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ABSTRACT
                Intended for trainers developing inservice workshops
for regular classroom teachers and/or generalists, the manual
contains information that evolved from field experiences and training
efforts of special educators associated with the Rocky Mountain
Regional Resource Center's (RMRRC) program to explore ways to support
teachers serving handicapped children in the least restrictive
environment possible. Information is divided into five major
sections: identification, diagnosis, prescription, programing, and
evaluation. Each section contains an introduction and overview, a
narrative, and a summary. Topics covered include the following:
observation of behavior, screening instruments, profiling, methods in
diagnosis, total assessment, task analysis, diagnostic teaching,
organization of diagnostic data, writing a prescription, scope and
sequence, instructional materials and programs, instructional methods
and techniques, evaluative tools, and behavior measurement. Appended
materials include a glossary of items for systematic observation of
behavior, categorical descriptions of handicaps, a review of formal
screening instruments and diagnostic tests, descriptions of
instructional materials and techniques, a list of publishers of
instructional materials, an overview of the original training
program, a report on the RMRRC Stratistician Project, and a paper
titled "Reading the Environment to Gain Acceptance". (SBH)

INFORMATION FOR INSERVICE TRAINING DEVELOPMENT.

A COLLECTION FROM FIELD EFFORTS OF THE RMRRC

(Rocky Mountain Regional Resource Center)

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Bureau of Education for the Handicapped

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INFORMATION FOR INSERVICE TRAINING DEVELOPMENT

A COLLECTION FROM FIELD EFFORTS OF THE RMRRC

(Rocky Mountain Regional Resource Center)


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U.S. DEPARTMENT
OF HEALTH, EDUCATION AND WELFARE

Office of Education
Bureau of Education for the Handicapped

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The RMRRC Training Coordinator responsible for the development and monitoring of the training program which provided the data for this work was Frank South. His many hours of individual effort and support of others involved were pivotal in the development of this manual.

With all of these efforts the document must be considered as still in the evolutionary process of development. Training of inservice trainers of teachers is critical in the present special education milieu. Adding new information to any such training program and/or deleting information no longer relevant is imperative. With that dynamic as a basis, the above persons have willingly given of their time and expertise and to each the RMRRC is genuinely appreciative.
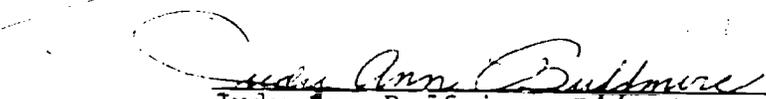
Judy Ann Buffmire, Director
Rocky Mountain Regional
Resource Center

This manual contains information that evolved from field experi-
ences and training efforts of special educators associated with
the Rocky Mountain Regional Resource Center (RMRRC). During the
RMRRC's four years, an ongoing thrust explored ways to support
teachers who were serving handicapped children in the least re-
strictive environment possible. (These efforts are referred to
as the Stratistician Model.)

Numerous individuals have contributed to developing this infor-
mation, and the contents reflect some uneveness. Much of the
work was developed during an RMRRC training program for gener-
alists* who were to work directly with teachers. Later work
was directed toward local and/or state training teams for their
use in training generalists. The two different vantage points
are apparent throughout the text.

The individual sections were written to stand alone for specific
training needs. The composite text addresses the appraisal
needs** most often identified in RMRRC field activities. The
information was collected in an attempt to help answer trainers'
needs for readily available information in development of inser-
vice workshops for regular classroom teachers and/or generalists.

The manual consists of five major sections: 1) Identification;
2) Diagnosis; 3) Prescription; 4) Programming; and 5) Evaluation.
Each section contains an introduction and overview of the section,
a narrative and a summary. In addition, the appendix section
includes supplementary information that may be of interest to
the reader. Examples are papers on categorical descriptions of
various handicapping conditions (Appendix B), development of the
RMRRC training program (Appendix G), information on the Stratis-
tician Model (Appendix H), and reading the environment (Appendix I).

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*A generalist is a teacher certificated in any area of special
education who works as a resource teacher to classroom teachers.

**The Request for Proposals 74-6 defines a comprehensive appraisal
process as follows: "A systematic comprehensive appraisal pro-
cess includes (1) referral and screening, (2) individual assess-
ment, (3) development of appropriate individualized educational
program and placement, (4) development of the educational program
based upon effective communication and coordination among essential
personnel, and (5) provision and maintenance of testing and evalua-
tion practices to determine the effectiveness of the individual
educational program and also to assure the continued appropriate-
ness of the educational program and placement." (RFP 74-6, Attach-
ment "A" MSCF#12, p.1.)

The RMRRC project was terminated one year early and the planned
final polishing of this document was not possible. The stratis-
tician effort is only one of many developed in the thrust toward
mainstreaming handicapped children. This manual, then, is sub-
mitted to the educational community as one building block in the
dynamic of developing better models to serve more handicapped
children.

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Chapter One

IDENTIFICATION

The regular classroom teacher who may have some
handicapped children in the class who are not
receiving special instruction needs to identify
those children.  It may be discovered that some
children are able to function adequately in the
classroom in spite of their handicapping condi-
tions, with only minimal adjustment in their
programs.  Others will be able to remain in the
regular classroom but may require occasional
sessions with a specialist.  Some children will
need special education intervention through a
special classroom, at least temporarily.

The process of identifying potentially handi-
capped or "high risk" children in a classroom
need not be complicated nor difficult.  In this
chapter we will talk about methods of observation
and screening through which a teacher can make
some general assumptions concerning the students
whose problems will require further diagnosis be-
fore appropriate interventions can be determined.

Identification is not a clinical diagnosis, but
a method of observing and recognizing an educa-
tional, behavioral, or physical handicap, or a
developmental discrepancy.  It is a "screening"
process to sort out those children who appear to
manifest such characteristics.  Early identifi-
cation often helps to prevent a problem from in-
creasing in severity by supplying data which will
document the need for diagnosis.  It defines the
base for a remedial prescription and sets some
limitations for an educational modification.  The
purpose is to identify a child's strengths and
weaknesses, so that strengths may be built upon
and weaknesses minimized.

Ideally, every student with whom an educator
comes in contact should be screened for conditions
which may hinder learning.  If this procedure
takes place in an efficient manner, potential
problems can be pinpointed and, if needed, diag-
nosed in depth.

In this chapter, overviews of three methods of
identification within the regular classroom are
presented.

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## Observation of Behavior

The teacher should have some systematic method for observing behaviors where they occur. The method should record and organize the information so that gross screening decisions can be made. Though observation is the tool most frequently used by teachers, its value is decreased if information is not systematized in a usable form.

