Gender	99.40	1	99.40	.32	.003
IC*Gender	1908.94	1	1908.94	6.21**	.06
Language*IC*Gender	642.02	1	642.02	2.09	.02
Error	31347.52	102	307.33		
Corrected total	78197.69	110			
$R^2 = .60$					
Adj. $R^2 = .57$					

Note. ** $p < .01$. * $p < .05$.

Table 6
Adjusted Means for IC*Gender

IC	Gender	Adj. M (SE)	95% CI
Low	Boy	69.51 (2.98)	[63.60, 75.43]
	Girl	67.43 (4.02)	[59.46, 75.41]
High	Boy	63.19 (3.50)	[56.25, 70.13]
	Girl	78.58 (3.60)	[71.45, 85.71]

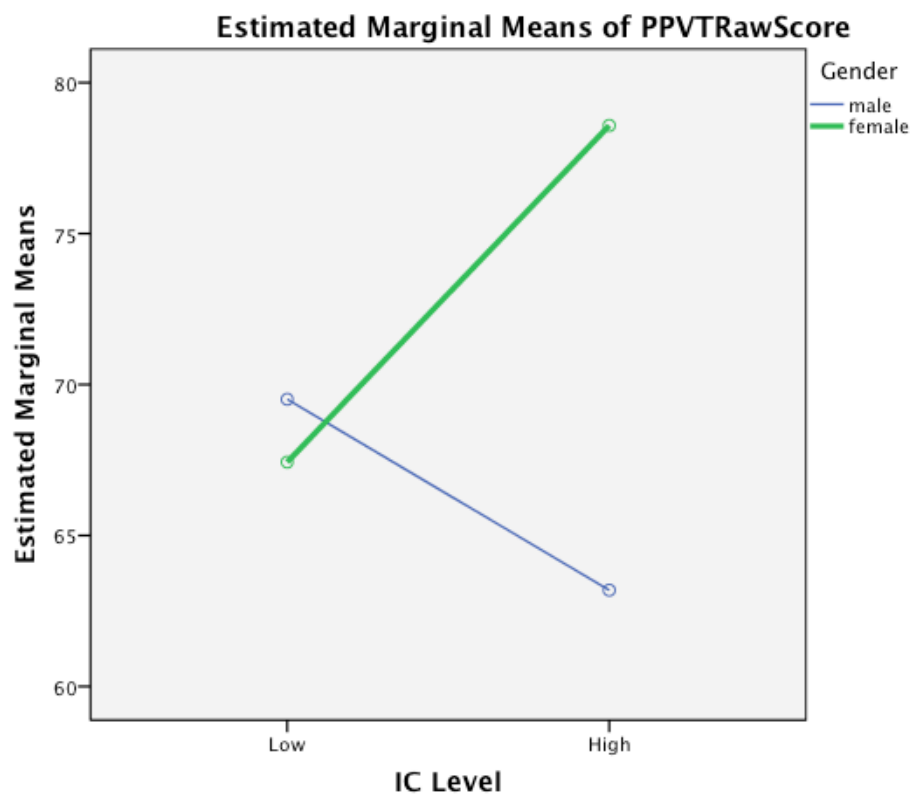


Figure 15. Profile Plot of IC*Gender.

ANCOVA using EVT-2. Table 7 shows the descriptive statistics for the ANCOVA model using the EVT-2 raw scores as the dependent variable.

Table 7
Descriptive Statistics (Dependent Variable EVT-2 Raw Scores)

IC		Mono-English		DLL		Total	
		n	<i>M (SD)</i>	n	<i>M (SD)</i>	n	<i>M (SD)</i>
Low	Boy	17	63.06 (16.59)	20	47.30 (18.12)	37	54.54 (18.95)
	Girl	16	58.87 (12.30)	9	35.78 (17.56)	25	50.56 (18.04)
	Total	33	61.03 (14.59)	29	43.72 (18.45)	62	52.94 (18.54)
High	Boy	17	61.94 (14.39)	12	49.00 (15.86)	29	56.59 (16.10)
	Girl	14	68.71 (17.25)	11	59.36 (23.30)	25	64.60 (20.24)
	Total	31	65.00 (15.85)	23	53.96 (20.01)	54	60.30 (18.41)
Total	Boy	34	62.50 (15.30)	32	47.94 (17.07)	66	55.44 (17.65)
	Girl	30	63.47 (15.38)	20	48.75 (23.68)	50	57.58 (20.26)
	Total	64	62.95 (15.23)	52	48.25 (19.65)	116	56.36 (18.76)

My second model focused on children's expressive vocabulary. After adjusting for age, there was a significant interaction effect between DLL status and IC enactment, $F(1, 107) = 4.15, p = .044$, with an effect size of .04. There was also a significant interaction effect between gender and IC enactment, $F(1, 107) = 12.45, p = .001$, with an effect size of .10. Gender did not have a significant main effect, $F(1, 107) = 1.821, p = .180$. The statistically significant main effects were age, $F(1, 107) = 60.79, p < .0005$, with an effect size of .36, and DLL status, $F(1, 107) = 19.93, p < .0005$, with an effect size of .16. Gender did not have a statistically significant main effect, $F(1, 107) = 1.82, p = .18$. IC enactment did not have a statistically significant main effect, $F(1, 107) = .96, p = .328$.

The results suggest that boys and girls respond differently to IC enactment in terms of the influence on children's expressive English vocabulary. Girls whose teachers were high enactors of IC showed a more substantial increase in their expressive English vocabulary than boys (Table 8, Figure 16). In addition, the data suggests that DLLs and mono-English speakers respond differently to IC enactment. The DLLs showed a more substantial response to high IC enactment in their expressive English language development, than mono-English speakers. (Table 8, Figure 17).

