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AUTHOR Nicassio, Frank J.
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ABSTRACT

In order to establish an initial data source for elementary level home-based intervention programs, 18 dyads of second-graders and their parents were divided into three mutually exclusive achievement groups and observed while completing an instructional tool introduced into the home by the childs' school. Parent/child interactions were stimulated by means of a figure identification task and recorded on cassette audio tape recorder. Verbalizations resulting from the task were coded into speech acts, defined as statements, requests, and responses. Reliability for the coding procedure was ninety five percent. Analysis indicated: differential use of speech acts by parents and children across achievement differential performance rates and task outcomes across achievement levels, a relationship between achievement and socioeconmic status and a relationship between language function and task performance. The data are illustrated in tables. Parents of high achievers appeared to use proportionatly more statements in their verbalizations with the children, while the parents of low achievers made proportionaltely more requests. Excerpts illustrate the different ways in which parents used language to help their children overcome a performance impasse. (Author/AEF)

Speech Act Analysis of Instructional Communications Resulting From a Home-Based Learning Task: A Job Just Begun[1]

Frank J. Nicassio
Applied Learning Lab
Education Service District,
Pendleton, Oregon

Division C: Learning and Instruction
American Educational Research Association
Los Angeles, California
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Abstract

In order to establish an initial data source for elementary level home-based intervention programs, eighteen dyads of second-graders and their parents were divided into three mutually exclusive achievement groups and observed while completing an instructional task introduced into the home by the child's school. Verbalizations were coded into speech acts and trends were identified. Analyses indicated: differential use of speech acts by parents and children across achievement levels, differential performance rates and task outcomes across achievement levels, a relationship between achievement and socioeconomic status, and a relationship between language function and task performance.

Speech Act Analysis of Instructional Communications Resulting From a Home-Based Learning Task: A Job Just Begun[1]

Home-based remedial intervention programs that use parents as tutors of their own children have expanded beyond preschool origins to include low achieving school children and their families.[2] Of significance to elementary-level programs is that the quality of the home-verbal environment and the characteristics of parent-child interaction have been cited as contributors to child development and performance, and to the positive outcome of home-based compensatory education efforts (Bloom, 1976; Bronfenbrenner, 1974; Clarke-Stewart, 1973; Epstein & Evans, 1979; Gordon, 1969; Hess & Azuma, 1976; Levenstein, 1970; Miller, 1970; Sadler, Stewart & Dokecki, 1973; Weikart & Lambie, 1968; Yakima Public Schools, 1975.) It has not been possible, however, to locate systematic observations of communication usage during the instruction of school children in the home by their parents. Home-based educators must, as a consequence, derive their assumptions and prescriptive recommendations from studies involving infants and preschoolers (Bloom, Rocissano & Hood, 1976; Clarke-Stewart, 1973; Feshbach, 1973; Schlieper, 1975), from observations of spontaneous discourse within the home or classroom (Horner & Gussow, 1972; Mishler, 1975, 1978), from studies of the communicative characteristics of diagnostically defined populations (Bedrosian & Prutting, 1978; Byassee & Murrell, 1975; Campbell, 1975; Covelman, 1975; DeMello, 1976; Noel, 1980), from studies conducted in the laboratory (Garvey, 1975; Hess & Shipman, 1965, 1967), or from other out-of-context research.

Relationships between home-environment and child performance variables have been firmly established (Bloom, 1976; Coleman et al., 1966; Deutsch, 1973; Hess, 1970; Holley, 1916.) By channeling alternatives for action and thought, the

family is believed to shape language development, identify sources of information as worthy of attention, identify characteristics of information available for assimilation and accommodation, model strategies for processing internal and external events, cultivate learning to learn skills, and encourage school related interests and values (Bloom, 1976; Feuerstein, 1980; Glaser, 1977; Hess & Shipman, 1965, 1967; Miller, 1970.) These *antecedents to achievement*, if actually operative in the home's verbal and cognitive environment, should become manifest during the act of parental instruction. The identification of verbal communication patterns should have relevance for those educators who seek to formalize the interactions of parents and children during instructional episodes. With the objective of creating an initial data base, the present research sought to: 1) establish a baseline for speech act usage by parent-child dyads that engaged in a teaching and learning task introduced into the home by the child's school; 2) determine whether or not parental speech act usage would vary across children's achievement levels; 3) determine if a relationship existed between children's school achievement and parent-child task performance; and 4) determine if a relationship existed between dyad task performance and the use of language as an instructional tool.