## Screening Instruments

This section offers descriptions of several types of screening devices. These are useful for sorting high and low achievement, performance and proficiency. They also help to identify children who may have a handicap or learning problem.

## Profiling

A systematic method of assessing and developing a graphic representation of the whole child should be a tool all teachers can use. In addition to assessment of performance and achievement, this tool may assist the teacher in programming for one child or for an entire classroom. Profiling offers an opportunity to point out and document deficiencies and strengths. There are many ways to profile a child's skills. This section shows one format which may be used or modified to fit specific needs.

IDENTIFICATION: Observation of Behavior
_____

Every classroom teacher should have some systematic method for observing behaviors where they occur. The method should record and organize the information for screening purposes. Though observation is already the tool used most frequently by teachers, its value is decreased if information is not systematized in a usable form. It can be used most productively as a screening device, however, if the pitfalls inherent in observation are avoided.

Behavior and academic performance deviations can be and often are recognized before they have been verified by any standard procedure. Like formal testing, systematized observation can verify

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information. Unlike formal testing, observation has the advantage of allowing for a realistic evaluation in a natural academic or social environment.

To make observation a tool for screening and a base for comparison of performance improvement, the observation procedure must be taken two steps further than mere "recognition." Behavior or performance should be recorded as it actually happens; the significance of the behavior should be ascertained by comparison of that performance frequency or duration to the total performance of the observed behavior in others.

A description of the actual events should be collected by use of a stable or unchanging system. This system should convey the same meaning each time it is used and to anyone who reads the account. The description should be recorded so that the sequence of events is clearly stated and can be remembered. By being systematized and by recording the events, the target behavior can be verified and the performance can be clarified and substantiated.

This organized observation process can become a prime tool for verification of target behaviors. When a teacher suspects a behavior and requests diagnostic or intervention assistance, verification of that suspicion is an initial step for both diagnosis and intervention. Non verification of the suspicion provides an opening for potential on-the-spot inservice experience for the teacher. As the teacher receives instruction and gains skills in methods of observation, the responsibility of identification and screening is minimized for the trainer.

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Systematic Observation of Behavior (SOB)
There are many observation systems already developed. Each scale is designed to gather certain kinds of information. They are of value to the potential user to the extent that they gather the kinds of information the user needs. The user may find it more valuable to adapt an existing method to gather more appropriate information or to start from scratch and create a method more suitable to the specific needs.

The Systematic Observation Behavior (SOB) was developed by the Rocky Mountain Regional Resource

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1 5

Center to gather detailed, educationally relevant
information which could be observed in the
classroom. Other instruments did not seem to
have the capacity to record all the selected be-
haviors and the sequence in which they occurred.
By focusing on the antecedent behavior, the
target behavior, and the consequent behavior, the
SOB, is adaptable for initial screening and
identification of problem behaviors. For that
reason the SOB will be used as an example of an
observation recording system in discussions that
follow.

The SOB is an informal screening device, useful
for identifying those elements in the child's
environment that may affect performance. As in-
formal testing, a "diagnostic" profile is com-
piled. Unlike formal testing, the child is ob-
served in his natural academic or social environ-
ment and it requires that the observer do more
than just observe. Effective use of the SOB
requires adherence to the preliminaries, the
observation and the follow-up.

Preliminaries

Preliminaries are initiated by a referral. The
first consideration should be whether or not the
SOB is an appropriate device to use. This deci-
sion can be made by asking three questions:

1. Does the nature of the referral reflect the
   teacher's lack of information of the child's
   difficulty in a school setting and/or a need
   for confirmation of the observation?
2. Does the referral focus on observable inter-
   actions and behaviors?
3. Does the referral require a behavioral as
   opposed to an academic appraisal of the
   child's performance?

If the SOB is appropriate for use (if any of the
above answers are yes), the referral is the basis
for an objective observation. Following are
examples of referral questions from teachers:

1. "Is Peter leaving the room when Warren
   picks on him?"
2. "When and why does Ralph become rebellious?"
3. "What are the things that occur before and
   after I give Robert an assignment he refuses
   to finish?"

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4.  "What does Glade do behind my back?"

In the preliminary meeting, the initiator of
the referral and the observer review a list
of possible behaviors and decide what key
behaviors or interactions to look for during
the observation. The General Survey Form,
Figure 1.1, is useful as a checklist for
planning behaviors to be observed.  A time and
place for the observation must be decided upon.
The preliminary conference should also be used
to schedule a follow-up discussion between
observer and initiator.  This should occur as
soon after the observation as possible.  With
the objectives, time, place, and follow-up
discussion established, the observation can now
be made.

## Observation

The observer's entry into a classroom is depen-
dent upon the teacher's style and the class's
experiences.  The observer may ask the teacher:

1.  How should the class be approached?
2.  Should the teacher prepare the class for
    an observer?
3.  Where is the most appropriate place to
    accurately observe?

The observer comes prepared with observational
tools -- the code, coding paper, pencils, clip-
board, and a timing device (optional).

The observer establishes himself comfortably in
the classroom.  Previous to coding, the observer
takes time to collect a general picture of the
classroom.  The observer should determine what
activity is in progress, who is interacting, and
where the target child or children are located.

Two difficulties may arise:

1.  Is the target child aware of the observation
    and, if so, altering his behavior?  If this
    occurs, a decision is made to continue ob-
    serving with this factor in mind or to dis-
    continue.
2.  Is the activity or information to be gained
    relevant to the referral?  Depending on the
    above difficulties, the observation may be
    continued after a time interval or on a later
    date.

## Follow-up Discussion

After observing, the observer compiles the data
and makes an initial interpretation. If he
decides useful information has been gained from
the observation relating to the original
referral and/or the objectives, further inter-
pretation and implications can be drawn.

At the scheduled follow-up discussion, a posi-
tive approach to the initiator is advisable.
Information should be shared; then joint impli-
cations can be made for possible intervention
strategies, for reevaluation, for formal assess-
ments, or for further observation.

## Intervention Progression

Effective usage of the SOB is dependent upon the
appropriate approach to the referral by the ob-
server and application of the appropriate steps.
This is accomplished through a progression of
decisions, events and evaluations. This pro-
gression is explained by the intervention pro-
cess flow chart in Figure 1.2 and the brief
narrative relating to it.

## Units of Behavior

Recording of coded behavioral items is practiced
during observation most successfully when the
observer is readily familiar with both the mean-
ings and abbreviations.

Categorization: For the observer's intro-
duction and ease of learning, units of behavior
are classified into ten categories of item
clusters:

1. Information
2. Questions
3. Instructional Devices
4. Control
5. Affective
6. Participation
7. Response
8. Self-Improved
9. Other-Involved
10. Miscellaneous

Figure 1.3, Item Clusters, provides a basic dis-
play of this organization. The unit behavior

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Further
Assistance
Not
Needed
1.1

Ref.
Teach.