Table 8
Test of Between-Subjects Effects (Dependent Variable EVT-2 Raw Scores)

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Partial Eta Squared
Age	11143.64	1	11143.64	60.79**	.36
Language	3653.41	1	3653.41	19.93**	.16
IC	176.74	1	176.74	.96	.01
Gender	333.87	1	333.87	1.82	.02
Language*IC	761.19	1	761.19	4.15*	.04
Language*Gender	116.68	1	116.68	.64	.01
IC*Gender	2281.38	1	2281.38	12.45**	.10
Language*IC*Gender	28.56	1	28.56	.16	.00
Error	19613.15	107	183.30		
Corrected total	40490.79	115			
$R^2 = .52$					
Adj. $R^2 = .48$					

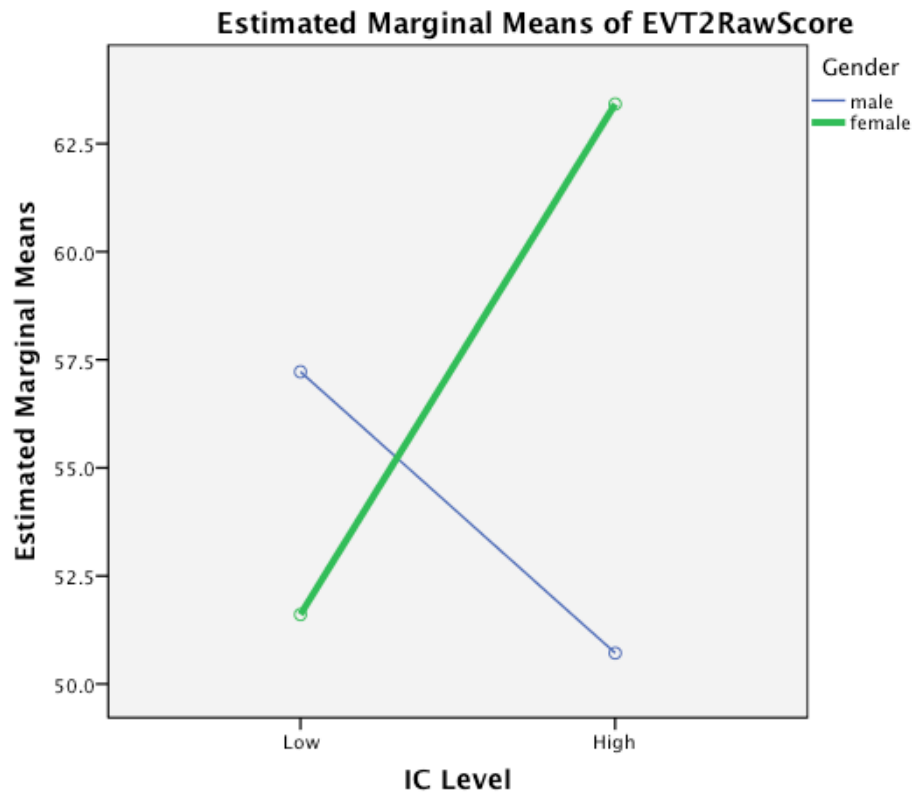
Note. ** $p < .01$. * $p < .05$.

Table 9
*Adjusted Means for Language*IC*

IC	Language	<i>Adj. M (SE)</i>	95% CI
Low	Mono-English	62.94 (2.37)	[58.24, 67.64]
	DLL Mono-English	45.89 (2.77)	[40.39, 51.39]
High	Mono-English	60.30 (2.53)	[55.29, 65.31]
	DLL	53.84 (2.83)	[48.23, 59.44]

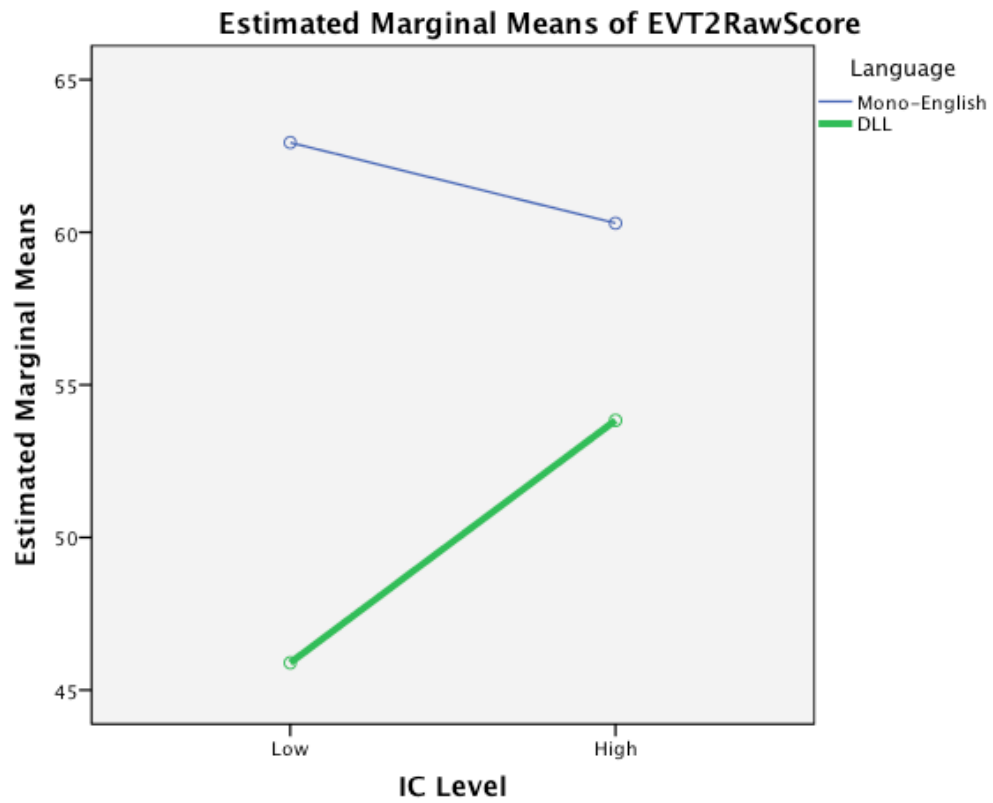
Table 10
*Adjusted Means for IC*Gender*

IC	Gender	<i>Adj. M (SE)</i>	95% CI
Low	Boy	57.23 (2.25)	[52.76, 61.68]
	Girl	51.61 (2.87)	[45.91, 57.30]
High	Boy	50.72 (2.62)	[45.51, 55.92]
	Girl	63.42 (2.73)	[58.01, 68.83]



Covariates appearing in the model are evaluated at the following values: EVTAge = 49.23

Figure 16. Profile Plot of Gender*IC



Covariates appearing in the model are evaluated at the following values: EVTAge = 49.23

Figure 17. Profile Plot of Language*IC

CHAPTER 5

DISCUSSION

My analysis revealed several strategies effective teachers used to encourage preschool aged children to participate in ICs. I documented the strategies and children's responses using discourse analysis. There were patterns of significant teacher behaviors and child responses across the video recordings of high scoring ICs. I also gained additional details on teacher actions to promote preschool children's participation by interviewing the teachers in the high scoring video recordings. Lastly, I found that there was a significant relationship between teachers' use of IC and their DLL children's English vocabulary attainment. I found this relationship by running two analyses of covariance using the children's PPVT-4 and EVT-2 and categorizing the teachers into two groups, high and low enactors of IC. I included age and gender as variables to see if they influenced the relationship between the PPVT-4 and EVT-2 scores and teachers' enactment of IC.

