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The Effects of the Language for Learning Program on the Receptive Language Skills of Kindergarten Children

Abstract: The results of previous research on the *DISTAR Language I* program suggest that it produces a positive effect on the intellectual and language skills of students with disabilities. In contrast, the results of research on the *DISTAR Language I* program suggest that it may not produce a positive effect on the language skills of children without disabilities. The purpose of this study was to assess the effects of the *Language for Learning* program on the receptive language skills of a general sample of kindergarten children. The *Language for Learning* program is the revised version of the *DISTAR Language I* program. A quasi-experimental design was used to compare the receptive language skills of 21 children who received the *Language for Learning* program with those of 24 children enrolled in a comparison school. The results indicate that the *Language for Learning* program produced both statistically and educationally significant effects on the receptive language skills of children. Results, limitations, and implications are discussed.

Language proficiency requires both producing and understanding words, sounds, and sentences (i.e., structural language) and linking sentences into coherent narratives and understanding social rules for communication. Structural language is composed of six subsystems of receptive (i.e., comprehension) and expressive language. These include receptive and expressive phonology, receptive and expressive semantics, and receptive and expressive syntax (Cohen, 2001). Language related communication is composed of discourse skills (i.e., expressing oneself), narrative discourse (i.e., story telling or retelling), and the pragmatic (i.e., rules for communication in specific situations) aspect of language (Cohen, 2001).

The importance of language to an individual's success cannot be overstated. Language is a socially shared code or system of rules that enables users to transmit ideas to one another through the use of symbols (Bloom & Lahey, 1978; Owens, 2001). Not surprisingly, children with language deficits are at substantially higher risk of a host of negative outcomes such as persistent depressed academic achievement, increased grade retention, demoraliza-

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tion, reading disabilities, and emotional and behavioral disorders (Aram, Ekelman, & Nation, 1984; Beitchman, Cantwell, Forness, Kavale, & Kauffman, 1998; Benner, Nelson, & Epstein, 2002; Catts, 1993; Hinshaw, 1992; Silva, Williams, & McGee, 1987; Tomblin, Zhang, Buckwalter, & Catts, 2000).

The transition to elementary school (i.e., kindergarten) provides a window of opportunity for schools to enhance the language skills of children to prevent academic and social problems. Despite the importance of directly teaching language skills to children, explicit teaching methods are rarely used by teachers (Fillmore & Snow, 2000; Snow, Burns, & Griffin, 1998). Rather, language learning and instruction in typical kindergarten classrooms is primarily child-directed as opposed to teacher-directed, with the assumption that language development is a natural process that cannot be explicitly taught. Language experiences in kindergarten classrooms typically involve a variety of activities such as the reading and telling of stories, playing games with words (e.g., rhyming), and singing. In this context, it is of interest to assess the effects of explicit language development programs on the language skills of young children. One such program, *Language for Learning* (Englemann & Osborn, 1999) is ideally suited to be delivered by teachers to all kindergarten children because it is intended to teach young students (ages 4 through 6) the language skills necessary for the understanding of oral and written language explicitly.

The *Language for Learning* program is a revised version of the *DISTAR Language I* program and is designed to teach young students the language skills and concepts necessary for the understanding of oral and written language. Several features of the *DISTAR Language I* program have been revised in *Language for Learning*. First, the introduction of skills and concepts has been accelerated to provide children the opportunity to learn more content. Second, the lesson events have been reorganized. Lessons now begin with exercises that do not involve illustrations. Once these are complete, the teacher and students move to exercises with illustrations. Third, the exercises with illustrations have been redesigned so that they are easier to use. The directions to the teacher are now on the left and the illustrations are to the right of the presentation book. Finally, the program is generally easier to use (e.g., the presentation books, type, and illustrations are bigger and are in color).

To date, nine studies have examined the effectiveness of the *DISTAR Language I* program (Beveridge & Jerrams, 1981; Cole & Dale, 1986; Cole, Dale, & Mills, 1991; Cole, Dale, Mills, & Jenkins, 1993; Darch, Gersten, & Taylor, 1987; Gersten & Maggs, 1982; Lloyd, Epstein, & Cullinan, 1981; Maggs & Morath, 1976; Mitchell, Evans, & Bernard, 1978). With one exception (Beveridge & Jerrams, 1981), researchers studied the effects of the *DISTAR Language I* program on the intellectual and/or language skills of children with disabilities (e.g., developmental disabilities). Taken together, the results of these studies suggest that the program procedures have a positive effect on such skills. For example, Maggs and Morath (1976) investigated the effects of the *DISTAR Language I* program on the intellectual skills of students (ages 6 to 14) with moderate to severe developmental delays. Twenty-eight students were randomly assigned to a Direct Instruction group (*DISTAR Language I* coupled with precision teaching procedures) or a comparison group (Peabody Language Kit supplemented by teacher-generated language activities). Students in the Direct Instruction program scored significantly higher on the Stanford-Binet relative to those in the comparison group.