METHOD

Sample. Under the aegis of the home-based intervention program operated by the Margaret Sheehy School, Merced City School District (California), eighteen dyads of second-grade children and their parents were selected and divided into three mutually exclusive achievement groups. The six dyads in Group I were formed from parent-child pairs in which the child scored from between the 1st through the 10th percentile on the reading subtests of the Stanford Achievement Test (SAT), Level 1, Form B. The six dyads in Group II were comprised of pairs in which the child scored from between the 41st through the 60th percentile, whereas Group III

children scored from between the 90th through the 99th percentile.

Children were not participants of the home-based intervention program and were considered to be neither organically retarded, perceptually disabled, nor mentally gifted by the school's assessment team. The parent who had assumed the major responsibility for preschool child-care and who would work most frequently with the child if he/she were to participate in home-based intervention was selected as the second member of the dyad. This adult, referred to as the focal parent, was the mother in every case except two in which grandmothers had undertaken child rearing responsibilities since infancy.

Of the six boys in Group I, one had a Spanish surname, three were Black, and two were Anglo. Of the two boys and four girls in Group II, two had Spanish surnames, one was Black, and three were Anglo. Of the two boys and four girls in Group III, one had a Spanish surname, one was Black, and four were Anglo. The sample exhausted the entire pool of consenting families which of practical necessity is one characteristic defining the target group of home-based intervention efforts.

Task Apparatus. Learning oriented interactions were stimulated by means of a figure identification task adapted from the communication game used by Krauss and Glucksberg (1969, 1977). The task consisted of eight blocks and two spindles for use by the child, an identical matching set of blocks and a single spindle for use by the adult, and a portable, table top divider used to separate subjects from each other's view. The blocks were center drilled wooden cubes that could be dropped onto the dowel spindles which were mounted perpendicular to a wooden base. To serve as referential cues one of the child's spindles was painted red and the other blue. Affixed to a single face of each block was a white label bearing a unique black design. Five of the designs were facsimiles of Krauss and

Glucksberg's (1977), whereas the remaining three were created for this study (see Figure 1). Two-dimensional nonsense designs were selected in order to increase

Figure 1 about here

the *culture-fair* quality of the task. Based on the experience of Krauss and Glucksberg, it was anticipated that the patterns would evoke equivocal descriptions and make it necessary for all dyads to formulate novel messages. Evidence from cross-cultural studies cited by Glick (1975) suggested that dyads might be expected to characterize the unfamiliar graphical designs by means of praphrase and metaphor. It was also reasonable to assume that parents and children would have experience in communicating about ambiguous referents and events; from birth onward, child and caretaker construct shared concepts of referents, the names of which are not yet part of the learner's established lexicon. The interaction associated with this mutual process would seem to characterize what is meant by teaching and learning.

The dividing screen was used to place the burden of interaction onto verbal utterances which are the main vehicle of communication (Clark & Clark, 1977) and the phenomenon central to this investigation. Interaction was recorded with a cassette audiotape recorder.

Task Procedures. The matching task was introduced to families as the "guessing game" and was engaged in by dyads in the evening or on the weekend. A set of standardized procedures were set into motion weeks prior to the experimental episode in order to reduce the intrusive nature of E's presence in the home and to insure uniform presentation of the task to all dyads.

During the episode, the parent was instructed in game procedures while the child waited in an adjoining room. The parent's understanding was assured by

having her repeat the game's major steps, and by means of instructional and pictorial prompt cards affixed to her side of the table top divider.

The object of the game, known only to the parent, was for dyad members to build two matching stacks of blocks while separated from each other's view. The child's 8 blocks were presented on the blue spindle in a fixed but randomly predetermined order. The duplicate set of blocks was laid out on the parent's side of the table in a random array. Since only the parent knew the object of the game, she found it necessary to instruct the child to remove each block in succession from the blue holding spindle, place it on the red receiving spindle, and describe the design in enough detail to enable the selection and placement of her own matching block on her single spindle. A perfect score resulted if all 8 of the parent's block designs were stacked in an order identical to the child's.

No restrictions were imposed on verbal interaction. Parent and child could freely communicate as they established the game rules together, coped with false starts, rectified discovered errors, negotiated the conclusion of the episode, and congratulated and commiserated during post-task scoring. A Group II dyad was allowed to proceed in Spanish when it became obvious that, although they spoke English with proficiency, it was not the preferred language of the home. This deviation in procedure was judged by E to add validity and robustness to results.

