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ABSTRACT

This paper examines the effectiveness of the Project MECCA (Make Every Child Capable of Achieving) model for early identification and mainstreaming of children with potential specific learning disabilities (SLD). The MECCA model incorporates collaboration between the learning disabilities teacher and the classroom teacher within the classroom using a task analysis process for building sequentially on students' successful accomplishments. The basic goals of the program are to provide a classroom-based diagnostic procedure for SLD and to develop the best possible teaching approaches and strategies for each child by combining the knowledge and experience of regular and special educators within the classroom environment. After screening, thirty-seven kindergarten students were identified as children at risk of failing reading by the end of second grade. These children remained in their respective classrooms with other children but received individual attention, intervention, and diagnosis on a daily basis. Reading and readiness scores of this group at the end of kindergarten and again at the end of first grade were compared to similar children in a control group. Results of this research indicate that appropriate intervention for children with potential learning problems at the start of kindergarten will improve performance in later grades. Another implication of the finding was the efficacy of collaboration between classroom teachers and special educators in individualizing instruction for children with potential SLD problems. (JD)

Learning by Succeeding:
Teaching Potential Learning Disabilities Kindergarteners within the Regular Classroom

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The program described in this paper, Project MECCA, has developed an effective mainstreamed approach for the early prevention and remediation of potential learning disabilities problems in kindergarten children. Children in the regular classroom who receive the MECCA approach are shown to score significantly higher than those in a Control group on measures of reading readiness at the end of kindergarten and again on reading tests at the end of first grade. The MECCA model incorporates collaboration between the learning disabilities teacher and the classroom teacher within the classroom using a Task Analysis process for building sequentially on students' successful accomplishments.

This paper examines the effectiveness of the Project MECCA (Make Every Child Capable of Achieving) model for early identification and mainstreaming of children with potential specific learning disabilities (SLD). MECCA is based on the principle of beginning at the level at which a child achieves success and then proceeding with him or her sequentially through more difficult steps to new successes. Integral to this program is the collaboration of the learning disabilities teacher and the regular classroom teacher to work with children in the regular classroom, using a task analysis approach.

We report the results of comparisons bwtween potential SLD kindergarteners who received the MECCA program and similar children in a Control group. Readiness and reading scores are compared at the end of kindergarten and again at the end of first grade.

The Mecca Program

Project MECCA was first funded in 1973 by the Bureau for the Educationally Handicapped (Title VI, G, P.L. 91-230) to develop a model center for the early prevention and remediation of children with SLD problems. Statistical data have been collected from approximately 300 kindergarten children over four successive years. During its first year, the MECCA Project conducted a feasibility study that developed and compared a classroom-based task analysis intervention approach with a more traditional referral approach; the second year focussed on development and dissemination of instructional materials. In the third year, the project was introduced in two new replication school systems; one of these, Meriden, Ct., provided data for a comparison of the MECCA method with a Control group. Results of this MECCA-Control comparison formed the basis for MECCA's national validation by the USOE, Joint Dissemination Review Panel in March, 1977. The MECCA-Control comparison is the focus of the present paper.

Curriculum and theoretical framework. The MECCA program provides daily observation, profiling and intervention procedures within the regular classroom for every child in need of these services. All potential SLD children are in regular classes each of approximately 25 children. The program utilizes a team composed of a learning disabilities teacher, classroom teacher, and aide, all of whom together analyze the activities of the kindergarten curriculum into their component tasks and then into the sequential steps which the child must accomplish in order to be successful in the activity. These analyses allow the classroom teacher and the learning disabilities teacher to observe identified high-risk children on a daily basis and to develop a detailed learning profile of specific strengths and weaknesses for each child. As the profile is developed, it becomes the basis of daily diagnosis and intervention for these children. Since the strategies for remediating SLD are, in fact, appropriate for integration with the kindergarten curriculum, daily intervention can take place within the classroom. The task analysis approach trains classroom teachers to instruct SLD children effectively within the regular kindergarten with ongoing learning disabilities teacher consultation. Consultation is also provided to the team through regular team meetings with the school principal and specialists within the school system. Again, basic goals of the program are to provide a classroom-based diagnostic procedure for specific learning disabilities and to develop the best possible teaching approaches and strategies for each child by combining the knowledge and experience of regular and special educators within the classroom environment. (The MECCA program is described in more detail in Rothenberg, 1976.)