In contrast, the results of research conducted on *DISTAR Language I* with children without disabilities failed to produce positive effects on their language skills (Beveridge & Jerrams, 1981). Beveridge and Jerrams (1981) compared four matched nursery school groups:

DISTAR Language I, Parent Training, combined *DISTAR Language I* and Parent Training, and a control group who received only toy play. Comparison of the Parent Training group and the *DISTAR* only group resulted in a significant negative effect size (-.41). Although scholars have seriously questioned the methodological soundness (e.g., training of teachers) of the procedures used in this study (Adams & Engelmann, 1996), it remains unclear whether the *DISTAR Language I* program produces a positive effect on children's language skills.

The purpose of this study was to assess the effects of the *Language for Learning* program on the receptive language skills of a general sample of kindergarten children. It appears that no research, to date, has examined the effects of the *Language for Learning* program. This study builds on previous research by examining the effects of the *Language for Learning* program with a sample of kindergarten children. We studied the receptive language skills of kindergarten children for two reasons. First, receptive language skills are essential for academic survival; children are expected to learn through listening at least 60% of the time during the elementary school years (Dunkin & Biddle, 1974; Fujiki, Brinton, Morgan, & Hart, 1999; Warr-Leeper, Wright, & Mack, 1994). Second, deficits in receptive language appear to relate more strongly to more severe and frequent behavioral problems than expressive or overall language deficits (Benner et al., 2002; Cantwell & Baker, 1991; Cohen, 1996; Cohen, Davine, Horodezsky, Lipsett, & Isaacson, 1993; Scruggs & Mastropieri, 1986).

Method

Participants

Forty-five kindergarten children (27 males and 18 females) enrolled in two elementary schools (i.e., participating and comparison schools) in a small rural Midwest town participated in this study. The participating school served 21 kindergarten children (14 males, 7 females) while the comparison school served 24 children (13 males, 11 females). The mean pretest ages of children in the participating and comparison schools were 5.50 (SD = .65) and 5.61 (SD = .45), respectively. With one exception, the ethnic background of the children was Caucasian.

Setting

The staffing was consistent across all four (two participating and two comparison) classrooms. Each of the classrooms was staffed with a teacher and a paraprofessional. The two kindergarten teachers in the participating school had 8 and 7 years of teaching experience, respectively. The two kindergarten teachers in the comparison school had 20 and 3 years of teaching experience, respectively. The two paraprofessionals in the participating school had 3 and 4 years of experience, respectively. The two paraprofessionals in the comparison school had 1 and 12 years of experience, respectively.

Materials and Training

The Direct Instruction language program used in this study was *Language for Learning* (Englemann & Osborn, 1999). Program placement was determined by the placement tests incorporated in program materials. The *Language for Learning* program is based on the presentation of predetermined language instruction formats. The program teaches syntactic, semantic, and pragmatic skills believed to be necessary for success in school. The materials are organized in a sequence designed to provide maximum benefit from teacher-directed instruction (i.e., children respond to prompts from the teacher to initiate an utterance or produce a response to a stimulus).

The two teachers participating in the present study were trained during a 4-day workshop at the beginning of the academic year. The trainer had 20 years of experience in training teachers on Direct Instruction programs including

DISTAR Language I and *Language for Learning*. Teachers were taught the instructional methods, placement procedures, skill sequences, daily session instructions, and monitoring procedures for promoting and assessing student language development. They were also provided with several opportunities to practice the methods discussed and view and practice those methods using the materials provided in the *Language for Learning* program. Two half-day follow up sessions were conducted during the school year to discuss progress, curriculum and instruction questions, and any problems encountered by the teachers who were implementing the *Language for Learning* program.

The predetermined sequence of teaching activities, based directly on the published materials, was followed for all children within an instructional group. The groups consisted of six to eight children, with the children's respective classroom teacher presenting the materials. To set up instruction, children were seated in a curved row. Each child was assigned a seat based upon instructional needs (e.g., seating an easily distracted child directly in front of the teacher) and the teacher sat close to the children so that all children could see the pictures. During instruction, teachers presented each exercise as it appears in the presentation book. Clear and consistent signals were used to get responses from the group and exercises were paced appropriately depending on the difficulty of the activity for the children.

