The persistence of learning disabilities to the junior school level indicates the need for a supplement to the regular school program, especially since junior high represents the last chance in most cases for public educational intervention. One-time development of a workable and transportable program model is therefore desirable. Personnel requirements, desirable facilities, relative costs, testing, rationale, and evaluation design are outlined and examples presented. The model employs a systems analysis approach beginning and ending with the mainstream educational process and proceeding through various stages of intervention with appropriate recycling and intermediate evaluation. (Author/EB)

DIAGNOSTIC AND PRESCRIPTIVE MODEL FOR SECONDARY LEVEL LEARNING DISABILITY PROGRAM

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The Chesterfield Diagnostic Prescriptive Model for a Secondary School Learning Disabilities Program is built on the simple premise of variation in causation and manifestation of learning problems from child to child. Acceptance of this premise dictates a team approach to diagnosis, prescription and remediation. This model is based on bringing together a multi-disciplinary team. Each member of the team contributes from his area of expertise to a single program for each child. This contribution extends from initial screening through diagnosis, development of a prescription, assistance in remediation as required and follow-up.

In preparing for this presentation it was necessary to make a choice between a highly technical report and a straight-forward description of what we are doing, how it is working, and how this model can be implemented by other systems. It appeared the latter choice was preferable.

Several factors seem to be involved in a greatly increased incidence or identification of learning disability problems in public schools. Use of standardized tests with interpretation based on national norms, and improved diagnostic techniques, have placed many children in the learning disability category who formerly were considered to be lazy, retarded, poorly motivated, etc. Increased social and academic expectations have multiplied pressures which result in learning problems among students. Parental interest and federal support have encouraged educators to devote increased attention to this critical area. Especially in the area of reading, there is rather general agreement that a large percentage of the
junior high school population evidences some degree of disability. Reading disability requiring special measures may exceed 10 percent.

The intent is to describe simply and briefly a program that works, and that can be reasonably adapted to other situations. For purposes of this model, learning disabilities is defined as "Children with special learning disabilities exhibiting a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing or motor handicaps, to mental retardation, emotional disturbance or to environmental disadvantage." This definition has been provided by Special Education Division, State Department of Education, Richmond, Virginia.

The middle school or junior high school level towards which this model is directed is the last educational period where preventive or remedial efforts may be effectively applied to all children needing them. By the end of junior high school many children who have not been provided with educational services to help them overcome learning problems will have become discouraged enough to drop out and old enough by law to do so. Thus, the middle or junior high level often represents the last opportunity for effective intervention by the schools.
It is a curious fact that in education the bulk of effort in federal programs and indeed local effort, has been applied at the elementary and senior high school levels. The middle or junior high school level has been strangely neglected in spite of its obvious importance as a transitional period between the other two levels. The paucity of research in this area confirms the foregoing observation. It is the purpose of this presentation to describe a model of a diagnostic-prescriptive-remedial approach to learning disabilities at the junior high school level which can be expected to reduce failure rate, drop-outs, attendance problems, discipline problems and other barriers to educational success. This model can be easily adapted for use by school systems of varying size.

THE MODEL

The model described here begins and ends with the mainstream educational process and proceeds through various stages and levels of intervention with appropriate recycling and intermediate evaluation. Levels of diagnosis proceed in a filtering fashion from screening and analysis of norm-referenced test data already on file on down to highly individualized diagnostic and prescriptive work by a team of specialists in the several disciplines related to educational functioning.

The model is designed for a total school system population of about 25,000 but could be modified by varying both the number and depth of diagnostic levels to accommodate systems of varying sizes. The junior high enrollment of the school system where this model is now operating is
roughly 10% of the total population, including grades 6 through 8. Of these 2,500 students, 629 were referred for diagnosis during the 1972-73 school year. By year's end, 152 of those referred had been accepted for resource room intervention. Of the students participating, 80% were male, 12% were black, 31% participated in earlier elementary level transition classes, 14% were recent transfers into the county school system, the average age was 154 months, and the Mean Full Scale I.Q. was 100.4, with a standard deviation of 10.5, reflecting an I.Q. cutoff of 90.

ELEMENTS OF THE PROGRAM

The first step in initiating the program is to provide inservice training and teacher orientation for the classroom teachers. Since they are, in this program, the originating student referral source, they must be given help in observing, recognizing, and referring children with learning disabilities.