The theoretical framework of this model draws upon the development of individualized teaching for potentially handicapped children in the least restrictive environment. Montessori and Piaget provided us with a broad theoretical perspective. From that base we have extensively used the works of Engelmann, Bereiter, and Bateman in the development of a task analysis pro-

cess; Myklebust's and Johnson's efforts in language development and remediation techniques; Hamill's efficacy research; Osgood's and Wepman's basic model for profiling SLD; Rosner's comprehensive strategies for SLD; and Nicholas Hobb's analyses of the school environment for handicapped children.

Method

Effectiveness of the MECCA approach has been evaluated in two stages. The first stage was a feasibility study that showed the MECCA task analysis method more effective than a more traditional referral approach (Lehman & Rothenberg, 1974). The present paper focusses on the second research stage which compares the MECCA task analysis method with a Control group (1) at the beginning of kindergarten, (2) at the end of kindergarten, and (3) at the end of first grade.

Sample Size and Selection

The kindergarten population in two-target replication schools was screened in the Fall of 1975 by school psychologists using the Jansky Screening Index[1] for potential educational handicaps. This screening identified 37 kindergarteners as children who were at risk of failing reading by the end of second grade. These 37 SLD kindergarteners remained in their respective classrooms with the other kindergarten children. Eight classes were taught by four kindergarten teachers previously employed at the two schools. Training and consultation was provided by two learning disabilities teachers also previously employed at the two schools. Project staff provided inservice to the system personnel on a regular basis.

A control group of kindergarten children was selected from the remaining seven schools in a two-step sampling procedure. Since it was not economically feasible to test the total kindergarten population, teacher judgment served as the initial screening criterion for identifying potential high-risk

[1] The Jansky is an individually administered 20-minute test described under Measures.

kindergarteners. Kindergarten teachers were asked to rate all students on a four-point scale according to their chances of success in reading. Second, school psychologists randomly administered the Jansky to children rated "little chance of success" and "doubtful" by teachers until a target number of control children had been identified from each school. The target number of control children was determined for each school based on 1975 proportions of second grade children scoring one year or more below grade level in reading. Out of the initially tested group of approximately 50, 33 kindergarteners scored within the established "high-risk" range on the Jansky. Age, sex, pretest Jansky scores and pretest-to-posttest correlations were variables examined for comparability between the two groups. Members of the control group remained in their respective classes and were taught by thirteen kindergarten teachers in the seven schools.

Evaluation Design and Analyses

The MECCA task analysis and Control groups were compared for reading readiness skills at the end of kindergarten and again at the end of first grade. Two kinds of analyses were used: (1) prekindergarten similarity was assessed by t-test (Jansky pretest) and (2) analyses of covariance were computed with age, sex, and pretest Jansky scores as covariates and with post-kindergarten Jansky and Metropolitan Reading Readiness Tests scores and post-first-grade Gates-MacGinitie Reading Test scores as dependent measures.

In the analyses of covariance, there were no interactions between covariates and treatment. Analyses of covariance were appropriate because the boy/girl ratio was significantly different ($P<.01$) between the two groups with a proportionately greater number of boys in the Control group. In addition, the average age of the Control group was lower ($P<.19$) than the average age of the MECCA group. Pretest Jansky scores were comparable ($P > .10$) for both the MECCA and Control groups.

Measures

The Jansky Predictive Screening Index was used to identify potential SLD children at the beginning of the kindergarten year (pretest Jansky) and was then readministered as one measure of reading readiness in the Spring (post-test Jansky). The Jansky consists of five predicting tests chosen for their predictive efficacy as established in previous research: letter naming, picture naming, word matching (Gates Reading Readiness subtest), copying of the Bender Gestalten, and sentence repetition (Binet Sentence Memory). Areas of development measured include perceptual organization, linguistic competence in both its receptive and expressive aspects, and readiness to cope with printed symbols. The rationale and validation study for this instrument is described in Preventing Reading Failure (Jansky, J.J., & deHirsch, K. N.Y.: Harper & Row, 1972) and Predicting Reading Failure (deHirsch, K., Jansky, J. J., & Langford, W. S. N.Y.: Harper & Row, 1966). Test administration and scoring procedures were standardized and the same school psychologists administered both the pretest and posttest. Significantly high correlations were found between the pretest Jansky and the posttest Jansky. These high correlations suggest that the test measured potential reading competencies with sufficient reliability.