Referral
Received

Analysis
of
Referral
1.0

Observable
Behaviors
Identified
2.0

Classroom
Observation
3.0

Inter-
pretation
of
Observ.
4.0

Decision
5.0

Strategies
for
Change
Identified
6.0

Academic
Task
Analysis
7.0

Academic
Adjustment
Sequence
7.1

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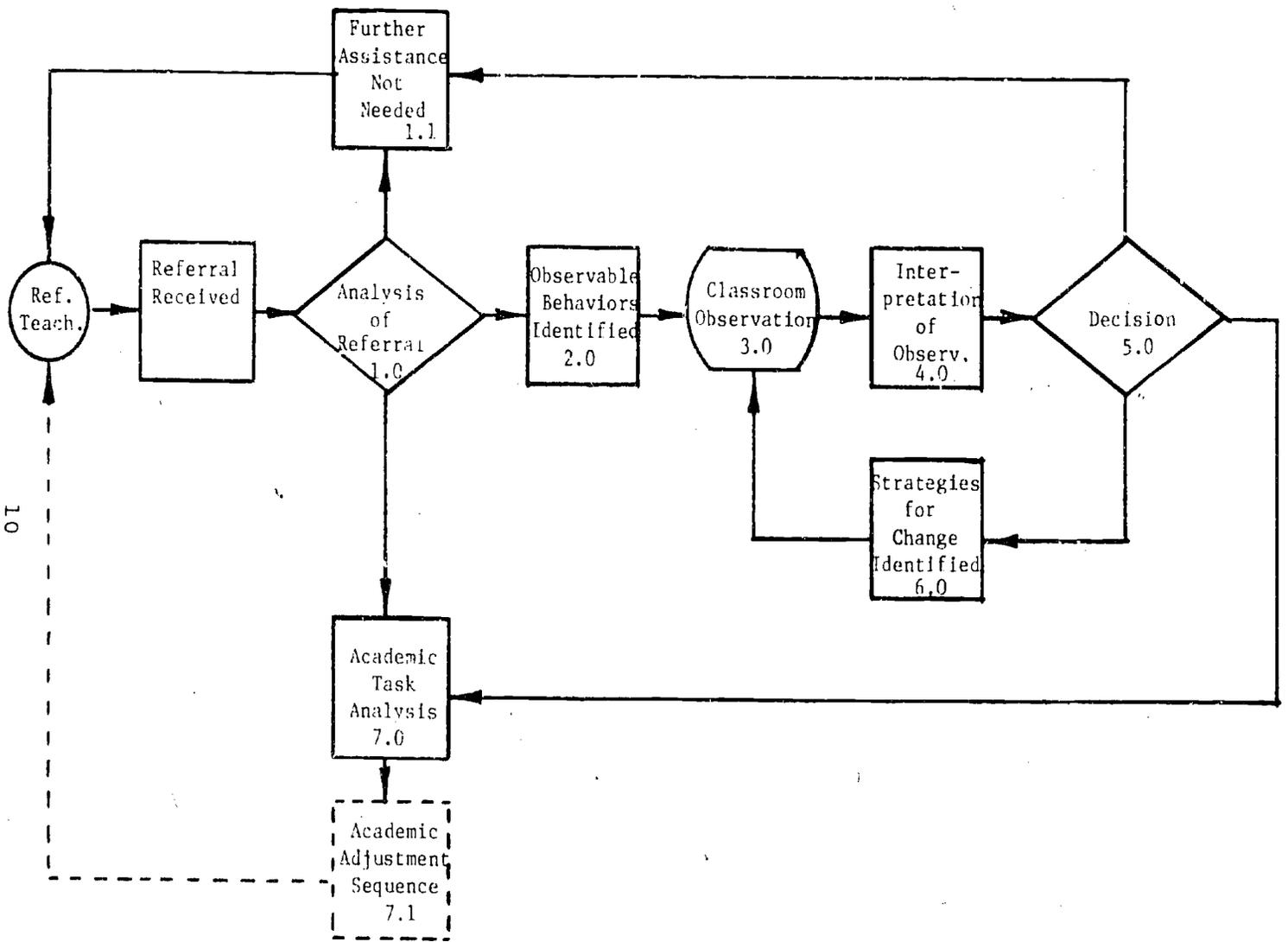
Fig. 1.2

Flow Chart for Systematic Observation of Behavior

Fig. 1.2 (cont.)

Narrative

Upon receipt of the referral, the following sequence of events occurs:

1.0   Decision

    1.1   No assistance needed; refer back to teacher
    1.2   Academic task analysis suggested.  Proceed to 7.0
    1.3   Requires observation.  Proceed to 2.0

2.0   Identify behaviors to be observed

    2.1   Using the General Survey Form (Fig. 1.1) identify
        behavior referring teacher is concerned about
    2.2   Arrange with referring teacher times when it would be
        appropriate to observe

3.0   Observe behavior

4.0   Interpret behavior

5.0   Decision

    5.1   No assistance needed.  Refer back to teacher (1.1)
    5.2   Academic task analysis suggested.  Proceed to 7.0
    5.3   Strategies for change suggested.  Proceed to 6.0

6.0   Identify strategies for change

    6.1   Select strategies
    6.2   Implement strategies
    6.3   Arrange time to observe.  Recycle back to 3.0

7.0   Academic task analysis

    7.1   Arrange with referring teacher appropriate academic
        adjustment sequence
    7.2   Follow-up as necessary

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1. Information

   Amp - GA - I - NC - O - S

2. Questions

   DKY - GA? - Q - AQ - QC - QCD
   QCL - QD - QCQ - QE - QM - QO
   QP - QR - QRV - Q✓

3. Instructional Devices

   AK - AR - CA - Cau - CC - Why
   CI - DKP - DR - HT - LAC - Wht
   LD - OA - QRD - QRH - QWHT -GT
   REP - RV - SAL - T - WDO? -
   RT

4. Control

   A - AA - AK - DB - DC± -
   GRP - NRM - PC - Prx - Pun - PW
   REM - RF - RT - Sh - SN - STP
   BOT - WY - NVS

5. Affective

   DIS - CO - Enc - PF - INT - KD
   >    ☺    ᴧ    ◡̈    ☹

6. Participation

   HLP - HU - L - ND - OT - PNT
   SQ - VM

7. Response

   PRP - DIS - BO - BS - CNT -
   CMP - DEP - DK - DNI - DUN -
   MT - NR - (R∴) - PRT - RDG -
   SO - VR - (⌣) - PW - SE - WC -
   WM

8. Self Involved

   DD - PM - RL - SV - ZZ - CRL
   PL

9. Others-Involved

   DSPO - Excl - OS - OT - P± -
   PL - POB - ST - POS

10. Miscellaneous

    BB - BK - CHB - DSK - ERA -
    FIR - HD - IS - MU - N - OB -
    OC - PPR - T - WND -→ FG -
    TY - V

Fig. 1.3 Item Clusters

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items within each of the categories are representative of the single common property related to the category.