Summary of Findings

The results of my quantitative analysis suggest that IC is a positive teaching strategy when working with DLL children and girls. When teachers were high enactors of IC, there was a statistically significant increase in DLL's and girl's language achievement. Specifically, the results indicated that high IC enactment has a positive influence on DLL's and girls' expressive English vocabulary. Girl's receptive English vocabulary also appeared to be positively influenced by High IC enactment. The relationship between gender, IC and language outcomes was unexpected. I expected there to be a positive relationship between IC enactment and language outcomes for both

boys and girls. However, after I got the results showing an interaction effect between IC enactment, gender and the vocabulary outcomes, I did a literature review and found research indicating there appears to be a difference in the language development of boys compared to girls. Young girls tend to produce more words and more complex sentences earlier than boys (Bouchard, Trudeau, Sutton, Boudreault, & Deneault, 2009; Galsworthy, Dionne, Dale, & Plomin, 2000; Hyde & Linn, 1988). Bouchard et al. wrote that the causes of the differences are complex and still being researched but that both biological and sociocultural factors probably interact to influence language development. They stated, “It may be the case of sociocultural influences that allow biological differences to be manifested” (p. 704). Since ICs are social in nature, perhaps the difference in language skills generates more opportunities for girl’s to use their vocabulary resulting in the different patterns of IC enactment for boys compared to girls. Follow-up studies are needed to confirm these findings. It would be interesting to analyze if there is an interaction effect between IC enactment, gender, and language outcome measures of older children.

The findings that DLLs expressive language achievement responds more positively to high enactment of IC than mono-English speakers were interesting but not entirely unexpected. The literature on second language acquisition from an interactionist perspective emphasizes the importance of conversational experiences to promote expressive language development (Ortega, 2009). The Institute for Educational Sciences, after assessing a variety of instructional strategies to promote language development, reported IC to be one of the best methods to support language acquisition (2006). Perhaps the small group format provides opportunities for teachers to be responsive to

DLLs and encourage their participation and practice using their new language, things DLLs need to develop their expressive language, where mono-English speakers' feel more comfortable using their expressive language in whole-group format.

My findings are consistent with Ruston and Schwaneflugel (2010) and Mashburn et al. (2008) who found that adults conversing directly with children facilitated their expressive language development; however, the authors did not focus on if the positive effects of such interactions were gender specific. The data and past research indicates that conversing with children, such as what happens in high scoring ICs, is an important teaching strategy for the children's language development. However, as the coders scored only five of the 27 video recordings as "enacting" or "exemplary" ICs, this strategy can be tricky to implement, something Yamauchi, Im, & Schonleber (2012) also reported. The early childhood literature indicates that having conversations with young children is an underused strategy in preschools (Massey, 2003; Miller, 2010; Justice, Mashburn, Hamre, & Pianta, 2008). In the current study, the coders noted that the two reasons that video recordings were not enacted or exemplary ICs were low participation levels of the children and interactions being too short to be considered "conversations."

I identified four categories of significant teacher actions in my data that promoted child participation, (a) creating a context to promote conversation, (b) responsiveness, (c) using multimodal resources, and (d) questioning. It is my conclusion that children responded to these teacher actions by participating more in the ICs than would have been the case if teachers did not use them. Some of these teacher actions were particularly important when working with DLLs, which is significant for many preschool teachers as American schools are becoming more diverse (Ortman & Shin, 2011).

Creating a context to promote conversation. A small group size, close seating arrangement, a “hands-on” activity design and teachers coparticipating in the activity all appeared to promote participation of the children in the video recordings. These findings are consistent with previous studies that described activity design and teacher coparticipation as factors that influenced child engagement and the quality of language stimulation during the interaction (Girolametto, Hoaken, Weitzman & van Lieshout, 2000; Tharp & Gallimore, 1988, Turnbull et al., 2009).

I found that when the group size grew to more than five children, the teacher-child turn taking ratio shifted from being 1 to 1 to being teacher dominated. I also found that children in close proximity to the teacher tended to participate more than children farther away, a finding that was corroborated by Rheta in her interview. This observation is consistent with Cahill and Papageoriou’s (2007) finding that when doctors sat directly next to a child during consultations, the child participated more in the conversation. The implications for teachers, especially when working with DLLs, is for them to sit directly next to children who need encouragement to participate. Closeness to DLLs during a conversation provides teachers more opportunities to use multimodal resources, such as touch, gesture, gaze and props. Rheta, Kristi and WenDee all sat in close proximity to the children and used multimodal resources in the exemplars and the DLL children were highly responsive.

Additionally, the data showed that having a physical activity for the children to do during the IC promoted higher participation than more passive activities. In all of the exemplars, the children were engaged in an activity with a tangible product. In WenDee’s video, she first read a story to the children and then did a cooking activity.

Children in her small group, particularly Jason, a DLL, took significantly more conversational turns during the cooking activity than the book reading activity. Jason did not take any verbal turns during the book reading activity, even when WenDee directed questions to him. However, during the cooking activity, when the children were measuring and mixing, Jason took as many turns as WenDee. He also took a directive role in the conversation suggesting the group taste the sugar and the salt. The influence of providing a hands-on activity on promoting more verbal turn taking by DLLs was also observed in Rheta's high-participation exemplars. The educational value of small groups working together to create a tangible product and their promotion of conversation is confirmed in the literature (Tharp & Gallimore, 1988).

Perhaps having a physical activity gives DLL children non-verbal entry points into the interaction. Once they are able to join the interaction non-verbally, it may be more comfortable for them to attempt verbal contributions. In Rheta's Example 2, Kaito verbally joined the interaction only after Rheta had him sit close, gave him a paintbrush and moved the paint towards him. For the prior 30 minutes of the video recording, Kaito was sitting and observing, not making any verbal or non-verbal contributions. Once he physically engaged in the activity, he took several non-verbal and verbal turns and even started asking his own questions related to the activity. This finding has implications for teachers who want to encourage their children to talk. Having a physical, hands-on, multisensory activity for them to do while conversing facilitates the children's participation.

