



## Activity Setting Influences on the Early Language Production of a Child with a Cleft Lip and Palate

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### ABSTRACT

This *CASEinPoint* includes the results of a study which examined variations in one child's language production associated with participation in different interest-based everyday activity settings. The child's language was monitored daily over a two-month period. Findings showed that language production varied according to the type of activity settings for this child, and that interest-based participation in everyday activities was associated with more language production. Implications for assessment and intervention are described.

### INTRODUCTION

The purpose of this *CASEinPoint* is to describe the results of a study assessing variations in a child's language production over a two month period of time in five different interest-based activities. Parents used contextually mediated practices (CMP) to promote their child's participation in five different interest-based everyday activities and used responsive teaching strategies for supporting the child's language production in the settings. CMP is a promotional approach to therapy and early childhood intervention that uses *everyday* family and community activities as sources of child learning opportunities and child *interests* as the basis of child participation in the activities where competence enhancement is *mediated* by the social and nonsocial experiences afforded a child in the everyday activity (Dunst, Bruder et al., 2001; Dunst, Bruder, Trivette, & Hamby, 2005; Dunst, Herter, & Shields, 2000).

It is generally recognized that communication interventions are more likely to be successful if they are implemented in the context of children's everyday activity (e.g., Woods, Kashinath, & Goldstein, 2004). It would therefore seem important to understand both the characteristics and types of activities that are most likely to provide children ample opportunities to acquire, practice, and use communication skills in interactions with others. Several researchers have examined participation in different everyday contexts and have found that the characteristics of the activities (child interest, richness of material/content, etc.) as well as adult interactional behaviors influence child language production (e.g., Hart

& Risley, 1999; O'Brien & Bi, 1995; Odom, Brown, Schwartz, Zercher, & Sandall, 2002; Snow & Dickinson, 1990).

## METHOD

### *Participant*

Susie was 28 months old at the beginning of the study. She was born with a cleft lip and palate which were successfully repaired at 10 months of age. Practitioner administered developmental scales showed no delays in Susie's development other than a 22% discrepancy between her expressive and receptive language scores (Hresko, Miguel, Sherbenou, & Burton, 1994). Susie had not received any traditional speech and language therapy prior to or during the conduct of the study.

### *Procedure*

One of the investigators (C.G.) met with Susie's mother to describe the CMP practice and to explain the purpose of the study. The procedure included strategies to identify Susie's interests and the everyday activities that could be used as the contexts of interest expression, and to describe the use of responsive teaching procedures to facilitate child language in the interest-based participation in the everyday activity settings.

Child interests were identified by asking the parents to describe Susie's likes, preferences, and favorites (Dunst, Herter et al., 2000). This was done by asking questions like: "What is your child good at doing?" and "What makes your child smile, laugh, and/or work hard?" Some of Susie's interests included music, playing outside, packing and unpacking items, pretending, animals, drawing, and playing with her brother.

Everyday activity settings were identified by asking Susie's mother to describe the everyday experiences, opportunities, and events that involve her interactions with people and objects (Dunst, Hamby, Trivette, Raab, & Bruder, 2000). This was done by asking questions like: "Where and with whom does your child spend their day?" and "What does a typical weekday or weekend look like for you and your child?" Some of Susie's activity settings included her playhouse, her play kitchen, looking at pictures, church activities, ball field, reading/listening to stories, watching television, playing with brother, art activities, and playing with the dog.

After identifying both child interests and everyday activity settings, the investigator and mother identified those activity settings that provided opportunities for interest expression which became the focus of intervention. Five activity settings were selected that would provide the best opportunities for interest-based learning.

The everyday activities chosen for Susie were playing with her brother, reading books, a playhouse, playing in the kitchen, and drawing and coloring. For this particular study, the activity settings used as the contexts for intervention were ones that not only provided many opportunities for child interest-based expression but also provided Susie with many language expression opportunities.

Responsive teaching was the primary method used for promoting child communicative behavior in the chosen activity settings (Raab, Wortman Lowe, & Dunst, 1991). Responsive teaching strategies include caregiver responsiveness, modeling, and elaborations directly related to the child's communicative interests and abilities within an activity setting. The parents were provided opportunities to observe the responsive teaching strategy, practice the strategy being implemented by one of the investigators, and receive feedback on their use of the practice. Parents received training on using the strategy until they were comfortable using responsive teaching in the activity settings.