Although an interrelated system or construct does not exist among the categories, the intent is to cluster the items for economy of use and not to provide a diagnostic or remedial framework by which to interpret the occurrence of single or multiple categories.

Appendix A, the Glossary of Items, provides clarification and definition of both the behavioral categories and the sub-items. The Glossary of Items includes:

1. The abbreviated behavioral code,
2. A definition in statement form, and
3. A hypothetical example of the behavior.

Although the behavioral item may apply to a variety of classroom examples, the observer is encouraged to become familiar with the basic statement theme and to relate the concept to whatever variations may occur. The unit items are applicable to coding specific observations of either teacher or student.

Implementation

    Observing: The Systematic Observation of
Behavior (SOB) is a tool that allows much flexibility in observing and recording behavior.
When a referral is received from the teacher,
the General Survey Form should be given to
the teacher. Together with the observer, the
teacher determines what particular behaviors of
the child are troublesome. These then become the
behaviors to record. Suppose the teacher was
concerned with the following behaviors: out of
seat (os), in seat (is), talking or verbalizing
(v), with other child (oc), day dreaming (dd),
and on task (ot) behaviors. These are the
behaviors that would be observed. Whenever
other than the above-mentioned behaviors would
occur, the observer would simply record it on
task (ot) or off task (ot-).

The observer needs to be careful while in the
classroom. If it is obvious that the observer is
watching a particular child, it does not take long

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for that child to notice. This may change his
behavior and make it difficult to get accurate
data. The observer should look around the
classroom without focusing his attention on the
child. When it is time to make an observation,
he then might look at the child out of the
corner of his eye or scan the whole class in-
cluding the student in question. He should
never fixate on the child.

Recording Alternatives: The teacher may
want to know just how her own behavior affects
the behavior of the student. The observer
then records the behavior of the student at a
predetermined frequency and at the same frequency
records the teacher's behavior as it is related
to the student. The teacher may be helping
another child across the room and that may have
some effect on the behavior of the target child.

Systematic recording of behavior may involve
several aspects. The observer may want to watch
only one student or he may watch up to ten
students, recording their behaviors. For
example, the classroom teacher may make a re-
ferral on one child. The observer then goes
into the classroom and records the behavior of
the child for a period of about 30 minutes. This
will give the teacher and observer a basis for
diagnostic and prescriptive information for
control of the child's behavior.

Or the concern may center on a group of children.
The observer then can list the names of the
children in the order that they are seated. He
then goes down the list of children, recording
their behaviors. When the list is completed
he starts at the top of the list again. The
names of the students are written down the
left hand side of the paper in a sequence that
coincides with their seating arrangement. For
the first time interval, recordings are made
for the first child; In the second time inter-
val for the second child, and soon until the
behaviors of all children named are recorded.
This process is repeated for about 30 minutes.
A summary of each child's behavior can then be
made. The teacher and the observer can to-
gether determine what child would benefit from
an intervention based on the observation of
behavior.

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How to Record Behavior:   The two important elements involved in recording a child's be-havior are the behavioral code and the time frequency.   Before one can record behavior, he must be familiar with the code, or at least be familiar with the code for the behaviors to be observed.   This can be determined by the observer and the classroom teacher.   The fewer behaviors observed, the easier they will be to record.   The information is written on the Observation Form, Figure 1.4.   The numbers at the top indicate the number of time intervals on each line, with the length of the interval de-termined by the observer prior to observation. The numbers down the left hand side indicate the potential number of children to be observed. When observing one child, disregard the numbers on the left.   Each pair of rows are separated by a heavy dark line.   The top line is for recording the behavior of the student.   When, the first pair of rows are completed, start on the second pair of rows, until the page is finished.

The child's behavior is recorded at every speci-fied time interval.   The time interval can range from 3 seconds up to one minute depending on the needs of the teacher and the experience of the observer.   A longer time interval is suggested for the observer unfamiliar with the codes. The observer can keep track of the time by watching a clock, by counting, by use of an electronic beeper, or a tape recorder that has been prepared in advance to cue the observer at the time interval.   The observer should record the behavior that occurs precisely within the time interval.   The recording is continued in this manner until the observation form is complete. The observer then summarizes the information in preparation for a conference with the teacher.

Summarizing:   The behavior observation data needs to be organized so that the teacher can make some diagnostic conclusions.   Without this information it would be difficult to make use-ful comparisons of behavior of one child over a period of several observational times or to compare one child with another.   The number of entries for each different behavior is counted and then recorded on the Summary Chart, Figure 1.5, to determine percent of each behavior to total time involved, directions on the Summary Chart may be followed.

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Name_____  Date_____

Location_____  Time interval_____

Activity_____  Beginning time_____

Observer_____  Ending time_____

| NAME | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
|------|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 6.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 8.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 9.   |   |   |   |   |   |   |   |   |   |   |   |   |
| 10.  |   |   |   |   |   |   |   |   |   |   |   |   |
| 11.  |   |   |   |   |   |   |   |   |   |   |   |   |
| 12.  |   |   |   |   |   |   |   |   |   |   |   |   |
| 13.  |   |   |   |   |   |   |   |   |   |   |   |   |
| 14.  |   |   |   |   |   |   |   |   |   |   |   |   |
| 15.  |   |   |   |   |   |   |   |   |   |   |   |   |

Fig. 1.

A sample observation form for recording observed behaviors

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Name_____ Date_____ ·Grade_____

Teacher_____ Observer_____

| a | b | c | | d | e | f |
|---|---|---|---|---|---|---|
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |
| _____ | _____ | ÷ _____ | x 100= | _____ | _____ | _____ |

1.    Write the code for all categories used during observation in
      column a.

2.    Write the frequency for each category used in column b.

3.    Write total frequency for all categories in column c.  Divide
      number in column b by number in column c.

4.    Multiply number in column c by 100 and write in column d.  This
      will give percent of occurence.

5.    Write frequency of all on-task (ot) behaviors from column b
      in column e.

6.    Write frequency of all off-task (ot-) behaviors from column
      b in column f.

7.    Total and divide on-task (ot) and off-task (ot-) behaviors by
      total frequency of all categories.  This gives percent of
      on-task (ot) and off-task (ot-) behaviors.