Teacher coparticipation in the activity was another important characteristic of the high participation exemplars. Rheta picked berries and painted, Kristi got her hands wet

and experimented putting boats and shells in the water, and WenDee rolled out pretzels alongside the children. The teachers frequently used plural pronouns, projecting an orientation towards coparticipation and communicated expectations for collaboration.

By coparticipating, the teachers sent non-verbal messages to the children about the nature of the conversation and the teachers' role as collaborators that had consequences for the way the children acted. The teachers positioned themselves as coparticipants and equals, rather than teacher directors, watching and judging the children's contributions. Scollon and Scollon's (1981), in their seminal work on interethnic communications, write that people present their power relationships through the way they speak. They write, "If the relationship between two people is one of dominance and submission, that is, if one is in a more powerful position than the other, the way one speaks will depend very much on which position he is in" (page 16). Teachers typically take a more powerful position than the children. Therefore, it is significant that the teachers in the exemplars in my data use plural pronouns exhibiting a positioning of sharing the power. As a result, the children in the exemplars take more directive roles in the activities and conversations. The inclusive language used by the teacher also communicated it was okay for the children to take intellectual and linguistic risks during the conversation because it was a non-judgmental activity the teacher and children were doing together.

The Kamehameha Early Education Project (KEEP) documented the educational value of such coparticipation, or "learning taking place in a mode of enterprise engagement," where teachers and children "mutually engaged" in an activity (Tharp et al., 2007, p. 295). KEEP researchers observed that Hawaiian children participated more

in discussions when there was mutual participation of teachers and children in an activity, emphasizing the importance of the role a teacher takes in the activity. To get the children talking, it is helpful for the teacher to coparticipate. The results of the current study are consistent with previous research from KEEP that a seemingly simple act of doing something jointly with children, instead of the more typical teacher role of overseeing activities, has profound implications for the child's learning and development.

Turnbull et al. (2009) investigated different preschool classroom contexts and their relationship to the quality of adult-child interactions that stimulate language development. The authors found that having child-directed activities like dramatic play, art and centers in small groups facilitated child participation. However, they emphasized that small group and child-directed activities in and of themselves, "should not be deemed the ultimate solution for increasing language opportunities in the classroom" (p. 74). The authors recommended that adults take a facilitator role, not overly directive, yet still promoting language by doing such things as modeling or asking open-ended questions. Learning contexts that combine small groups, child-directedness and adult facilitation, such as fully enacted ICs, are ideal for language and cognitive development.

I believe that this dissertation provides examples of teachers creating contexts in which the children are highly participatory because they bring together child-directedness with learning goals. Ericson (1982) advocated for identification of ways academic tasks and social tasks could come together in classrooms. The collaborative, joint activities with clear learning goals found in ICs provide examples of such interactions. The ICs highlighted in this study provide examples of teachers facilitating social, even playful child-directed activities that also have learning goals. Perhaps it is this hybrid nature of

these ICs that engaged the children so well. WenDee's Example 6 was both child-directed in the way she responded to Josh's suggestion that they taste the sugar, as well as academic in the way she led the children to discuss how many different dry ingredients were in the bowl. I believe a key to this successful bridging of more playful social interactions with specific learning goals is a high degree of teacher responsiveness, something Rheta, Kristi and WenDee demonstrated expertly in their exemplars.

Responsiveness. Rheta emphasized being "in tune," Kristi called it "gearing" and "flowing," and WenDee talked about "taking cues" from the children. All three teachers recognized the importance of observing and responding to children in order to promote their participation in conversations. The seven exemplars contained multiple examples of the teachers acknowledging, enhancing and elaborating on what the children were saying and doing, indicators, as Lobman (2006) wrote, of highly responsive teaching. Rheta, Kristi and WenDee incorporated children's ideas and words into their own comments and questions, allowed and encouraged the children to use language that was familiar to them while modeling back more standard forms of English, and mirroring children's actions. For example, WenDee, Josh and Tiff mirrored one another's counting gestures in Example 6. As Goh, et al.'s (2012) found, the ICs in this study were characterized by a high degree of reciprocity.

Prior research indicated the effectiveness of responsive teacher actions, such as those demonstrated by Rheta, Kristi and WenDee. KEEP researchers found that teachers responding "in flight" to information children contributed during conversations led to increased engagement (Tharp et al., 2007). Some ways KEEP teachers were responsive include, (a) using children's prior knowledge and abilities as a starting point for lessons,

(b) tailoring the level of difficulty of questions to match the children in the small group so they were challenged but not discouraged, (c) formulating questions based on children's contributions to the conversation, and (d) incorporating children's own language and ideas into the teacher's utterances. Tharp et al. discussed the importance of teachers observing and listening carefully to children, expanding and recasting their utterances, and eliciting talk from learners while adjusting the complexity of questions and speech in response to cues as to whether they are understanding. They stressed that these communication techniques should not be overused, as they could quickly stifle the fluidity of the discussion, much like Rheta, WenDee and Kristi described in their interviews. All three teachers in the current study mentioned the need for preschool instructors to be careful to not ask too many complex, open-ended questions that did not naturally fit the flow and context of the conversation.

Consistent with the KEEP research and documentation of the ways teachers are responsive, Dombro, Jablon and Stetson (2011) wrote about preschool teachers using a strategy called *mirror talk*, or narrating back what they see children doing. WenDee and Kristi frequently used this strategy in their exemplars. O'Connor & Michaels (1993) described *revoicing*, or teachers linking their utterance to what a child had just said in the previous turn as a strategy to be responsive to children. Much like Jurow & Creighton (2005) and Sawyer (2004) found in their work, the children in the exemplars took more conversational turns when teachers exhibited responsiveness by doing things like mirror talk and revoicing.

Turnbull et al. (2009) suggest that such strategies as revoicing and expanding children's comments are also important techniques teachers can use to promote language

development. However, the authors found in their examination of 14 preschool classrooms that children generally had “little exposure” to these techniques (p. 73). There is a need to support early childhood educators to be more responsive to children. Exemplars, such as the ones found in this dissertation, could serve as models to assist teachers to adjust their instruction to be more responsive.