### *Language Recording*

For each day that Susie participated in a target activity, her parents recorded her language use. Her parents also maintained a log of qualitative information about their child's language use in the activity settings. Information recorded in the logs included whether or not Susie engaged in the activity settings on a given day, if she enjoyed participation in the activity settings, if she remained engaged in the activity settings, and if she had the chance to learn anything new in the activity settings. A follow-up interview was conducted with the mother to compare the findings from the study with the mother's assessment of which activity settings provided Susie the most interest-based learning opportunities.

### *Research Design*

A single participant 5-Between Activity Setting x 26 Days of Data Collection research design was used to examine the extent to which language production varied as a function of activity setting. A 5-Between Block of Days X 5-Between Activity Setting ANOVA was used to determine if there was differential influences of activity setting on child language production.

## RESULTS

### *Quantitative Findings*

Figure 1 shows the cumulative number of words used by Susie during the monitoring period. As can be seen, Susie showed a consistent pattern of increased lan-

guage production across the 26 days of the study. She was using about 150 words at the beginning of the study, and by the end of the monitoring period, she had produced nearly 5900 words in the target everyday activities.

Figure 2 shows the cumulative number of words used in each of the five activity settings during the 26 day monitoring period. At the beginning of the monitoring period, language use in the activity settings was for the most part the same. Toward the end of the monitoring period, differences emerged in language production between the activity settings. As can be seen, the playhouse, playing in the kitchen, and playing with her brother elicited the largest amount of language production, whereas book reading and coloring/drawing was associated with less language production.

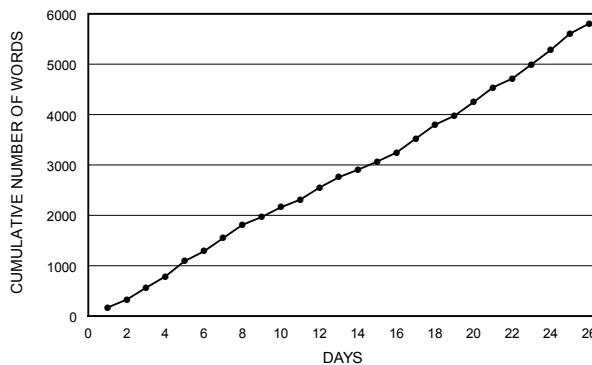
The extent to which the results shown in Figure 2 were statistically significant was determined by a 5-Between Block of Days X 5-Between Type of Activity Setting ANOVA. The analysis produced a main effect for block-of-days,  $F(4, 100) = 478.73, p < .0001$  and a main effect for activity settings,  $F(4, 100) = 20.88, p < .0001$ . Both main effects were qualified by a block-of-days by activity setting interaction,  $F(16, 100) = 7.07, p < .0001$ , which is shown in Figure 3. As can be seen, the differential influences of the activity settings is manifest by the fourth block of days and is especially pronounced by the last block of days.

*Qualitative Findings*

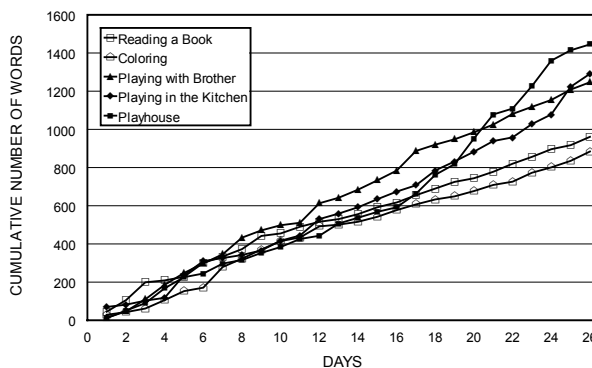
Information obtained from the daily logs maintained by Susie’s mother was used to supplement the quantitative findings. The mother’s responses to a number of open-ended questions marked important transitions in Susie’s language use during the monitoring period. For example, Susie’s mother recorded the point in time that she noticed Susie’s interest in book reading and coloring had lessened which coincided with the differences found in her language production in those two activity settings (Figure 2) compared to that in the other activities. Susie’s mother also noted the times at which other family members reported that Susie’s speech was easier for them to understand. Susie’s mother documented increased intelligibility as early as four weeks into the intervention period which corresponds to approximately day 18 on Figures 1 and 2.