)

Fig. 1.5

Summary Chart

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Evaluation Form: Percentage of recorded
behavior observations should be transferred to
the Evaluation Form, Figure 1.6. This form
serves two main purposes: a) one can compare
subsequent observations to determine if the
intervention is or is not effective, b) one
can compare one child against another to see if
behavior deviates from the norm. Recording in-
structions are provided with the Evaluation Form.

## Observer Development and Practice

Coding Preparation: For the purpose of
case study development and completeness, the
beginning observer is best prepared by:

1. A gradual approach to learning the behavioral
   item codes:
2. Conducting child observations or case studies
   that are initially general, becoming in-
   creasingly specific.

The use of coded items for behavior categories
or "clusters" only, is most easily accomplished
initially. The basic 10 (Information (I),
Questions (Q), etc.), categories of behavior for
a single child, and a time interval rate of
10-15 seconds may be comfortable practice condi-
tions, using the Observation Form for a beginning
classroom session.

With increased facility, the observer may shift
to unit behavioral item recordings with an in-
dividual child, and later group, or teacher/child
interactions, with reduced time intervals,
(5-8 second/recording).

The initial case study should maximally include
basic or general information, as:

1. Referral information from the teacher;
2. Description of the setting in which the be-
   havior occurs;
3. The categorical behaviors of the child(ren)
   recorded in the observation;
4. Questions related to the observation by
   teacher and/or observer;
5. Preliminary opinions or answers to the
   concerns.

As the observer achieves greater insight and
recording speed with general observations,

Name_____ Observer_____
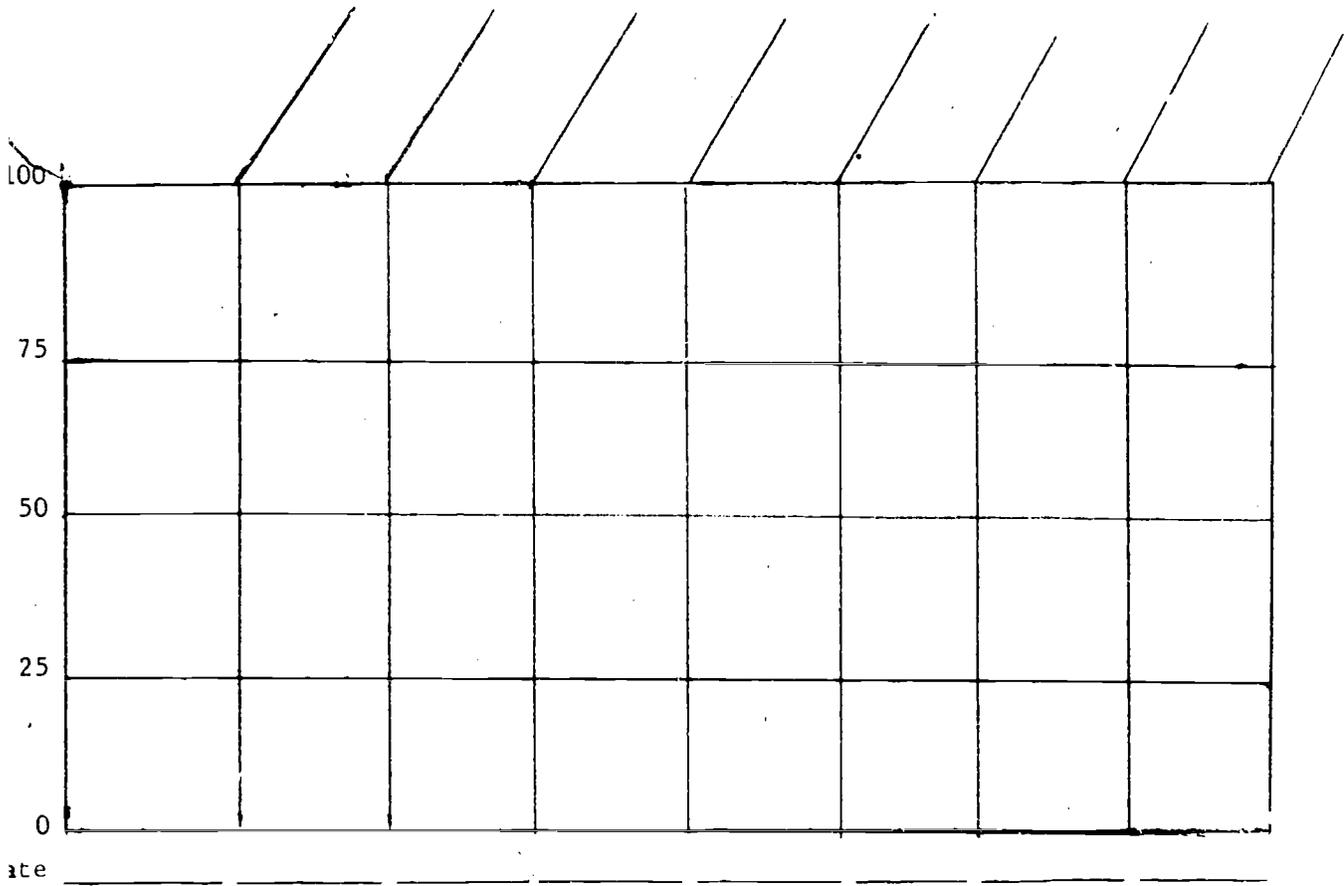


1. Write the code of the observed behavior on the slanted line. The last
   line is for other behaviors.

2. Chart percentages of occurrences of each behavior observed on the left
   side of each column. There is room to chart behaviors of 10 different
   observation times. One at the beginning of the school year and another
   at the end of each month during the school year.

3. Write the date of the first observation of the first line below the
   chart. Write the date of the second observation on the second line of
   the chart. Write each subsequent date on the remaining lines.

Figure 1.6  Evaluation Form

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additional case study information may
include:

1.  Determining objectives for the obser-
    vation.
2.  Selecting unit behavioral item (vs.
    categorical).
3.  Implementing the specific unit-item coding
    during observation;
4.  Making an accurate interpretation and
    evaluation of the observation.

Figure 1.7, Case Study Development, provides
basic guidelines for the aforementioned
considerations.  Figure 1.8, Case Example 1,
and Figure 1.9, Case Example 2, are included
from actual observations.

Summary of Systematic Observation of
Behavior (SOB)

Rationale to support use of informal observation-
al instrument:

1.  Eliminates much formal diagnostic work and/
    or use of generalized formal batteries.
2.  Provides inroads for further exploration
    through informal diagnosis.
3.  Provides shortcuts to evaluate academics,
    behaviors, and learning modes highly rele-
    vant to a specific teacher-child interaction.
4.  Gives teachers utility of diagnostic
    information.
5.  Removes stigma of categorization in diagnosis.
6.  Allows for transformation to teachable out-
    come skills.
7.  Provides common communication base.
8.  Integrates essential aspects of informal
    diagnosis.
9.  Provides factorial scheme of the child
    in his mainstream environment.