Once the game was in play, E left the immediate vicinity of the action so the dyad would not seek "expert" advice. Dyad activity was observed from a distance while E conversed with other family members or entertained siblings.

At the conclusion of the game families scored their performance, listened to as much of the audiotape as they desired, and were given the opportunity to keep the recording and withdraw from the study. No family chose this option and all appeared to be at ease and to enjoy the encounter. The visit was terminated by giving the family a packet of learning activities for use at home.

Coding Procedures. Dore (1974a, 1974b, 1975) has discussed the concept of the *speech act* at length and has identified it as "a unit of linguistic communication ...which functions to convey a speaker's conceptual representations and intentions" (Dore, 1974a, p. 344). Prutting and her colleagues (Prutting et al., 1978) operationally defined a system of speech acts for their investigation into the discourse characteristics of children and speech clinicians and were able to quantify interactive qualities and to demonstrate the use of patterned communications in a therapeutic setting. With direction from Prutting's productive effort, a complex of 36 speech acts was developed and employed in a matrix analysis of the instructional communications that occured during the home task described above. The matrix analysis was procedurally cumbersome, and the results were difficult to interpret due to the large number of speech act categories employed (see Nicassio, 1979). Although elaborately defined systems of speech acts can optimize the probability of detecting how specific linguistic features function as conceptual and instrumental problem solving tools, many technical problems remain to be addressed. Considering the foregoing difficulties of interpretation only three rudimentary forms of speech acts are discussed in this paper.

Audio recordings were transcribed verbatim and then segmented into communication units codable as one of the three rudimentary speech acts which were defined as follows:

STATEMENTS - Communication units structured (contextually, phonemically, and prosodically) so as to induce in the listener the recognition that the speaker intends his/her verbalization to be taken as a representation of an observable (verifiable) aspect of the environment or the expression of the speaker's belief (attitude, opinion) about some unobservable aspect of the environment. Examples include: "There are some blocks and pegs in front of you;" "The little pictures

don't mean anything;" "This one is hard;" "That looks like a shirt;" "I'm sorry, but I've kinda forgotten what you told me;" "We got one wrong."

REQUESTS - Communication units structured (contextually, phonemically, and prosodically) so as to induce in the listener the recognition that the requestor intends his/her verbalization to serve as a solicitation. Examples include: "What's the next one look like?" "Can you think of something?" "Are you still there?" "Did you use them all?"

RESPONSES - Communication units structured (contextually, phonemically, and prosodically) so as to induce in the listener the recognition that the responder recognizes the intention of the listener's previous verbalization, and that the responder intends his/her utterance to be taken as a compliment to the listener's previous utterance. Examples include, "I said it looked like a triangle;" "Kind of like a key;" "I don't know;" "Ahmm (yes)"; "Uhun (no)."

Reliability. A rule was followed in transcribing audiotapes that required the typist-transcriber and E to agree on the meaningfulness or unintelligibility of utterances. Inter-transcriber reliability was 100%. The determination of coding reliability followed another procedure.

A twenty page (15%) sample of transcript was randomly selected from the corpus of coded data. Each page was reproduced with coding categories deleted and submitted to an independent coder. Reliability was computed with the following formula: Reliability = (number of agreements + number of agreements + number of disagreements) X 100. This method yielded an inter-coder reliability for speech acts of 85%. E subsequently recoded the entire data set and obtained an intra-coder reliability of 95%.

RESULTS

Table 1 summarizes descriptive and performance measures for parent-child

dyads. Education, employment, and income data were acquired by questionnaire and used to estimate family socioeconomic status (SES) using methods of the U.S. Census Bureau (no date). Obtained SES scores were 45.67, 53.33 and 74.33 for Groups I, II, and III respectively. Analysis of variance indicated significant between group differences, $F(2,15) = 7.41$, $p < .01$. As anticipated, SES and achievement varied together in magnitude.

The number of correct parent-child block-design matches and time to task completion were used as measures of dyad performance. The mean number of correct matches for Groups I through III were 4.00, 5.00, and 7.67, respectively. Analysis of variance was significant, $F(2,15) = 4.18$, $p < .05$. While no dyad of Group I obtained a perfect score, only one dyad of Group III obtained a score less than perfect. A Spearman r_s of 0.6052 indicated a monotone increasing relationship with achievement.