Dependent Measure

Receptive language was measured using the Test of Auditory Comprehension of Language-3 (TACL-3; Carrow-Woolfolk, 1999). The TACL-3 is a widely used individually administered test of receptive language. The TACL-3 consists of 139 items grouped into three language domains of 45 to 48 items. Each item is composed of a word, phrase, or sentence and a corresponding plate that has three drawings in color. The examiner reads the stimulus aloud, and the child is directed to point to the picture that he or she believes best represents the meaning of the word, phrase, or sentence. The TACL-3 is a technically adequate and widely used measure of the receptive language skills of children from 3 to 9 years of age (Conoley & Impara, 1995).

The TACL-3 provides a total score and scores across three domains. The three domains of receptive language measured include (a) Vocabulary, (b) Grammatical Prepositions, and (c) Elaborated Phrases and Sentences. Vocabulary measures the auditory comprehension of the most literal and common meanings of word classes such as nouns, verbs, adjectives, and adverbs. Grammatical Morphemes measures the auditory comprehension of the meaning of prepositions, noun number and case, verb number and tense, noun–verb agreement, and derivational suffixes, tested within the context of a simple sentence. Elaborated Phrases and Sentences measures the auditory comprehension of syntactically based word relations and sentence constructions.

Agreement checks were conducted at two phases of data collection. At both phases, agreement was calculated by dividing the number of agreements by the sum of the number of agreements plus disagreements and multiplying by 100. First, all TACL-3 protocols were checked for scoring accuracy by researchers after initial scoring by school psychologists. An agreement was recorded when the agreement check calculations aligned with calculations made at initial scoring. Agreement in scoring TACL-3 protocols was 98%. Second, all of the scores were checked for accuracy by researchers following initial data entry. Agreement in entering TACL-3 data was 99%. Initial errors made in scoring or data entry were corrected.

Evaluation Design

A pre–post quasi-experimental design (Martella, Nelson, & Marchand-Martella, 1999) was used to examine the effects of the *Language for Learning* program on the receptive

language skills of a general sample of kindergarten children. All kindergarten children in the participating school received the complete *Language for Learning* program over the course of the 2000–2001 academic year, while all of those in the comparison school continued to receive their typical instructional program (i.e., language development activities designed by the teachers). The teachers in the comparison schools did not use a specified language program to teach language skills explicitly. No attempt (e.g., staff development activities directed at the development of language skills) was made to change any of the teachers' instructions related to language development.

Procedures

The TACL-3 was administered as a pretest at the beginning of the school year (i.e., September) and as a posttest following intervention at the end of the school year (i.e., May). At both pre and posttest, graduate students and school psychologists administered the TACL-3. Administrators were trained to deliver the test in a consistent and accurate manner. Testing occurred on 3 consecutive days at both pre and posttest.

Results

To examine whether there were statistically significant differences in the posttest means of the receptive language scores of children, 2 (i.e., participating and comparison) by 2 (i.e., males and females) Analyses of Covariance (ANCOVAs) were conducted with pretest scores serving as the covariate. A statistically significant main effect for each school (i.e., participating and comparison) was obtained in all cases. There were no other statistically significant main or interaction effects. Adjusted mean pre and postintervention standard scores, associated *F*-statistics for the main effect for school, and effect sizes are presented in Table 1. Eta was used to provide an estimate of effect size.

Table 1

Adjusted Mean Pre and Postintervention TACL-3 Standard Scores, F*-statistics for Main Effect by School, and Effect Sizes*

	Participating School		Comparison School			
TACL-3 Scale	Pre	Post	Pre	Post	*F* value	Effect Size
Total	99.43 (14.22)	110.14 (13.32)	103.04 (17.12)	95.76 (14.90)	22.59***	.35
Vocabulary	9.19 (2.54)	11.63 (2.36)	10.42 (3.05)	9.87 (2.59)	6.49*	.13
Grammatical Morphemes	10.33 (2.61)	12.05 (2.90)	10.46 (2.78)	9.59 (2.90)	13.36**	.24
Elaborated Sentences/Phrases	10.19 (2.73)	10.89 (2.77)	10.50 (3.58)	8.72 (3.13)	7.97**	.16

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. The Total TACL-3 standard score is based upon a mean of 100 and a standard deviation of 15. The subtests of TACL-3 (i.e., vocabulary, grammatical morphemes, and elaborated sentences and phrases) are based upon a mean of 10 and a standard deviation of 3.