Descriptors that speak to the purpose of the
instrument:

1.  Presents        :ture of multi-dimensional
    applicati.
2.  Provides a visual representation of what
    is observed.
3.  Alleviates communication stress with
    teachers.

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Behavioral Items

Cluster/category--single child

Cluster/category--group or teacher/child

unit--single child

unit--group or teacher/child


Case should include these items:

1.  Referral

2.  Objectives for observation

3.  Selection of observation categories (units)

4.  Setting

5.  Categorical behavior codes of the child(ren) during observation

6.  Specific item coding

7.  Interpretation·

8.  Questions

9.  Answers

General Case Studies should include information only in items 1, 4, 5, 8, and 9.

Specific Case Studies should include information in items 1 through 9.

Figure 1.7 Case Study Development

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Case Example 1.

Lisa

Setting: a resource teacher and Lisa are working on a classification task.
The material is a workbook. The task is to select, from four alternatives,
three pictures that may be classified on the basis of similar functional
uses for the objects pictured.

The S.O.B. shows the following:

1. Out of ten responses, Lisa receives verbal approval from the resource
   teacher for three responses.

2. On the three approved responses the resource teacher asked check
   questions to which Lisa responded with incorrect or ambiguous verbali-
   zations.
   Example: Resource teacher, "How did you decide on those three?"
   Lisa, "They weren't alike."

3. A later sample (one week later) shows that Lisa's success rate re-
   mains the same, but that the 3 successes are now in response to
   different items, i.e., items passed during the previous work with
   the same material were now failed.

4. Adjusting the questioning pattern of the resource teacher so that
   Lisa was verbally reinforced for her correct selections before the
   check question was asked, resulted in a complete change in Lisa's
   response pattern, i.e., Lisa would not give incorrect or vague
   responses when check questioned on prior correct choices.

5. A reversal of the resource teacher's questioning pattern (back to
   check questions without verbal reinforcers for prior correct
   selections) was accompanied by incorrect or vague responses from
   Lisa in response to check questions.

| Q | AO |
|---|---|
| Ans- | Ans+ |

Fig. 1.8

Case Example 1.

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Case Example 2

Cory

Setting:            Regular classroom, about 30 children, one teacher.

Task:              Copying paragraphs written in cursive from the
                   blackboard.

Task Requirement:  Letter formation accuracy...within reasonable time
                   limit.


SOB results indicate for the baseline observation:

1. Percentage of LBB (subject looking at blackboard) during
   5-second intervals in comparison to percentage rate of vm
   (visual motor) was 92% to 8%.

2. Only three sub-categories were utilized during the obser-
   vation, lbb, vm, (which suggests that on-task time was
   close to 100%.

3. A check of the child's product showed that most letters were
   recognizable but that spacing between letters was irregular.

4. At the teachers ⎡ RT ⎤ all children were at task completion
   except Cory.

5. Two months after an intervention program was instituted, the
   percentages of lbb and vm for most 5-second intervals during
   an observation on similar copying tasks were lbb=42% and vm=58%.
   In addition Cory was at a task completion when the teacher gave
   the ⎡ RT ⎤ signal.

   A comparison of the child's product at the post intervention
   point to his pre-intervention product showed an improvement in
   spacing of letters as well as an increase in the number of
   required responses completed.


Figure 1.9 Case Example 2

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Name __Cory_____  Date_____

Location_____  Time interval_____

Activity_____  Beginning time_____

Observer_____  Ending time_____

| 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| lbb | lbb | lbb | lbb | lbb | lbb | vm | Lbb | lbb | lbb | lbb | vm |
| lbb | vm/:̈ | lbb | lbb/:̈ | vm | lbb | lbb | lbb | lbb | vm | vm | lbb/:̈ |
| lbb | lbb | lbb | vm | lbb | lbb | lbb | vm | lbb | lbb | lbb | vm |
| lbb | lbb/:̈ | lbb | vm | lbb | vm | lbb | lbb | lbb/:̈ | lbb | vm | lbb |
| RT |  |  |  |  |  |  |  |  |  |  |  |
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Figure 1.9
(continued)

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Name _Cory_  Date _____  Grade _____

Teacher _____  Observer _____

|  | a | b |  | c |  | d | e | f |
|---|---|---|---|---|---|---|---|---|
|  | _166_ | _36_ | ÷ | _53_ | x 100= | _68%_ | _36_ | ____ |
|  | _VM_ | _12_ | ÷ | _53_ | x 100= | _23%_ | _12_ | ____ |
|  | _ö_ | _5_ | ÷ | _53_ | x 100= | _9%_ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |
|  | ____ | ____ | ÷ | ____ | x 100= | ____ | ____ | ____ |

1.   Write the code for all categories used during observation in column a.

2.   Write the frequency for each category used in column b.

3.   Write total frequency for all categories in column c. Divide number in column b by number in column c.

4.   Multiply number in column c by 100 and write in column d. This will give percent of occurrences.

5.   Write frequency of all on-task (ot) behaviors from column b in column e.

6.   Write frequency of all off-task (ot-) behaviors from column b in column f.

7.   Total and divide on-task (ot) and off-task (ot-) behaviors by total frequency of all categories. This gives percent of on-task (ot) and off-task (ot-) behaviors.

Fig. 1.9

(continued)

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4. Provides highly useful inservice tool instrumental to teacher self-assessment and/or behavior change.
5. Provides numerical basis for quantitative data for pre- and post-testing.
6. Yields information relevant to the reinforcement and expansion of teacher and observer skills.

IDENTIFICATION: Screening Instruments

The intent of the screening process is to gather together all known information about a child, add to that information missing links, and from all the systematically collected data, make a well documented assumption. The assumption might be that the child is functioning adequately, above the expected level, or below the expected level. It is very important that screening be continuous to detect as early as possible an educational or personal problem. Decisions can then be made to prevent a problem from growing, to correct that problem, or to remediate the problem. If the problem is outside a teacher's jurisdiction or realm of knowledge, the screener has documented information with which to make a referral to the proper source.

For descriptions of common handicapping conditions, see Appendix B.

Observation has already been presented at one possible mode of screening. The two following methods for locating potential learning or behavioral problems are informal and formal testing.

Informal Instruments

Screening instruments designed by teachers to assess a child's strengths and weaknesses in designated areas can be convenient and useful measures. Such devices are called criterion-referenced tests. These differ from formal, or norm-referenced tests in that they are designed to determine how a child functions within a set of criteria determined by the teacher. Normed tests, on the other hand, assess a child's performance in relation to standardized expectations; for example, whether the child is functioning like other children his age or grade level.