For purposes of this program, a referral form for use by teachers was constructed which includes basic statistical information on each student, a behavior check-list and a record of previous testing or special intervention in the educational program. Current performance and problem areas are indicated. In addition, screening tests covering current achievement as measured by a standardized test, and an informal math and reading test constructed by the program are administered.

This referral form is then reviewed by the principal and/or guidance counselor and sent to project headquarters for further processing where any previous special intervention information is added.
Each referral is reviewed by team members to determine if they are valid learning disability referrals as opposed to primarily EMR, visually handicapped, speech handicapped, emotionally disturbed or other disabilities. If the child referred is considered to be learning disabled, then further diagnosis and evaluation is done. Each member of the team studies the child in depth by means of tests, case histories, observation, and other evaluative criteria to determine the learning disability prescription. For example:

The psychologist through standardized tests measures current intellectual functioning, behavior and current academic achievement.

The speech pathologist does a hearing screening with the audiometer and uses standardized speech tests to determine the effect, if any, that speech problems are having on the learning disability.

The perceptual-motor teacher uses the Titmus Eye Screening program to determine if eyes are functioning normally. A series of tests and exercises are used to determine development and skill in the perceptual-motor areas.

The home-school coordinator obtains case history from the parents and relevant previous or current medical information is obtained from the medical persons involved.

After the tests are administered and observations recorded, the team members compile their diagnostic information. This information is put into a written report and a prescription is then developed specifying the
areas of academic need for the L.D. student. Strengths are emphasized for every effort must be made at this level to build academic success for the student.

**PARENT INVOLVEMENT**

Parental involvement is essential for student change. We have found the key to parental involvement to be that of understanding the program and techniques of intervention. We have found three steps in involvement with parents to be most effective: (1) parent observation of student as he works in lab, (2) periodic parent meetings at the school with team members to discuss the student's current progress, adjustments and approaches to change, (3) system-wide parent meetings bringing in speakers who conduct programs familiarizing the parents with learning disability techniques and helpful aids.

**CONTINUING TEAM INVOLVEMENT**

The strength of this model is found in the coordinated work of the team (psychologist, speech pathologist, perceptual-motor teacher, teacher or educational specialist and home-school coordinator) as each contributes from his professional frame of reference to a single diagnosis and prescription. Further strength derives from their continued involvement in the project. Psychologists work with teachers when placing them back into the classroom, counseling with a student who has a problem, etc. The educational specialist works with the regular teacher to implement the educational prescription. Other team members continue their specialized services as needed. Thus, neither the child nor his regular teacher is left unsupported as long as they need help.
The direct assistance cycle of this model is complete when a given child is able to return full-time to regular class activities and demonstrate a reasonably consistent level of successful performance. However, continuing follow-up is carried out by team members in the area of disability through the entire junior high school level. These periodic checks are not too time consuming and serve to alert the team if significant regression occurs. Those children who are unable to return full-time to regular class work are continued in the program through 8th grade. We anticipate extending this program through senior high school.

STAFF

Basically, the professional training of the team members in this model differs little from requirements at the elementary or senior high levels. Teacher training, of course, would vary by levels.

The model described here serves eight junior high schools. Implementation of this model requires the following personnel in addition to the regular school staff:

DIRECTOR - To administer the project and coordinate the work of the team.

SECRETARY TO DIRECTOR

CLERK-TYPIST

CLASSROOM TEACHERS (8) - Has a combined program of regular educators training and endorsed in the area of learning disabilities. The junior high L.D. teachers training varies only in the subject area training of working with junior high age students and experience in teaching.
TEACHER AIDES (8) - To assist classroom teacher in the lab and handle clerical duties.

Team members serving each school are as follows:

RESEARCH-EVALUATOR - To evaluate the program as it proceeds and to gather and disseminate information concerning it.

CERTIFIED SCHOOL PSYCHOLOGIST (2) - To evaluate intellectual capacities, motivation and attitudes and improve learning receptivity to academic situation.

SPEECH & HEARING PATHOLOGIST - To evaluate speech and hearing ability and to provide speech therapy and auditory training skills.

PERCEPTUAL-MOTOR THERAPIST - Carries out visual testing and evaluates physical and sensory development and provides both gross and fine motor training where needed.

HOME-SCHOOL COORDINATOR - Evaluates the home environment and obtains medical history based on information given by the parent. Establishes and maintains communication between the home and school as to progress in the program. All of the schools provide regular classroom situations and counselors.