Improvisation acting is a framework researchers have used to identify and promote responsive teaching behaviors much like the ones Rheta, WenDee and Kristi exhibited (Ericson, 1982; Jurrow & Creighton, 2006; Lobman, 2006; Sawyer, 2004, 2004a). Improvisational acting requires participants to pay close attention to one another and use their coparticipant’s prior turn as a guide for the direction of the scene, much like responsive teachers use children’s contributions to guide classroom conversations. My results are consistent with Lobman (2006) and Jurrow and Creighton’s (2006) findings that when teachers employed a more improvisational technique to conversing, such as by acknowledging and extending a prior turn in the conversation, children’s participation increased. When teachers used a more scripted, instructional role, ignoring or redirecting the children, participation decreased.

Sawyer (2004, 2004a) recommended drawing on the expertise of improvisational acting during professional development to help teachers become more responsive. Many of the improvisational acting “rules” Sawyer described are consistent with the teaching behaviors identified in my high-participation exemplars. For example, Sawyer described the “Yes, and” rule of actors accepting and building upon what other actors are said and did. Kristi exhibited this action when she accepted Heidi’s idea to put shells in their bag in Exemplar 4. Another improvisational rule Sawyer described is “No Denial” or not

rejecting what a fellow actor introduces to the scene. Denials in improvisation stops the flow of a scene, as I observed in my counterexample when the teacher did not accept the child's attempts to talk about the breakable paint container or why there was water in the paint, resulting in the child walking away from the IC. An important aspect of ICs is that the children contribute to the on-going dialogue about ideas. Approaching ICs as "disciplined improvisation" to use Sawyer's term, could help teachers behave in ways that are responsive to the children and ultimately promote more on-going conversations with high participation from the children.

Because past research and the results of this project illustrate that responsiveness is an important strategy to promote child participation in conversations, I believe responsiveness should be emphasized more in the criteria of ECE-7 rubric for IC. Currently, the criteria for an exemplary IC reads,

The teacher designs and enacts an instructional conversation (IC) with a clear learning goal; listens carefully to assess and assist understanding toward the goal AND questions children on their views, judgments or rationales in reaching the goal. The verbal and non-verbal communication ratio of teacher-child turn-taking is approx. 1 to 1.

Including the term responsiveness in the criteria may help communicate the intention that ICs are not only instructional, but also conversational. Perhaps the criteria could read, "The teacher designs and enacts an instructional conversation with a clear learning goal while being responsive to children's contributions." Such a shift in the criteria may help the rubric communicate the intended balance between the social and academic nature of ICs. As a professional development tool, it could help teachers recognize the importance

of not only having a learning goal, but also responding to and taking cues from the children. Such teacher actions could promote the conversational context of ICs, with the ultimate goal of helping children feel comfortable and valued, which will encourage their participation. Increased participation in ICs means increased opportunities for cognitive and language growth.

Using multimodal resources. Related to responsiveness is the teachers' frequent use of multimodal resources. Rheta, Krsiti and WenDee used gestures (embodied actions), words from the child's home languages (such as Japanese), and physical objects to support their communication. In the high-participation episodes, teachers and children's use of multimodal resources encouraged children to participate in the conversation, especially the DLLs, a finding that is consistent with prior research (Jurrow & Creighton, 2005). Yamauchi, Im and Schonleber (2012) wrote about the importance of using both verbal and non-verbal forms of communication in ICs, which my data confirmed. Including non-verbal communication in my analysis helped me recognize a variety of participation moves that I would have otherwise missed had I just focused on verbal participation. Specific examples of using gesturing as a resource in the data included Kaito's pointing and Rheta's use of hand motions to demonstrate picking and smashing berries. Another example was WenDee, Tiff and Josh's use of their hands to scaffold their counting activity. In both cases, the children were highly responsive to the non-verbal gestures and contributed verbally to the conversation in the turns after the resources were used.

The idea of orientating one's speech towards an intended coparticipant in a conversation is called recipient design in the conversation analysis literature (Sacks,

Schegloff, & Jefferson, 1974). Cahill and Papageorgiou's (2007) article studied doctor's use of recipient design with child patients and found that when doctors directed their gaze to the child, used the child's name and sat directly next to the child, he or she participated more in a consultation. Rheta's Example 2 showed how teachers also use recipient design to encourage children's coparticipation. Throughout the example, Rheta frequently used Kaito's name, moved his chair close to her, and integrated Japanese words. Jurrow and Creighton (2005) also described in their article how teachers' integration of children's home language into a conversation supported student participation. Jurrow and Creighton presented an episode in which the teacher mirrored a child's Spanish contribution to a science conversation by responding in Spanish. After the exchange, the child went on to share more about her scientific thinking, something she had rarely done before.

As both Rheta and WenDee emphasized in their interviews, children's level of comfort influences the degree to which they participate in a conversation. Teachers showing knowledge of children's backgrounds and an orientation towards their communication preferences appeared to influence the child's engagement and ultimately their learning opportunities. Au and Mason (1981) looked at the effect of teachers allowing Hawaiian children to use their preferred participation structure of "talk-story" or allowing overlapping speech in highly collaborative classroom discussions. The children participated more in "talk-story" discussions than other more traditional forms of classroom interactions.

My findings addressed a question voiced by Yamauchi, Im and Schonleber (2012) related to how children's backgrounds influence ICs. The data showed that teachers

adjust their conversations and illustrate an orientation towards a child's background, as demonstrated in Rheta's example with Kaito. When teachers make such adjustments, the children responded positively by participating more in the IC.

I observed WenDee adjusting her tone and rhythm throughout her recordings. She frequently sang to the children and described this strategy in her interview. WenDee believed that singing to children helped engage them in conversations, as the children seemed to pay more attention when she sang. I believe WenDee's purposeful use of singing, such as singing books, is an example of her designing her speech to encourage children to coparticipate in an interaction. WenDee appeared to be intuitively adjusting her rhythm to one to which the children are more responsive. Bernhardt (1982) researched the role of rhythm in classroom communication of Athabaskan teachers with Athabaskan students and found that the teachers often adopted the same rhythm of speech as the students when having a discussion, resulting in higher participation of the children as compared to when teachers used rhythm that was "out of synch" with the students.