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Informal screening often supplies specific information needed by a teacher more easily and earlier than a standardized test designed for a general audience. In addition, informal screening information can be used to create a total picture of a child's observed behaviors. It is an excellent tool to use in preparing a developmental profile for a child, as detailed in the next section of this chapter.

Following are some suggestions for teacher-made tests which may be used in place of or along with more formal instruments.

## Motor Coordination

1.  Gross Motor
    a.  observation on playground
    b.  observation in a particular activity that requires much coordination such as dodgeball
    c.  defined obstacle task such as: climb through the monkey bars, walk with hands across the high bars, skip around the swings, hop through the tires, etc.
    d.  "Simon says"
    e.  Motor rating scales
2.  Fine Motor
    a.  observation of writing exercise
    b.  evaluation of writing
    c.  defined task for copying, cutting, stringing and joining of objects

## Social Maturity and Interpersonal Relations

1.  Observe daily responses and interactions
2.  Set up at situation to observe
    a.  have child introduce someone new to principal
    b.  put child in strange or unknown group of children
3.  Design oral or written test of "what to do if . . ."
    a.  you broke your bike away from home
    b.  you were lost
    c.  someone new comes to school
    d.  you were accused of something you didn't do
4.  Behavioral rating scale
5.  Self esteem inventory
6.  Socio-gram

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## Speech Development

1. Observe and compare to other children in class
2. Give a list of words to read
3. Have the child repeat a nursery rhyme
4. Give the child the opportunity to talk into a tape recorder in a room by himself

## Language Development

1. Observe interactions with the class
2. Make anecdotal records on
   a. how he asks questions
   b. when and how he reports the events in his life
   c. his use of words
3. Ask two children to sit in a corner and find out as much as they can about each other. Consider:
   a. length of time spent
   b. extent of information
   c. type of information
   d. how information was reported
4. Have the child write, tell, or tape a story that will last three minutes; establish criteria for acceptable grammar before you evaluate

## Reading

1. Have child read to you from basal reader of each grade
2. Give an informal test such as Gray's oral readings
3. Give the child word lists from each level of reading (1-6) and set a criteria for acceptance (80% accuracy within 2 minutes)

## Arithmetic Reasoning

1. Ask questions of "more or less"
   a. if I have spent all of my money and you haven't spent your money, will I have more or less?
   b. after giving Jimmy 6 of my 94 baseball cards, Bill 9 of my cards, and John 8 of my cards, when they each had 15 before, who has more than me? Who has less?
2. Use algebraic formulas

## Arithmetic Computations

1. Keep a progress check on work done in class

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2. Give a test of facts for all functions
3. Design a test after task analyzing all of the mathematical steps the child should have at the present time

## Spelling

1. Give oral spelling tests from words used in that grade book
2. Give a different list of words and have child sound them out
3. Ask the child to write every word he can think of to write; decide on criteria before you evaluate
4. Make a test that selects five words from a spelling book or reading book from each grade level

## General Information

1. Observe the child in comparison to his classmates
2. Design a test of word meaning from easy to hard
   a. (1) orange . . . (15) stoker
   b. find the class average and plot the child accordingly
3. Ask questions about:
   a. the neighborhood
   b. television
   c. the school
   d. the government, etc.
4. Have the child explain how something works:
   a. cooking
   b. a clock
   c. a conduit

## Mobility

1. Give the child an errand to run, observe how efficiently it is done
2. Give the child a map to follow, such as in a treasure book
3. Observe how he moves around school and the degree of his confidence

## Vision

1. Observe his classroom behavior when writing, walking, or talking to someone.  Check:
   a. facial expression
   b. distance from object
   c. spatial orientation

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2. Make a screening device that is a simpli-
   fied version of Snellen's; include color
   discrimination

Hearing

1. Observe the child in classroom  nviron-
   ment
2. Put a  tory on a tape recorder. Use
   earphones, and record at what volume the
   child indicates he can hear and at
   volume he is uncomfortable
3. Whisper numbers or words twenty feet from
   child (checks high frequency)
4. Bring watch closer to ear until child re-
   ports hearing sound

---

Formal
Instruments

When time or expertise is not available for
teacher-made criterion-referenced tests, formal,
printed tests may be used for screening.
There are many such tests on the market and
available for use. Several of these are listed
and described on the following pages. When
using standardized tests, be sure to keep in
mind that these instruments are based on norms
from samples of large numbers of children
tested. If you want to assess a particular
competency in a child according to some speci-
fic criterion, a teacher-made test will give
the most accurate results.

IDENTIFICATION: Profiling

Children are a combination of abilities, po-
tential, and proficiencies. The way we as
educators evaluate children is often directly
related to our own priorities of acceptable
behavior and performance. The "average" or
near normal child stands a better chance of
being accepted by his teachers and finding some
level of success. Some children  pear to be
relatively normal, or have acceptable behavior,
but for some reason do not succeed. The dis-
crepancy occurs because it is difficult to ass-
ess the total child and disregard personal
priorities and judgments concerning acceptable
behavior.

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A systematic method that would reveal a total
picture of a child should be a tool for all
teachers because it is crucial in assessing
the child's performance and achievement.
Additionally, it assists the teacher in pro-
gramming relevantly and evaluating the child's
progress.   A total picture of a child is the
first opportunity to spot a warning sign that
the child may have a disability or a problem
and to document the information.   It is with
the early recognition of the warning sign that
further problems may be prevented, that a
deficiency may be corrected, and that dis-
abilities can be remediated.

One such systematic method of developing a
summary of the whole child is the profiles
developed by Samuel Kirk.   Since teachers have
been accepted by many educators as the primary
source for recognizing a potential problem, the
profiles make use of teachers' experience and
ability to observe the child in various settings,
to recognize how he interrelates, and to see
how he performs in relation to other children
his age.   Judgments made by the teachers are not
    ected to be precise--their task is to screen
    ormation, document it, and decide when
      ther investigation should be initated.

There are two profiles used by Kirk.* The first
uses age and grade equivalents as the basis to
show developmental differences, the second
assesses each category in the profile according
to a simple level or proficiency rating.   The
following discussion will explain each of the
profiles and their components, how to assess the
components, how to graph the profile, and finally,
how to interpret the graphed profile.

---

Kirk's Profile      Profile I -- Age and Grade Equivalents

This profile uses age and grade equivalents to
indicate expectant age level or grade level of
development, performance, or achievement (see
Figure 1.10).   Age equivalents and the corres-
ponding grade equivalents are listed on the
left, and across the top are listed physical
descriptions, performance estimates, and achieve-
ment approximations describing areas to be
assessed for each child.   These are assessed
factually--by observation, by informal screening

    *Samuel S. Kirk, Educating Exceptional Chil-
dren, 2d ed., Boston:   Houghton Mifflin Co., 1 72.

