A 35-day applied behavior analysis involving a repeated measure multiple-baseline design across subjects was employed to determine if there was a functional relationship between enriched sociodramatic play and three kindergarten children's language performance. The strategy of the design was to apply the same treatment in sequence across matched subjects exposed to identical environmental conditions. Subjects were selected by matching age, intelligence quotient, ethnic background, and economic status. Six additional children served as playmates for baseline and treatment activities. In the baseline condition, subjects were observed while involved in unstructured play. In the treatment condition, sociodramatic play was enriched through (1) theme-related activities; (2) increased time, space, and props; or (3) facilitation of play. A total of 48 15-minute samples of the three subjects' language during play were audiotaped. Audiotapes were analyzed for vocabulary words specific to the defined theme of play; thought unit length and development (in T-units); total words; words specifying concepts of color, shape, number, quantity, space, and time; and language functions. Findings indicated that a functional relationship exists between sociodramatic play and language performance. (RH)
Abstract

Sociodramatic Play as a Method for Enhancing the Language Performance of Kindergarten Age Students

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This study tested the proposition that children of kindergarten age who had planned opportunities for enriched sociodramatic play would demonstrate increased levels of language performance. Using an innovative approach to study the problem, a 35-day Applied Behavior Analysis repeated measure multiple-baseline design across subjects was undertaken to experimentally determine if there was a functional relationship between enriched sociodramatic play and language performance.

If language is acquired in a social context as recent theory suggests (Bernstein, 1961; Bruner, 1983) then the social activity most enjoyed with peers during the ages of four through six, when much language growth is still occurring (O'Donnell, Griffin & Norris, 1967), should provide an effective vehicle for group language practice and development. This favored social activity has been found to be "sociodramatic play" (role-taking with others) (Erikson, 1963; Piaget, 1962; Smilansky, 1968).

In experimental studies Smilansky (1968), Lovinger (1974), Shores, Hester and Strain (1976), and Rogow (1981) found that the teaching of sociodramatic play techniques to young disadvantaged or physically and language handicapped children resulted in increased language performance. If sociodramatic play is an useful tool for enhancing the language performance of these children, it follows that participation in the activity might increase the performance of young nonhandicapped public school students from a variety of backgrounds. It was predicted that kindergarten-age children who participated in enriched sociodramatic play would (a) use more vocabulary words specific to the defined theme of play, (b) increase mean length of T-unit (index of thought unit length and grammatical development calculated by dividing number of words by number of independent clauses), (c) use an increased number of words, (d) use an increased number of words indicating concepts of color, shape, number, quantity, space, and time, and (e) use language for an increased number of functions (uses).

Method

Although the multiple-baseline design across subjects has been little used outside of a clinical setting for studies of play or language, the design seems particularly well-suited to investigation of the present problem because of (a) close attention given to changes in individual rather than large group behavior, (b) detail and reliability of repeated measurements, and (c) emphasis on practical rather than statistical significance. In this design, the strategy is to apply the same treatment in sequence across matched subjects exposed to identical environmental conditions. (See Hersen & Barlow, 1976.) Internal validity is a function of the researcher's ability to rule out factors other than the treatment variable as possible causes of changes in the dependent variable.
Subjects and Setting

The subjects were enrolled in a summer day care program and entered kindergarten following the study. From the center enrollment three subjects and one alternate were selected by matching age (4-10 to 5-3), I.Q. (98-106), ethnic background (Caucasian), and economic status (two parents with skilled or semi-skilled jobs). Six additional children (age \( X = 4-11 \)) served as "playmates" for baseline and treatment activities.

Data Collection

Forty-eight (21 baseline, 27 treatment) 15-minute samples of the three subjects' language during play were audiotaped. Harnesses devised of plastic lawn chair webbing supported a pocket on each child's chest in which a 5" X 2 1/2" X 1" Panasonic Microcassette Recorder, model RN-107A, could be placed. So as to not reveal the identities of the subjects, all children participating in baseline or treatment activities wore recorder pockets; two recorders were rotated among all children.

The audiotapes were transcribed, analyzed, and frequencies recorded graphically for the following measures: (a) vocabulary words specific to the defined theme of play, (b) mean length of T-unit, (c) total words, (d) words specifying concepts of color, shape, number, quantity, space, and time, and (e) language functions. Procedural reliability was documented by an instrument devised to rate each subject's sociodramatic play during sampling. Wolfgang's (Wolfgang, Mackender & Wolfgang, 1981) teacher behavior continuum was used as a checklist to verify that play facilitation took place during treatment phases of the study and supervision only during baseline.