Table 1 about here

Average times to task completion were 11.52, 8.31, and 6.81 minutes for the three groups. These between groups differences were not statistically significant, although the direction of the trend is unmistakable. A Spearman r_s of -0.3522 indicated a monotone-decreasing relationship with achievement.

Between-group differences for total number of speech acts uttered were not statistically significant. The volume of language produced, however, varied over achievement level with Group I dyads producing an average of 1.37 times as many speech acts as Groups II and III.

There was also differential usage of Statements, Requests, and Responses by parents and their children. Several clear trends are identified in Table 2. The proportion of Statement and Response usage by parents increased with achievement, while Requests decreased. Variation in Requests and Responses were pronounced.

Trends in children's usage were also evident with Statements varying directly and Responses varying inversely with achievement level.

Table 2 about here

By looking at the linkages between contiguous speech acts, it was possible to identify differences in dyad interaction patterns as defined by joint communicative events. The linkage procedure, (described by Simon and Agazarian, 1970) enabled the formation of four categories of contiguous speech acts. The first category was comprised of all instances in which a parent utterance was immediately followed by a child utterance. The second category contained all instances in which a child utterance was immediately followed by a parent utterance. Categories three and four indexed those instances in which parent and child generated two speech acts in succession. Table 1 presents the seven trends for which the two extreme achievement groups were separated by at least 5 percentage points in production of joint communicative events. Trend 1 shows,

Table 1 about here

that of all parent child contiguities generated by Group I dyads, 18.27% were of the type in which a parent Statement was followed by a child Response. Group II produced 20.59%, while Group III produced 30.27% of this type of joint communication. In sum, trends 1 through 5 indicate that as achievement level increased parents used an increasing proportion of Statements and a decreasing proportion of Requests just prior to children's Responses. Correspondingly, parental feedback Responses appear to have elicited an increasing proportion of Statements from their children. With increasing achievement children's Statements appear to have elicited an increasing proportion of parental Responses while their own

Responses appear to have elicited a decreasing proportion of parental Requests.

Although no multiple utterance patterns emerged for parents, trends 6 and 7 indicate variation in Statement-Statement and Response-Response verbal chainings by their children. With increasing achievement children chained proportionately more Statements and fewer Responses into multiple utterances.

A coarse measure of inter-generational communication similarity was derived by taking category differences within each group shown in Table 2, and then summing these absolute differences over the three speech act categories. In this way the values 89.54, 69.08, and 58.46 were obtained (see Table 2). These values roughly defined an ordinal scale with parents and their low achieving children at one end, parents and their high achieving children at the other, and middle achieving dyads ordered in between. This result suggests an inverse relationship between inter-generational communicative differences and children's achievement.

It can be inferred from the data presented in Tables 1, 2, and 3, that performance outcomes varied, on the average, with speech act usage.

DISCUSSION

Groups of parent-child pairs performed differentially when confronted with a teaching and learning task within the context of their homes. Although performance was related to children's achievement and family SES, these descriptive variables provide few hints as to the factors that may underly accuracy and efficiency. It is clear that the design of this investigation makes impossible the attribution of performance differences to linguistic *causes*; however, language usage varied with task outcome and suggests some communicative processes that may influence differential dyad performance.

Dyads containing the lowest achieving children generated considerably more verbalizations in efforts to complete the matching task. Since these dyads also

exhibited relatively lower performance, their verbalizations may represent less efficient attempts at instruction and learning. Of interest was that parents were identified as the dyad members more likely to make solicitations (Requests), while their children were identified as more likely to produce Responses. This phenomenon has been cited by other researchers and has been interpreted as an adult regulatory strategy (Prutting et al., 1978; Mishler, 1975, 1978). Inspection of the present data showed that this tendency decreased with children's increasing achievement and pointed to an interesting relationship in Statement and Request usage by parents. In groups with higher achieving children, parents used proportionately more Statements to fix the identity of task-specific attributes. In contrast, the parents of lower achievers made proportionately more solicitations with respect to task attributes. These findings, and the trends presented in Table 3 may represent differences in instructional control methods used by adults, and may reveal a naturally occuring "aptitude treatment interaction" between instructional strategies and children's achievement. Excerpts from the transcript illustrate differences in the way two parents used language to help their respective children overcome a performance impasse.