Inspection of Table 1 reveals that the posttest mean scores obtained by children receiving the *Language for Learning* program were larger than those from the comparison school in all cases. Specifically, children at the participating school scored 14.38 standard score points higher on the total TACL-3 posttest than those at the comparison school. Children at the participating school scored 1.76, 2.46, and 2.17 standard score points higher on the posttest than those from the comparison school on the Vocabulary, Grammatical Morphemes, and Elaborated Sentences and Phrases scales, respectively. Further, the obtained effect sizes ranged from .13 (i.e., Vocabulary) to .35 (Total TACL-3) across the TACL-3 scales.

Discussion

Researchers of previous studies had not examined the effects of the *Language for Learning* program or its predecessor, *DISTAR Language I*, on the receptive language skills of kindergarten children in general. The purpose of this study was to examine the effects of the *Language for Learning* program on the receptive language skills of a general sample of kindergarten children.

The findings from this study suggest that the *Language for Learning* program produced both statistically and educationally significant effects on the receptive language skills of children. Statistically significant mean differences were found between the schools on total and scale (i.e., Vocabulary, Grammatical Morphemes, and Elaborated Sentences and Phrases) posttest TACL-3 scores. The obtained effect size for the Total TACL-3 score was .35. This effect size suggests that the *Language for Learning* program had educationally significant effects on the overall receptive language skills of children. An effect size of .25 is considered educationally significant, meaning that it is worth the expense and effort involved in learning to use a new instructional program or procedure (Adams & Engelmann, 1996).

Taken together, these effects could be expected in other schools given the applied nature of this study. These findings are not congruent with previous research that found a negative effect size using the *DISTAR Language I* program on the intellectual and language skills of students without disabilities (Beveridge & Jerrams, 1981). These findings are congruent with the results of previous studies of the effects of the *DISTAR Language I* program on the intellectual and language skills of students with disabilities (e.g., Gersten & Maggs, 1982; Lloyd, Epstein, & Cullinan, 1981; Maggs & Morath, 1976).

This study was limited in several ways. First, the kindergarten children sampled were not demographically representative of the general population. The generalizability of the findings of this study is therefore limited. Future research should include demographically heterogeneous samples, including children at other grade levels. Second, we did not assess the effects of the *Language for Learning* program on nonreceptive areas of language (i.e., expressive phonology; syntax, or semantics; and communication), academic achievement, or social adjustment. Future research could examine the impact of this program on overall or expressive language skill, academic achievement, or social adjustment. Third, given that the participating sample was not followed longitudinally, it is unclear whether their receptive language gains would be maintained. The effects of the *Language for Learning* program should be examined longitudinally to ascertain whether the positive effects found in this investigation would be maintained over time. Fourth, treatment fidelity data were not collected. It is unclear whether the *Language for Learning* program was implemented as prescribed. Fifth, *Language for Learning* was not compared to a specific language program. Future research should compare the treatment effects of the *Language for Learning* program to other language programs.

There were three primary implications of this study. First, the results of this study indicate that explicit teaching procedures (e.g., Berliner & Rosenshine, 1976; Lloyd, Forness, & Kavale, 1998), like in many areas, appear to be important for developing receptive language skills of kindergarten children. Explicit teaching procedures include teacher-directed instruction, frequent low-level questions, teacher feedback, homogenous groups, and activities related to outcome measures.

Second, programs that use effective instructional design principles (Kameenui & Simmons, 1998; Wanzek, Dickson, Bursuck, & White, 2000) to teach language skills appear to be more effective than those using traditional methodologies. These effective design principles include strategic integration (i.e., linking skills across lessons), simple instructional strategies (i.e., user-friendly strategies held constant across lessons), mediated scaffolding (i.e., building upon prior knowledge), and judicious review (i.e., immediate practice, varied review activities, and intermittent review).

Finally, in complex areas such as language development it may be necessary for teachers to use manualized programs (i.e., Direct Instruction programs) that integrate both effective instruction procedures and instructional design principles. It would not only be extremely time consuming and expensive for each classroom teacher to develop an effective language program, but also fraught with a high degree of error. Evidence of the importance of manualized programs such as the *Language for Learning* program to teach complex skills rather than teacher-developed approaches is supported by the results of the Follow Through Study. Children who received the Direct Instruction model produced the greatest gains in skill development as well as social adjustment as compared to 21 other models (Adams & Engelmann, 1996). It appears that the Direct Instruction program tested in the present study, *Language for Learning*, can greatly increase the receptive language skills of kindergarten children and potentially prevent academic and social failure. Individuals who serve or care for young children should focus on developing language skills using instructional and curricular methods that have been empirically validated, as opposed to relying solely upon traditional methods (e.g., reading stories and singing).

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