Questioning. Questioning is another teacher action that was frequently used throughout the high-participation episodes; in 24 of the 32 of them, teachers asked questions that led to multi-turn responses from the children. Questioning is also a prominent strategy discussed in the literature as a way to promote child engagement (de Rivera, Girolametto, Greenberg, and Weitzman, 2005; Lee and Kinzie, 2012). WenDee, Rheta and Kristi were effective in asking questions that encouraged children's participation in the conversations without overwhelming them.

It is not easy to ask effective questions. If questions are overly abstract or seemingly irrelevant to the task at hand, they can stifle children, as Rheta mentioned in

her interview and the literature describes (Chapman, 2000; Lobman, 2006; Tharp et al., 2007; Weitzman & Greenberg, 2002). Weitzman and Greenberg emphasized the importance of educators using questions that match children's stage of communication writing, "You can't avoid asking children questions they don't understand, nor should you try to. However, you should be aware of the types of questions that will frustrate children or end the conversation because they are inappropriately complex" (p. 136). The authors recommended that if educators find that children are not responding to open-ended questions, they should narrow them with modified follow-up questions, something I observed Kristi doing in her exemplars.

Questions are clearly important to ICs because they can communicate interest in a coparticipant's thoughts and invite children to take turns in the conversation.

Appropriately crafted questions can assist children to think about concepts in a more complex way. However, asking questions that ignite children's curiosity without overwhelming them, takes a high degree of sensitivity to children's developmental levels. My results showed that questions that were topic-continuing, or linked to what the children just said or did, consistently prompted participation, a finding that is supported by de Rivera, Girolametto, Greenberg, and Weitzman's (2005). Rheta, WenDee and Kristi used a mix of open-ended and closed-ended questions. Closed-ended questions were more frequently observed, especially with DLLs and the ICs with three-year-olds.

Children in the video clips appeared to have an easier time responding to the closed-ended questions with quicker response rates, however the length of their responses to open-ended questions tended to be longer and more complex, a finding that is consistent with past research (Lee and Kinzie, 2012). When children did not respond to

an open-ended question, the teachers often followed with a some closed-ended questions, a similar pattern to what Lee and Kinzie's found. During the interviews, teachers confirmed using this strategy to support children's participation, particularly with younger preschoolers and DLLs.

Kristi's open-ended "why" questions kept the children participating because she projected herself as a coparticipant in the group. Therefore, when she asked the "why" questions, it was not to judge the children's responses. The "why" questions were posed as wonderings for the whole group to consider. Kristi used questioning to assist Zane to consider his views, judgments and rationales in a way that seemed appropriate for his developmental and linguistic level. Zane remained engaged in the activity. He did not ignore Kristi or walk away from the activity as children did when a question was too complex or presented in a way that projected judgment, as with the counterexample.

My results also confirmed that teachers of young children did ask questions about children's views, judgments and rationales during ICs, and the children remained engaged in the activity, confirming findings by Goh et al. (2012). However, the teachers paired their views, judgments and rationale questions with comments and narrowed them to yes or no answer questions that scaffolded the children's responses. An example of such scaffolding can be seen in WenDee's Exemplar 6 when she asked Josh and Tiff how they knew there were three ingredients in the bowl. When Josh and Tiff did not answer after a pause, WenDee modeled a possible answer with comments and hand gestures that the children mirrored. Then WenDee asked a simpler question, "And what is this one again Tiff?" (Line 52). Tiff easily responded "sugar" with a smile and enthusiastic tone and the conversation continued to flow with high participation from the children.

WenDee, as well as Rheta and Kristi, did not ask repeated “why” questions. Also, the teachers generally avoided making value statements such as, “good job” or “no, that’s wrong.” As Mehan’s (1985) work illustrated, such evaluative statements can stop on-going conversation.

There was a counterexample in the data that showed how the over use of questions discouraged children’s participation. In one episode, the teacher asked a series of “why” questions. The child was not able to respond to the questions and immediately left the activity. The literature on child language acquisition suggests that excessive questioning or overly complex questions can frustrate children and actually inhibit participation (Chapman, 2000; Lobman, 2006; Weitzman & Greenberg, 2002). In the current study, questions that fit with the flow of the conversation (topic-continuing questions) and showed genuine interest on the part of the teacher appeared best for promoting child participation.

An example of appropriately formatted questions can be seen in WenDee’s questions that were highly scaffolded to support the 3-year-olds to participate. She used personally relevant questions that were in response to what the children said. The children answered the questions with one word and WenDee gave them feedback to model expanding their answers. I would argue that her questioning was within the children’s developmental level in terms of what they are capable of answering.

I believe “why” questions can communicate an expectation that the listener has a formed answer the questioner can assess, which can make the recipient of the question uncomfortable if their understanding of a concept being asked about is still in its infancy. To encourage the children to feel comfortable sharing their thoughts, teachers could

reframe some of their “why” questions to statements that invite children to share their thoughts. Possible ways to encourage children to share their thoughts could be saying things like, “I wonder why that happened,” or, “You just said something really interesting, can you tell us more about your thoughts?” Such comments could serve multiple purposes such as inviting the children to take a turn and encouraging them to share their rationales without being judged or expecting that they have a “correct” answer. The goal with IC is to encourage children to openly explore their ideas and thoughts with others. With “why” questions, the expected next turn is a well-formed explanation. If the child does not already have a well-formed explanation, “why” questions could be intimidating.

Sawyer (2004a), when comparing teaching to improvisation acting, writes that actors are taught to not ask questions because it can overly constrain the possible responses from fellow actors. He suggests that teachers should also be careful not to overuse questions to control the flow of the conversation, such as what I observed in my counterexample. Sawyer recommends, “A teacher, rather than asking a question, might consider making a statement that provides many potential opportunities for response” (p. 197). I believe questioning is an important component of ICs, but teachers should use the strategy conservatively and when the question fits with the flow of the conversation.

Applications to Practice

Because IC is an underused strategy, models and professional support for teachers to enact it would be helpful. The results of this dissertation with specific teacher actions from examples of video recordings that came from “real world” preschool classrooms could help. Identifying and defining the specific actions of these effective teachers could

help heighten awareness of the strategies and make it easier for other early childhood educators to adopt them to their own teaching context. The results of this dissertation could be used in professional development to help preschool teachers to learn how to approach conversations and employ resources, such as tone of voice, types of words, questions, props and gestures, to capture the attention and encourage coparticipation of even the youngest of learners.