Excerpt
Group I, Dyad L-3

Parent:	Now, child's name.
Child:	What?
Parent:	Put one of those blocks on the other thing.
	And tell me what it is.
	Just tell me.
	I don't want to see it.
	What is it?
Child:	Hmm.
	I don't know.
Parent:	What is it?
	Tell me what it looks like.
Child:	Ahh.
	(Silence exceeding 5 sec.)
Parent:	What it look like?
Child:	(Silence exceeding 5 sec.)

Parent: Say something.
I can't hear you.
Child: I don't know what it is.
Parent: Tell me what it is.
Describe it.
Child: Ehhh.
It has one line on.....
(Silence exceeding 5 sec.)
Parent: I'm talkin' to you.
Child: (Silence exceeding 5 sec.)
Parent: Hey!
You still there?
Child: Yea.
Parent: Okay, tell me what it look like.
Child: (Silence exceeding 5 sec.)
Parent: Talk to me.
Child: It has a circle then a (unclear).
Parent: (Silence exceeding 5 sec.)
What kind of line's it got on it?
Child: A black line and a straight line.

(10.84 minutes to task completion;
4 correct pattern matches).

Excerpt

Group III, Dyad R-6

(Two or three minutes of game time have elapsed prior to this impasse.)

Parent: Does it remind you of anything, (child's name)?
Child: No.
Parent: Nothing?
Child: No.
Parent: Okay, does it have any shapes in it that you recognize?
Child: No.
Parent: None?
Child: No.
Parent: Does it have curves?
Child: Yea.
Parent: How many?
Child: (Silence exceeding 5 sec.)
Parent: Does it have a round circle anywhere?
Child: No.
Parent: Does it have a triangle?
Child: No.
Parent: Does it look like a dress pattern?
Child: No (unclear).
Parent: What does it look like?
To you what does it look like?

Child: Nothing.
Parent: Nothing at all?
How many corners?
Child: (Silence exceeding 5 sec.)
Parent: Does it look like a cloud?
Child: No.
Parent: Like a wrench?
Child: No
Parent: Like a paper clip?
Child: No.
Parent: Like a person?
Child: No.
Parent: Like a spider?
Child: No.
Parent: A horn?
Child: One part of it does.

(6.73 minutes to task completion;
8 correct pattern matches).

It should be noted that vocal rhythm and inflection made clear the intention that many of parent L-3's grammatical assertions ("I can't hear you") served functionally as Requests, while many of R-6's grammatical questions ("Like a wrench?") served functionally as Statements. Additionally, the first parent appeared to support few alternatives for successful solution, while the second directed and redirected attention to referents before the child's eyes. The latter performed more in the manner of the mediating adult described by Bruner (1975), not as a corrector or reinforcer, but rather as an expander and an augmenter who provides a structural framework of shared referents upon which ambiguous information can be fastened for meaningful interpretation. Requests like "What is it?" would seem to carry less information than Requests like "Does it look like a dress pattern?" Less information would seem to provide fewer opportunities for the young learner to either access or create in memory, cognitive structures of task relevant stimuli.

A trend in cross-generation communicative differences was also noted. It was the higher achieving children who most resembled their parents in communicative

production. This finding may highlight the role of feedback during modeling and learning, since it was also the parents allocating a larger proportion of their total verbal production to feedback Responses who were most closely resembled by their children. Responsiveness also suggests the reinforcement by parents of children's communicative participation in discourse and problem solving.

In the manner of their parents, higher achieving children tended to state attributes of task relevant stimuli at proportionately higher rates than their lower achieving peers. Consistent with levels of parental solicitation, lower achieving children responded to Requests for environmental attributes at higher rates than their cohorts; these Responses, in turn, appear to have elicited proportionately higher levels of parental Requests. Children's multiple utterances coincided with this pattern in that higher achieving children chained together proportionately more Statements and fewer Responses. These findings suggest a certain parent-independent task performance on the part of higher achievers.