LEARNING TREATMENT

The students remain in their regular homeroom and move out to the learning lab for periods during the day as their prescription indicates. For example, some students may spend one period a day in the learning lab, others may spend two or three periods a day.
Packets of material for classroom teachers have been developed to provide some basic general help in areas of language arts, (reading, spelling, phonics), math, handwriting, science, and social studies. This is augmented by specialized treatment and materials as indicated by the prescription.

Since the aim of the program is teaching the student to cope with the academic program, much time is spent with the counselor and regular teachers to help them understand the special needs of these students, such as mimeographed work rather than board work. Also, an opportunity is given to complete tasks in a time limit that is reasonable for the disability. For example: a learning disabled student might go into the lab to take a test free of time limitations and distractions. Chapters in social studies are often read and taped for students who have difficulty getting meaning from reading the material.

FACILITIES

Facilities used in this program are the regular school setting with two modifications. The first is an internal one of an observation room constructed within the classroom used as a lab in each school. This is a unique feature of the program, as the observation rooms have one-way mirrors and a speaker system which allows parents, teachers, counselors, and others interested, to observe the classroom when prescriptions are being implemented without interrupting the teacher and students. The external one is a mobile lab used for testing in schools where sufficient
testing areas are not provided. There are two mobile units to serve eight school locations. Where adequate testing facilities are available, mobile units could be dispensed with. This would result in a saving of $15,000 to $20,000. Taken together, these permit testing and treatment with a minimum of disruption of the regular school program.

**COST PER YEAR**

The cost, including office equipment, all materials and equipment necessary to operate the program, and salaries is $225,000 per year. (a list of materials and cost is available). A copy of the first-year budget is included as Appendix B.

**Figure I:** Incidences of Learning Disabilities at Junior High Level - First year

<table>
<thead>
<tr>
<th>Total Enrollment</th>
<th>Number of Referrals</th>
<th>Rec'd Prescriptive Workup</th>
<th>Diagnosed as L.D.</th>
<th>Ret'd to Reg. Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>2500</td>
<td>600</td>
<td>215</td>
<td>166</td>
<td>52</td>
</tr>
</tbody>
</table>

**RESULTS**

This model has proven capable of serving the number of children for which it was designed. (see figure I) In the first year of operation, 600 plus children were screened and provided with varying degrees of assistance. Of this number, 215 received full diagnostic-prescriptive work-up. Intensive classroom assistance was provided for 166. Tentative figures
at the mid-point of the current year indicate that these figures will be equalled or exceeded during the second year of operation.

Acceptance by teachers, principals, and parents, always a problem in programs of this nature, has been encouraging. Support by principals and parents has been consistently good. Teacher support appears to be stronger this year than last. Pupil acceptance appears to be better in the 6th and 7th than in the 8th grade.

The question as to pupil performance upon return from this program to full-time participation in the regular classroom was addressed by a follow-up study mid-way through the second year. Results of the follow-up are shown in Table I. While 56, or about one-third of the pupils who were served on an extended basis during the first year were returned to regular classrooms full-time, eight of these had moved out of the system before this study was conducted in January of 1974. Thus, Table I summarized data on 48 children from all of their current teachers.

**DISSEMINATION**

Personal observation of progress in action has proven to be the most effective means of dissemination. Thus, visitation as a means of dissemination is strongly encouraged. Other conventional methods of dissemination have been used such as brochures, film slide presentations to local, state, national and international meetings. Civic groups and news media have also been used as a means of dissemination.
DISCUSSION

Discussion will be kept to a minimum to allow time for questions. The results cited are supported by our evaluation program. A most significant finding in Table I is that zero per cent of the children returned to the regular program are now getting an achievement rating of "poor" from their teachers. The full significance of this finding is apparent only when it is realized that every one of these children were failing in at least one academic area before being assisted by this program.

The model, or program, is still evolving and is thus not presented as a closed item. For example, an area that requires continuing study and work is the ability of regular classroom teachers to understand and identify learning disabilities. While strides have been made, using this model, our experience indicates much is still to be done. This work with teachers is of potentially even greater significance in our planned extension of the model to the senior high school level.
<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTENDANCE</td>
<td>25</td>
<td>16</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>52%</td>
<td>34%</td>
<td>10%</td>
<td>04%</td>
</tr>
<tr>
<td>CURRENT ACHIEVEMENT*</td>
<td>30</td>
<td>15</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>63%</td>
<td>31%</td>
<td>06%</td>
<td>0</td>
</tr>
<tr>
<td>CURRENT CLASSROOM BEHAVIOR</td>
<td>9</td>
<td>21</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>19%</td>
<td>44%</td>
<td>29%</td>
<td>08%</td>
</tr>
<tr>
<td>CURRENT LEVEL OF FUNCTIONING IN FULL-TIME REGULAR CLASSROOM</td>
<td>4</td>
<td>18</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>08%</td>
<td>38%</td>
<td>44%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Percentages rounded to nearest whole number.