*Follow-up Interview*

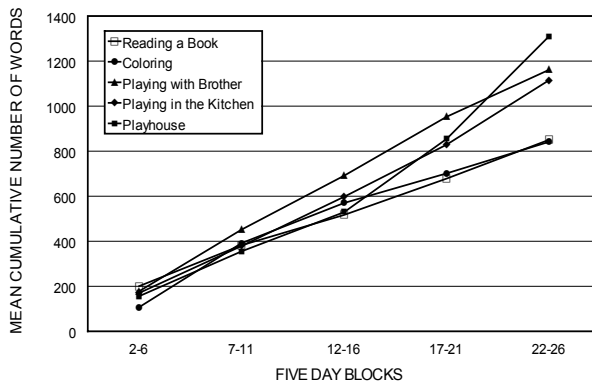
A follow up interview with Susie’s mother was conducted to determine the extent to which the pattern of findings reported in figures 2 and 3 matched the mother’s assessment of the intervention outcomes.



**Figure 1. Cumulative number of words used by Susie during the 26 days of monitoring her language use.**



**Figure 2. Cumulative number of words used by Susie in the five activity settings constituting the focus of intervention.**



**Figure 3. Cumulative number of words used by Susie organized by successive five-day blocks.**

Susie's mother was asked to rank order the activity settings constituting the focus of intervention from the one that she considered the most interesting to Susie to the one that she considered the least interesting to her daughter. The results were an exact match to the order of the activity settings findings shown in Figure 2.

## DISCUSSION

Findings showed that there were significant variations in language production across activity settings. Closer examination of the content and characteristics of the activity settings suggests that several factors contributed to the observed variations. As mentioned earlier, Susie showed more interests in certain activities than others. Therefore, the extent to which an activity was interesting to Susie appeared as a factor accounting for the observed language production differences consistent with the interest-based learning literature (Raab & Dunst, 2005).

Susie's mother also reported that the activity settings which elicited the most language across time allowed for a broader range of opportunities for conversation and communication. For example, the playhouse was located outside the family's home and Susie's mother reported that not only did the playhouse allow for a wide variety of conversation topics, but the fact that it was outside also contributed to the broader range of conversation topics (weather, animals, etc.). In contrast, conversations during the coloring/drawing activity were for the most part limited to the pictures she was coloring or drawing. The former indicates that the "richness" of language learning opportunities is an important factor contributing to children's language production. For example, Hart and Risley (1999) noted that children who were exposed to a variety of language experiences (e.g., cooking, laundry, grocery store, bank, post office) regularly at home and in their community tended to have larger vocabularies.

The third factor contributing to Susie's language productions appears to be the types of interactions that occurred between her and the adults in the activity. The mother reported that the playhouse and kitchen activities elicited longer and more reciprocal dialogue between her and her daughter than did other activities. In contrast, the book reading activity tended to elicit more one-sided conversations (Mother reading the book and Susie listening to the story) and more directive conversations (Where's the dog?). The coloring/drawing activity also tended to elicit more directive interactions from Susie's mother (What are you coloring?, What color is it?). This is consistent with the research indicating a responsive interaction style promotes child language production (e.g.,

Girolametto & Tannock, 1994; Girolametto, Weitzman, & Duff, 2000).

The data from this study provides support for the contention that certain person and environmental characteristics of activity settings either enhance or impede language production (Bronfenbrenner, 1993). The findings have major implications for how everyday activities are used as sources of natural learning environments (e.g., Dunst, Trivette, Humphries, Raab, & Roper, 2001; Roper & Dunst, 2003). For example, as practitioners are being asked to implement their interventions in natural environments (Duchan, 1997), it is important for practitioners to support caregivers' understanding of those characteristics that matter most in terms of promoting child language production as well as other child behavior. It seems prudent that practitioners spend more time increasing parents' understanding and use of those environments and activity setting characteristics that support child language production rather than focusing on production of child language during a 30-45 minute therapy session which may or may not generalize into the child's natural environments. If parents better understand what conditions and strategies are best suited for language production, then they are in a better position to support their children's learning throughout the day during times that are both meaningful and interesting to the child. Findings from the study reported in this *CASEinPoint* provide support for the approach to intervention used to promote Susie's language production.

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