Opponents of remedial education have argued that performance deficiencies do not exist within the family or within the low achieving child (Bernstein, 1972). Moreover, it has been contended and demonstrated that performance is often a function of the situations and contexts in which children are asked to express their competence (Boggs, 1972; Cole & Bruner, 1971; Dumont, 1972; Philips, 1972,) Given the context of the present study, performance differences could be dismissed as having resulted from group-specific experience with the stimulus designs. Glick has pointed out, for instance, that certain types of visual representations call for interpretations that are "maximally susceptible to cultural convention" (Glick, 1975, p. 615.) Yet, not a single dyad failed to identify and name every stimulus pattern to its mutual satisfaction. In conveying ideas, facts, questions, feelings and the like, dyads at all achievement

levels imputed meaning to one another's verbalizations which consisted of lexical items presumably relevant to each family's language system. Task outcome showed, however, that there was obvious miscalculation with respect to reciprocity in the meanings intended and retrieved. This empirical finding coincided with an impressionistic view that slowly formed after many hours of monitoring tapes: dyad members of higher achieving groups seemed more fluid in their ability to anticipate each other's actions and thoughts. What suggested itself was that some dyads lacked experience in conceptualizing together as a problem solving team.

The possibility of differential team experience motivated a search of the transcript for verbalizations that could serve as markers of joint awareness and joint activity. Examples included: "Like one of those kind *you* draw" (Parent L-4, Group I); "It shaped like one of those candies, *you know*, one of those candies *you* bought" (Child C-4, Group II); or, "Like those old fashioned clothes pin people *we* made at Christmas" (Parent R-2, Group III). Numerical count revealed that this type of reference to shared experience was used by only one dyad in the lowest achieving group, by two dyads in the middle achieving group, and by three dyads in the highest achieving group. This implies that for some dyads, parent-child attention may be synchronized by high resolution propositions that are contextually based in shared experience. Through shared experience and mutual initiation and response, parent and child may gradually select goal directed verbal interaction patterns that are sensitive to their individual proclivities and to the socio-instrumental contexts in which they function. This interpretation corresponds with Bruner's (1975) premise that language is a conventionalized extension of cooperative action and is acquired as an instrument for regulating joint activity and attention. One can speculate that the patterns of speech act contiguities identified in this study are but short grammaticalized artifacts of the mutually derived action formats hypothesized by Bruner.

Jointly regulated verbal-formats that evolve during ontogeny should be of particular interest to home-based interventionists. Experience has shown that tutorial episodes within homes are primed with opportunities for their use, even when carefully structured instructional materials are prescribed. Parent-child pairs have been observed by the writer to rely heavily on pre-established interaction patterns when, for example: the material or instructions provided by the school possessed less than adequate clarity forcing reliance on the parent's transformational skills to occasion successful performance by the child; the parent's responses confused the child; the child's responses confused the parent; parent and child could not come to consensus over meaning; parent or child violated the given-new distinction in discourse; the child tired of an activity and the dyad negotiated a continuance, change, or cessation; etc. It is important for future research to accurately characterize these formats and relate them to issues of home-based tutorials, e.g. how parents help children focus on a system of meaning, how mutual attention is directed and redirected, how language functions in the identification and formation of concepts.

It would be an oversimplification to conclude that parents of low achievers inhibited thought and action while parents of high achievers facilitated such qualities in their children. Variations existed within each achievement group, and within each group were found exemplars of both facilitative and inhibitive parental language usage. Moreover, it is methodologically difficult to determine how much of an interactive episode is shaped by the parent and how much by the child. Mishler (1972), for instance, identified differences in teachers' linguistic styles, but realized that linguistic concepts did not yet exist for disentangling instructional discourse and for linking variations in adult verbal behavior to children's learning and cognitive development. Although linguistic systems of analysis exist for semantics and syntactics, Mishler contended that

"Much work remains to be done with the larger units--interchanges, tri-acts, arguments, discourse--to develop classification systems that are of equal power and utility" (Mishler, 1972, p. 298). The present investigation was an attempted step in that direction. Results of more sophisticated analyses should make it possible to design meaningful experiments, to assist with the development of informed home-based curriculum, to address policy issues concerning the delivery of school services to various social groups without violating cultural integrity, and to succinctly define the communicative events that are the presumed antecedents of achievement.

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Footnotes

[1]This paper is based on portions of a dissertation presented to the University of California, Santa Barbara in May 1979. I am indebted to the following persons for direction, inspiration, cooperation, and support: Professors John A. R. Wilson, John W. Cotton, Jules M. Zimmer, Lawrence J. Hubert, and Carol A. Prutting; the children, parents, and staff of the Margaret Sheehy School, Merced, California, and to Dr. Neil Schmidt who was principal at the time the study was conducted.

[2]Reviews of the intervention research have been presented by Bronfenbrenner (1974, 1975), Chilman (1973), Horowitz and Paden (1973), Miller (1970), Nicassio (1979), and Stearns and Peterson (1973).