The Metropolitan Readiness Tests (MRT), 1965 Revision, designed to be given at the end of kindergarten or at the beginning of first grade, were used as a second measure of reading readiness. These tests were selected because they are given routinely in the Spring on a systemwide basis. The MRT consists of six tests: Word Meaning, Listening, Matching, Alphabet, Numbers, and Copying.

The Gates-MacGinitie Reading Test (1965), Primary A, is given to first graders each Spring by the Meriden system to assess reading progress. Two subtests of the Gates-MacGinitie were used to assess students' achievement in Vocabulary and Comprehension.

Results

The MECCA and Control groups were compared at the beginning and end of kindergarten, and again at the end of first grade. Results of the analyses are presented in Table 1. Average scores for the MECCA and Control groups are given for four measures: Jansky pretest, Jansky posttest, Metropolitan posttest, and Gates-MacGinitie posttest. The table also reports the results of the t-test and the analyses of covariance:

(1) The two groups were not significantly different at the beginning on the Jansky.

(2) Analyses of covariance computed at the end of kindergarten with pretest Jansky, sex, and age as covariates, show that the MECCA students score significantly higher on the post-test Jansky ($P<.01$) and on the Metropolitan Reading Readiness Tests ($P<.001$).

(3) At the end of first grade, analyses of covariance using the same covariates show that the MECCA children scored significantly higher on the Comprehension ($P<.01$) and Vocabulary ($P<.01$) subtests of the Gates-MacGinitie Reading Test.

Table 1

Comparing the MECCA and Control Groups Before Kindergarten, After Kindergarten, and After First Grade: Means and Test Results

	MECCA Task Analysis			Control			Significance	
	Mean	S.D.	N	Mean	S.D.	N	Test	Level
Jansky (Pre-Kindergarten)	27.1	5.4	37	26.0	6.0	33	t-value .83	n.s.
Jansky (Post-Kindergarten)	53.3	9.8	37	46.6	9.9	33	F-values 9.61	.01
Metropolitan (Post-Kindergarten)	60.5	7.8	37	52.2	9.4	33	12.94	.001
*Gates (Post-First Grade)								
Comprehension Subtest	49.7	8.2	25	42.4	5.8	23	8.38	.01
Vocabulary Subtest	50.8	8.3	25	42.8	7.6	23	9.27	.01

*At the end of first grade, 25 MECCA and 23 Control students were still attending the Meriden schools. The pre- and post-kindergarten scores of these students are similar to those reported in the table for the original 37 MECCA and Control students.

Table 2 gives the percentiles of the Metropolitan and Gates-MacGinitie means for the MECCA and Control groups.

Table 2

Comparing the MECCA and Control Groups After Kindergarten and After First Grade: Percentiles of the Test Means

	MECCA Task Analysis		Control	
	Percentile	N	Percentile	N
Metropolitan (Post-Kindergarten)	63%ile	37	44%ile	33
*Gates (Post-First Grade)				
Comprehension Subtest	49%ile	25	22%ile	23
Vocabulary Subtest	53%ile	25	23%ile	23

*See note on Table 1.

Discussion

This investigation supports the lasting effectiveness of a daily, classroom-based sequential teaching approach for the early prevention of learning problems. Potential SLD kindergarteners who participated in the MECCA task analysis program have significantly higher levels of readiness achievement than do comparable kindergarteners who did not participate in the program. Although not presented in detail in this paper, these findings were upheld by similar results for a second year of kindergarteners (Lehman, Rothenberg, & Hackman, 1977). Also, earlier research suggested that SLD kindergarteners receiving the MECCA task analysis approach within the regular classroom benefit more than those receiving an alternate referral, diagnostic battery, and planning and placement team prescription approach (Lehman & Rothenberg, 1974). By providing appropriate intervention for children with potential learning problems at the start of kindergarten, there should be less need for remedial techniques in later grades.

Another important implication of the findings is the efficacy of collaboration between classroom teachers and special educators in individualizing

instruction for children with potential SLD problems. These ongoing training and learning processes effect changes in classroom teaching behavior which ultimately are reflected in improved instructional strategies and procedures for all children in the classroom.

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