Teachers are often encouraged to ask children more questions. As the results of this dissertation illustrated, effective questioning can promote conversation and give teachers information to assess a child's level of understanding. Questioning can also overwhelm and intimidate children, resulting in their disengagement in conversations. An application of this dissertation could be to provide professional development for teachers supporting their effective use of questioning. Such a professional development could emphasize pairing questions with comments, not asking repeated "why" questions, and mixing open-ended with more closed-ended questions.

Limitations and Future Research

Limitations. A limitation of this dissertation is that the data came from one preschool site. The results cannot be generalized; however, the teacher actions described can still serve as useful examples of ways three effective teachers encouraged children at the site to participate in ICs. The teacher actions were also consistent with strategies described in the literature to encourage participation of young children in adult-child interactions. Yet, it is important to emphasize the results are meant to be descriptive, not prescriptive. Further study of teacher actions to promote child participation at a variety

of preschool sites, even in various countries, could explore whether children's positive reaction to the teacher actions described in this dissertation can be generalized.

A potential positive personal bias towards certain teachers may have limited the results. However, to guard against such bias, I used the ECE-7 coding scores from two independent observers to select the video recordings for my in-depth analysis. Another way bias may have limited my results is that I was very reluctant to share counterexamples showing a potential positive bias. A future direction for this work could be to have a colleague analyze the same video recordings to determine if he or she has similar findings. I also believe there would be value to finding more counterexample to contrast my high-participation exemplars.

Another limitation of my research is that the teachers reported to me that the children were distributed between the classes based on friends and their considerations about even mixes of ability levels. My study would be stronger if I could have randomly distributed the children among the teachers to insure that some teachers did not start with a group of children with higher English vocabulary skills. A follow-up study is needed to confirm the quantitative findings of my dissertation. It should include a pretest administered before the children were exposed to teachers' implementation of IC. There are multiple biological and environmental factors that influence a child's language development and we would expect that vocabulary of all children would increase regardless of exposure to IC. The results of the analyses of covariance in this dissertation do not point to a definite causal relationship between ICs and DLLs or IC and girl's language development; however, the results suggested such a relationship may exist that

should be explored further, perhaps in multiple settings with pre and posttests to attain more conclusive and generalizable results.

Future research. One interesting teacher behavior found in the data that I would like to research further is WenDee's use of song to capture young children's attention and encourage them to engage in activities. I am curious to study more on how her variation in tone, rhythm and pitch engaged the children and if other teachers use similar tone, rhythm and pitch when working with preschool aged children. It would be interesting to do an in-depth literature review on this topic and collect further data on other teachers' use of song to engage their young learners.

Several follow-up studies could be conducted using all of the 27 video recordings. More work could be done to analyze teacher actions when child participation is low. Also, with the aid of a computer program such as the Child Language Analysis or CLAN (MacWhinney, 2000), frequencies of word use, or question type could be analyzed across the 27 hours of video data. Such an analysis could serve as a way to compare the types of words, such as plural pronouns, high enactors of IC use compared to low enactors. CLAN could also assist in a focused analysis of questions used in high ICs compared to low ICs. Teachers' use of questioning was a prevalent strategy in the high-participation recordings. Questions seemed to both encourage and discourage participation, depending on how the questions were delivered and if the teacher provided scaffolding to support the children to answer. Further study is needed to analyze children's reactions to questions and the scaffolding strategies teachers use to support the children. It would be interesting to see if there are patterns related to questioning and the amount of child

participation across the 27 video recordings, something that could be done with the aid of CLAN.

Follow-up studies could help me address possible alternative reasons for my findings. For example, it is possible that the children in the video recordings were responsive to the teacher because of their relationship with her, not necessarily the communicative actions she was using. At the Children's Center, the children self-select their activities. Possibly, the children in the video recordings selected to be with that particular teacher and were highly engaged because they liked her. A follow-up study analyzing teacher actions and children's responses in ICs where the children do not self-select the activity could help address this possible alternative reason for children's high rates of participation.

Another alternative factor that could be influencing my results is children's culturally influenced communication preferences. A follow-up study could address the possibility of cultural influences on children's participation in IC. For example, it would be interesting to do a case study of a particular child's participation when working with different teachers, or to study communication practices of teachers working in small groups in different countries.

The results of this dissertation provide a good starting point to understanding the complex enterprise of having conversations with very young learners. The examples captured highly responsive teachers not only promoting children's participation, but also facilitating language development and cognitive growth. The teachers in the exemplars presented in this paper asked appropriate open-ended questions, used multimodal

resources, and created ideal learning context while addressing learning goals bringing together responsiveness, child-directedness, and teacher purposefulness.

APPENDIX A

Conversation Analysis Transcription Conventions

Examples of some conversation analysis transcription conventions are listed in Table A1 (Sidnell, 2010).

Table A1

Examples of CA Transcription Conventions

<u>word</u>	Stress or emphasis in some part of the word
WOrd	Especially loud talk
°	Quiet or soft talk
°word°	Talk between signs is softer than talk around it
↑ ↓	Rise or fall in pitch
< >	Drawn out talk
> <	Rushed talk
hhh	Hearable aspiration
°hh	Hearable inhalation
.	A period indicates falling intonation
=	A continuous utterance with no break or pause
?	Rising intonation
(())	Transcriber's descriptions of events
(.)	A micropause of less than 0.2 of a second
(1)	A pause (the number in parentheses represents length of silence in tenths of a second)
,	Continuing intonation
::	Prolongation or stretching of the sound proceeding the colon
-	Cut-off or self-interruption
[]	Overlapping talk

APPENDIX B
IC Portion of the CREDE ECE-7
An Instrument to Measure Use of the CREDE Standards in Early Childhood Classrooms

Standard	Not Observed (0)	Emerging (1)	Developing (2)	Advancing (3)	Enacting (4)	Exemplary (5)
<i>Instructional Conversation</i>	Not observed	The teacher converses* with a child or the whole class AND uses questioning, listening, or rephrasing to elicit communication.	The teacher converses* with a small group of children AND uses questioning, listening, or rephrasing to elicit communication.	The teacher designs and enacts an instructional conversation (IC) with a small group of children with a clear learning goal AND elicits communication with questioning, listening, rephrasing, or modeling.	The teacher designs and enacts an instructional conversation (IC) with a small group of children on a clear learning goal. The teacher listens carefully to assess and assist understanding toward the goal. The verbal and non-verbal communication ratio of teacher-child turn-taking is approx. 1 to 1.	The teacher designs and enacts an instructional conversation (IC) with a clear learning goal; listens carefully to assess and assist understanding toward the goal AND questions children on their views*, judgments or rationales in reaching the goal. The verbal and non-verbal communication ratio of teacher-child turn-taking is approx. 1 to 1.