Table 1: Summary of descriptive and performance measures for eighteen parent-child dyads.

Variable	Index	Group I	Group II	Group III	ANOVA
Sample Size (parent/child dyads)	n	6	6	6	-
S.A.T. Reading (percentile rank)	Range	1 - 10	41 - 60	90 - 99	-
Socioeconomic Status (SES) (100 points max.)	Mean Range S.D.	45.67 25 - 61 13.58	53.33 38 - 73 10.39	74.33 49 - 87 12.38	**
Number of Correct Block-Design Matches (8 points max.)	Mean Range S.D.	4.00 0 - 6 2.08	5.00 0 - 8 2.83	7.67 6 - 8 0.75	*
Time to Complete Task (minutes)	Mean Range S.D.	11.52 6.01 - 21.47 5.44	8.31 4.32 - 16.92 4.15	6.81 3.78 - 14.30 3.52	n.s.
Speech Acts (frequency)	Total Mean Range S.D.	1335 222.5 154 - 331 68.90	961 160.17 62- 267 69.71	982 163.66 92 - 318 74.02	n.s.

* Statistical significance for $.025 < \alpha < .05$; 2 & 15 d.f.
** Statistical significance for $.005 < \alpha < .01$; 2 & 15 d.f.

n.s. non-significance

Table 2: Percentage of Statements, Requests, and Responses produced by dyad members within three parent-child groups.

	Group I		Group II		Group III	
	Adult	Child	Adult	Child	Adult	Child
No. of Speech Acts	789	546	570	391	525	457
% Statements	37.52	30.04	40.53	37.85	41.90	49.02
% Requests	46.26	8.97	41.58	9.72	34.48	5.25
% Responses	16.22	60.99	17.89	52.43	23.62	45.73
Sum of absolute adult-child differences within each group	89.54		69.08		58.46	

Table 3: Percentage of joint speech act pairs within three achievement groups for Parent-Child, Child-Parent, and Child-Child contiguities.

Trend	Contiguous Speech Acts	Group I	Group II	Group III
	Parent-Child			
1	Statement-Response	18.27[a]	20.59	30.27
2	Request-Response	50.72	39.54	34.35
3	Response-Statement	5.29	8.17	14.28
	Child-Parent			
4	Statement-Response	8.03	11.59[b]	20.89
5	Response-Request	32.60	31.46	18.15
	Child-Child			
6	Statement-Statement	39.84	57.32	65.43[c]
7	Response-Response	20.32	10.98	3.70

[a] 18.27% of all contiguous Parent-Child speech acts produced by Group I dyads were of the type in which a parental Statement preceded a child Response.

[b] 11.59% of all contiguous Child-Parent speech acts produced by Group II dyads were of the type in which a child Statement preceded a parental Response.

[c] 65.43% of all pairs of multiple utterances generated by Group III children were of the type in which two Statements were chained in succession.

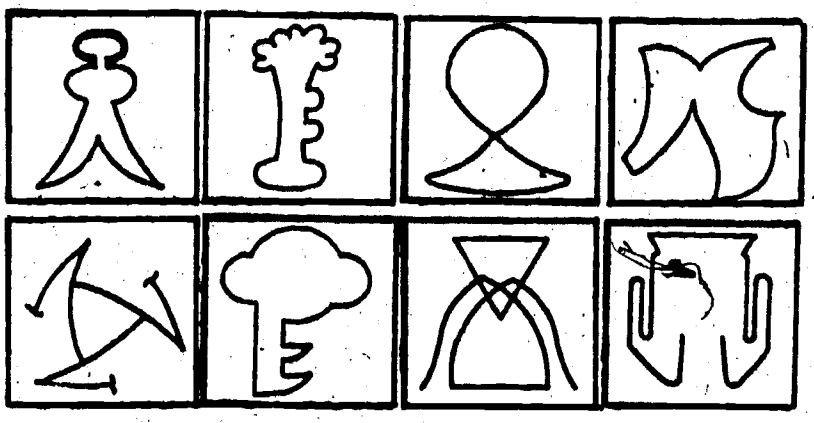

Figure 1: Novel designs displayed on task blocks.

(Adapted from: Krauss, R. M. & Glucksberg, S., Social and non-social speech. Scientific American, 1977, 236 (2), 100 - 105. Used with permission of W. H. Freeman and Company.)