Interrater reliability was determined by the experimenter and reliability observer independently analyzing transcripts; the larger frequency obtained by one observer was divided into the smaller count obtained by the other observer. The number of function identifications agreed upon by both observers was divided by the total agreements plus disagreements. After achieving an initial criterion of at least 90% agreement on each measure, one baseline and one treatment transcript from each subject was scored for reliability. The reliability observer also checked for accuracy of transcription.

Experimental Design and Procedures

The multiple-baseline design involved first collecting language samples for the three subjects without treatment intervention for eight days (baseline). Second, Subject #1 began the treatment of enriched sociodramatic play while Subjects #2 and #3 continued in baseline conditions (nine days). Third, Subjects #1 and #2 participated in the sociodramatic play, and Subject #3 stayed in the baseline group (nine days). Finally, Subject #3 joined Subjects #1 and #2 in treatment activities (nine days).

Baseline. The baseline condition, "unstructured" play, was play that occurred naturally in the group of children without any special encouragement. An adult was available for supervision only.

Enriched sociodramatic play. During treatment the designated subject or subjects and a play group participated in sociodramatic play enriched three ways:
1. Shared background of information. Theme-related (grocery store, hospital, fast food restaurant) activities such as fiction and non-fiction books, picture discussions, and field trips were provided.

2. Time, space, and props. Twenty to 30 minutes allowed for full involvement in planning and executing the play; adequate space encouraged all children to participate; a number of real or child-sized props (clothing, and grocery, hospital, restaurant equipment, etc.) were provided.

3. Play facilitation. The experimenter or research assistant served as play facilitator employing techniques suggested by Smilansky; Wolfgang's teacher behavior continuum provided a framework for deciding when and how to intervene.

To give added validity the two adults rotated responsibility for baseline and treatment activities. To prevent the subjects from being exposed to treatment materials before the individual baseline phases were completed, a separate classroom was used; the materials were brought in and removed each day.

Results

Visual inspection of the graphic displays and comparison of mean frequencies for baseline and treatment conditions revealed an increase in overall language performance for each subject from the time of introduction into the treatment group through the end of the study, thus documenting three replications of the treatment effect. (See supplementary material.) This demonstration of effectiveness with three different children builds evidence for the generality of the treatment.

Specific findings were as follows:

1. All differences in data could be attributed directly to the subjects' change from baseline to treatment activities.

2. Use of vocabulary words specific to the defined theme increased for all subjects during treatment.

3. Mean length of T-unit increased for all subjects during treatment.

4. Use of all words increased for Subject #1 and #3 during treatment; results were somewhat inconclusive for Subject #2.

5. Use of concepts of color, shape, number, quantity, space, and time increased for Subject #1 and #3 during treatment; results were somewhat inconclusive for Subject #2.

6. All subjects used all seven functions of language during baseline and treatment conditions; mean number of functions increased slightly for one subject and decreased slightly for two subjects during treatment. While the imaginative function during baseline was most frequently a single-word sound effect ("Bang"), the imaginative function during treatment role-played a second function and was a much longer and syntactically complex utterance.
7. Mean reliabilities for baseline and treatment analyses ranged from 100% to 79%.

Conclusions

Based on the evidence, it can be concluded that a functional relationship exists between sociodramatic play and language performance. Additional conclusions suggested by the study and supported by theories of Bruner (1983), Piaget (1962), Vygotsky (1962), Smilansky (1968) and others include:

1. The necessity for language use in negotiating successful play participation results in more complex language structures and usage and in increased practice of vocabulary and concepts.

2. Theme-related sociodramatic play provides a "scaffold" for vocabulary practice, stimulating and supporting the players in use of words not in their daily repertoire.

3. Imaginary adult roles (grocer, doctor, waiter, etc.) and accompanying role-played conversations provide a supportive environment within which children are comfortable to try more complex or "adult-like" language structures.

4. Children are aided by play to assimilate vocabulary, concepts, and information presented in another context.

5. Conceptual abilities of children are stretched through imaginative play.

This study presents evidence to reaffirm the importance of planned play activities in kindergarten programs and suggests enriched sociodramatic play as a vehicle for enhancing language performance. Suggestions for further research include study to determine if the increased language performance generalizes to classroom situations outside of the play setting.
Frequencies for use of vocabulary words specific to the theme of play, baseline and treatment phases.
Mean Length of T-Unit (total words/total T-Units per 15 minutes), baseline and treatment phases.
Frequencies for use of all words, baseline and treatment phases.
Frequencies for use of concept words, baseline and treatment phases.
Abstract References