*Excellent = passing all subjects
Good = passing more than half
Fair = passing less than half
Poor = failing all subjects
APPENDIX A

LISTING OF TESTS USED IN THE TITLE III JUNIOR HIGH LEARNING DISABILITIES PROJECT DURING 72-73 SCHOOL YEAR AND 73-74. ALL OF THESE TESTS ARE NOT NECESSARILY BEING USED AT THE PRESENT TIME, BUT HAVE BEEN USED SOME TIME SINCE THE BEGINNING OF THE PROGRAM. IF YOU HAVE MORE SPECIFIC QUESTIONS CONCERNING THE TESTS BEING USED AT THE PRESENT TIME, PLEASE LET US KNOW.

TESTS ADMINISTERED BY PERCEPTUAL-MOTOR TEACHER:

- Developmental Test of Visual-Motor Integration (Beery)
- Psychoeducational Inventory of Basic Learning Abilities (Valett)
- Auditory Discrimination Test
- Ozeretsky Test of Motor Development
- Titmus Vision Test

TESTS ADMINISTERED BY EDUCATIONAL SPECIALIST:

- Stanford Diagnostic Reading Test - Form W - Level II
- Stanford Diagnostic Arithmetic Test - Form W, Level II
- Signal Detection Test
- Wide Range Achievement Test
- Group Diagnostic Reading Aptitude & Achievement Tests
- Slingerland SLDT - Forms B & C
- Stanford Int. II Reading Achievement - Forms X & W
- Malcomesius
- Gray Oral Reading Test
- Virginia Affective Assessment Questionnaire
- Informal Reading Inventory
- Diagnostic Reading Scales (Spache)

TESTS ADMINISTERED BY PSYCHOLOGISTS

- House-Tree-Person
- Wechsler Intelligence Scale for Children
- Peabody Individual Achievement Test
- Illinois Test of Psycholinguistic Abilities
- Bender Gestalt Test
- Sentence Completion Test
TESTS ADMINISTERED BY SPEECH PATHOLOGIST:

- Peabody Picture Vocabulary Test - Forms A & B
- PAT Recording Sheet

QUESTIONNAIRES * ADMINISTERED BY RESEARCH EVALUATOR:

- Professional Opinionnaire Form
- Learning Disabilities Teacher Interview Form
- Parent Information & Opinionnaire Form

*(Locally Developed)*
## Proposed Project Budget/Expenditure Report

### County/City

### LEA No.

### Project No.

### Budget Period: to

<table>
<thead>
<tr>
<th>Expenditure Accounts</th>
<th>SALARIES</th>
<th>Expenditure Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prof.</td>
<td>Contract Services</td>
</tr>
<tr>
<td>Administration</td>
<td>100</td>
<td>18,710</td>
</tr>
<tr>
<td>Instruction</td>
<td>200</td>
<td>100,972</td>
</tr>
<tr>
<td>(Dissemination Activities)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Evaluation Activities)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance Services</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Health Services</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Pupil Transportation</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Plant Operation</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Plant Maintenance</td>
<td>700</td>
<td>6261</td>
</tr>
<tr>
<td>Fixed Charges (Except §30)</td>
<td>800</td>
<td>830</td>
</tr>
<tr>
<td>(Leasing of Facilities)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Services</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td>Student Body Activities</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Community Services</td>
<td>1100</td>
<td></td>
</tr>
<tr>
<td>Improvement to Sites</td>
<td>1210c</td>
<td></td>
</tr>
<tr>
<td>Remodeling Under $2,000</td>
<td>1220</td>
<td></td>
</tr>
<tr>
<td>Remodeling Over $2,000</td>
<td>1720c</td>
<td></td>
</tr>
<tr>
<td>Capital Outlay (Equipment)</td>
<td>1230</td>
<td></td>
</tr>
</tbody>
</table>

### Column Totals:

- Total Salaries: 136,852
- Total Expenditure: 25,151
- Total Material/Supplies: 16,672
- Total Travel: 10,500
- Total In-Serv.: 3,500
- Total Education: 1,720
- Total Other Expenses: 28,625
- Total Expenditure: 225,000

### Remarks:

**Learning Disabilities Model**