Glossary of Terms

Goal: In an Instructional Conversation, the goal is the development of thematic or conceptual understanding.

Assistance: Assistance is a two part process in which the teacher first assesses children's knowledge and skills, then responsively assists development. Types of assistance may include: (a) Modeling -- Providing a demonstration; (b) Feeding Back -- Providing information about children's performances as compared with a standard; (c) Contingency Management: -- Providing rewards or punishments contingent on children's performance; (d) Questioning -- Providing questions that guide children to advance their understanding; (e) Instructions -- Providing clear verbal directions for performance; (f) Cognitive Structuring -- Providing explanations or rules for proceeding; or (g) Task Structuring -- Providing assistance by segmenting or sequencing portions of the task.

Collaboration: Joint activity that results in shared ownership, authorship, use, or responsibility for a product. It can also include division of labor for coordinated sub-sections. However, mere turn taking does not constitute division of labor and, to be considered collaboration, an activity must include interaction between participants. Coordinated activities such as morning calendar, round robin reading, choral responses or calisthenics are rated at the Emerging level for JPA.

Communication: Communication includes verbal and nonverbal forms such as gaining proximity, facial expression, laughing, touching, giving, pulling or pushing away, showing, reaching, waving, pointing, head shaking or nodding, vocalizing, gazing, speaking or repeating words, using pictures, and listening.

Conversation: At least two turn-taking cycles (teacher-children-teacher-children on the same topic/point).

Developmentally Appropriate Methods: For younger ages, this will include pre-literacy methods—Pre-literacy methods are strategies used to teach children skills and behaviors that lead to successful reading. They include methods such as: vocabulary development, print awareness, letter knowledge, phonological awareness, phonemic awareness, etc.

Instructional Conversation (IC): ICs are inclusive of all participants whose contributions are connected to, or extend, the comments and ideas of other participants. In contrast, directed-discussions focus less on developing conceptual understanding and more on known-answer questions and skill development. Instructional conversation focuses on broad topics, main ideas, themes or concepts, is responsive to child contributions, includes participation structures that are familiar to children, and includes open-ended questions and sustained dialogue on a single topic.

Incidental connections: The teacher (a) makes connections between children's experience or knowledge from home, school, or community and the new activity/information on an ad hoc basis to assist understanding, or (b) prompts children to make connections.

Use or elaboration of information provided: Complex thinking can involve children's use or elaboration of information provided that includes processes such as applying, interpreting, categorizing, ordering, evaluating, summarizing, synthesizing, analyzing, exploring, experimenting, determining cause and effect, formulating and solving problems, exploring patterns, making conjectures, generalizing, justifying, and making judgments.

Integrates the new activity/information with what children already know from home, school, or community: (a) children's knowledge or experience is integrated with new information, (b) the basis of the activity is personally relevant to children's lives; or (c) children apply school knowledge in an authentic activity.

Product: Products may be tangible or intangible. Examples of tangible products: food made together, a letter, a collage, or the reenactment of a story. Intangible products include the theme of a story, a concept, idea, procedure, or a plan of action. Intangible products are an achieved physical, psychological, or social state that integrates a series of actions.

Questions children on their views: In an Instructional Conversation, teachers' questioning of children's views is related to children's prior knowledge or experiences relevant to the goal of the conversation.

APPENDIX C

Interview Protocol

WenDee's Interview

- 1) When you are having an IC with your children, what do you do to encourage their participation?
- 2) Do you do anything special to engage your less verbal or dual language learning children?

Show clip-3-295

- 3) What are you doing in this clip to encourage the children to participate?
- 4) What do you think about their participation?

Show clip 4-295

- 5) What are you doing in this clip to encourage the children to participate?
- 6) What do you think about their participation?

Show clip 6-295a

- 7) What are you doing in this clip to encourage the children to participate?
- 8) What do you think about their participation?

Show clip 11-295

- 9) What are you doing in this clip to encourage the children to participate?
- 10) What do you think about their participation?

- 11) Would you say you always have a learning goal during your conversations? Does it promote or inhibit conversations? When you teach, do you improvise? Do you sense a difference in children's participation when you improvise compared to having a more structured lesson? Is there a way you try to do both?

- 12) Tell me about your thinking in terms of asking children about their views, judgments and rationales? (Does it impact participation?)

Rheta's Interview:

- 1) When you are having an IC with your children, what do you do to encourage their participation?
- 2) Do you do anything special to engage your less verbal or dual language learning children?

Show clip-4-271d

- 3) What are you doing in this clip to encourage the children to participate?
- 4) What do you think about their participation?

Show clip 5-298

- 5) What are you doing in this clip to encourage the children to participate?
- 6) What do you think about their participation?

Show clips 9-298a, 9-298b, 9-298c

- 7) What are you doing in this clip to encourage the children to participate?
- 8) What do you think about their participation?

Show clips 10-298

- 9) What are you doing in this clip to encourage the children to participate?
- 10) What do you think about their participation?

- 11) Would you say you always have a learning goal during your conversations? Does it promote or inhibit conversations? When you teach, do you improvise? Do you sense a difference in children's participation when you improvise compared to having a more structured lesson? Is there a way you try to do both?

- 12) Tell me about your thinking in terms of asking children about their views, judgments and rationales? (Does it impact participation?)

Kristi's Interview

- 1) When you are having an IC with your children, what do you do to encourage their participation?
- 2) Do you do anything special to engage your less verbal or dual language learning children?

Show clip-5-262

- 3) What are you doing in this clip to encourage the children to participate?
- 4) What do you think about their participation?

Show clip 6-262

- 5) What are you doing in this clip to encourage the children to participate?
- 6) What do you think about their participation?

Show clip 9-262

- 7) What are you doing in this clip to encourage the children to participate?
- 8) What do you think about their participation?
- 9) Tell me about your use of questioning during ICs.
- 10) How does questioning influence children's participation in ICs? Is there a difference between the type of questions you use (open-ended versus closed-ended)?
- 11) Tell me about your thinking in terms of asking children about their views, judgments and rationales? (Does it impact participation?)

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