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Profile I                          Bill                                                                    Profile II

AGE AND GRADE EQUIVALENT

| Grade Equivalent | Age Equivalent | Chronological Age | Height | Weight | Motor Coordination | Mental Ability | Social Maturity | Speech Development | Language Development | Reading | Arithmetic Reasoning | Arithmetic Computation | Spelling | General Information | | Mobility | Vision | Hearing | Interpersonal Relations | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 17 | | | | | | | | | | | | | | | | | | | |
| 11 | 16 | | | | | | | | | | | | | | | | | | | 5. Very Superior |
| 10 | 15 | | | | | | | | | | | | | | | | | | | |
| 9 | 14 | | | | | | | | | | | | | | | | | | | 4. Above Average |
| 8 | 13 | | | | | | | | | | | | | | | | | | | |
| 7 | 12 | | | | | | | | | | | | | | | | | | | |
| 6 | 11 | | | | | | | | | | | | | | | | | | | 3 Average |
| 5 | 10 | | | | | | | | | | | | | | | | | | | |
| 4 | 9 | | | | | | | | | | | | | | | | | | | |
| 3 | 8 | | | | | | | | | | | | | | | | | | | 2. Below Average |
| 2 | 7 | | | | | | | | | | | | | | | | | | | |
| 1 | 6 | | | | | | | | | | | | | | | | | | | 1. Very Defective |
| | 5 | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | | | | | | | |

Fig. 1.10

Example showing child data on Kirk's profile forms

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tests, or by formal devices that offer a
structured score.  They are then plotted on
the profile by a peer comparison, an age score,
or a developmental scale.

Methods for assessment and plotting can best be
described by assessing one child.  The profile
will be discussed by examining the assessment
criteria.  Each area which is not a definite
factual category has been defined.  In addition
to the definition, a three part summary is in-
cluded for quick reference.

"A" refers to the type of information assessment.
The information is either factual (such as
height or age), decisional (such as reading).
"B" refers to the method that is used to plot
the information on the profile, age, or grade
equivalency or proficiency level.
"C" refers to the possible methods of measuring
the abilities.

A case study will be used in coordination with
the explanation to help clarify assessment and
plotting of a profile.

Bill is in the 3rd grade and is 8 years 2 months
old.  His teacher was concerned about his
overall performance and decided to do a profile
on Bill to help pinpoint his problem.

The Profile

    Chronological Age:  Factual information is
retrieved from personal file.  Bill is 8 years
and 2 months - Plot Bill's first dot slightly
into the box for 8 years 8.  The bottom line
denotes the start of a new year.  So when Bill
is 10-years-old, he would be plotted right on
the 9 line.

This mark established the criteria for Bill's
comparison with his own development of class
peers.

Bill is in the third grade.  His age and grade
equivalent correspond.

| Grade | Age |
|-------|-----|
| 3     | 8   |

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Height and Weight: 1) Factual information;
2) plotted by comparison to expectancy develop-
mental level; and 3) measured by use development
chart or class comparison.

Bill is 4 feet tall and weighs 52 pounds.  A
look at standard growth charts shows that an
average eight-year-old boy should be 4 feet
2 inches tall and weigh 58.2 pounds.  Bill is
slightly behind in his expected development.

His height and weight are at the seven-year-old
level according to a standard growth chart.
His graph would be plotted like this:

| Chronological Age | Height | Weight |
| --- | --- | --- |
| 8 . | | |
| 7 | . | . |

Interclass  comparisons may be useful to the
teacher.  Bill's teacher weighed and measured
all the boys in the class and found the class
average.  The average height was 4 feet 1 inch
and average weight 54 pounds.  The class
was below the average on the chart.  Bill would
still be below the class average but the dif-
ference is not as significant as indicated by
the development chart.  The teacher would still
plot all the boys below their age line.  Later
she may find the norm inappropriate or that
her class of boys are, in fact, deficient in
their height and weight development.

   Motor Coordination:  This is an assessment
of the degree of fine and gross motor coordin-
ation.  Tasks are performed by the child in
relation to his developmental stage:

Teacher judgment
Plotted by comparison of age-peer
Observation or screening devices found in
Section E of Appendix C (Appendix C contains
brief descriptions of various screening
instruments.)

Bill writes legibly and with letters formed
properly.  He has no difficulty in performing
any fine motor tasks such as cutting with
scissors.  He can catch, throw, and run with no
difficulty.  He has average coordination.

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Bill's teacher could have set up defined
tasks such as those listed in Section E,
Appendix C, and make a judgment about his per-
formance on those tasks. The <u>Barsch</u> twelve
dimensions are developmental and would define
specific abilities or disabilities that would
be helpful for program adjustment, if needed.

  <u>Mental Ability</u>: This evaluates the average
ability for a particular chronological age,
based on normative studies or teacher assess-
ment:

Standard score
Plotted by conversions to mental age
Intelligence test or make estimation

Bill has never had an intelligence test. His
teacher cannot plot a true measure on his profile.

However, his teacher may decide to make a
judgment and estimate where he falls in relation
to other children. She may say he needs to have
directions repeated several times before he can
learn or grasp an idea. He describes objects
with one dimension while most of the children
are beginning to talk in two or three dimen-
sions. She may then plot an estimate. The
below-average mark is not an absolute decision,
but a sign that the teacher has some question
about his mental ability. This could be an in-
dication that an intelligence test should be
administered to find out why it takes so many
repetitions before learning. Administration of
the Slosson Intelligence Test shows his IQ to be
94. This may be converted to a mental age of
7 years 7 months.

```
      MA
    +-----+
 8  |     |
    |-----|
 7  |.    |
    |-----|
 6  |  ?  |
    +-----+
```
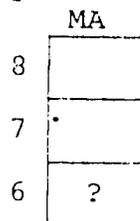
The teacher can now change her estimate and make
a definite mark. His mental age is still with-
in an average range. Deviation for all areas
one-year above or below actual age is still
considered within the average range.

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Social Maturity:  This is an assessment of the appropriateness of a child's behavior for his age.

Decisional:  This is plotted by age.  Use observation or screening devices from section F, Appendix C.  Bill behaves much like his classmates.  He does not generally over-react or under-react to situations.  When a joke has been told he will laugh, but not tumble to the floor like another boy in his class does.  He responds within the class limits and rules.

Social  Maturity

| 8 | . |
|---|---|

Speech Development:  Speech development is assessed by the child's articulation, rhythm, pitch, and voice quality.

Decision or age score
Plotted by age
Use teacher-made test or a screening device from Section G, Appendix C

Bill's voice and words are muffled.  His "voiced sounds" are nasal.  Sometimes his sounds are in a monotone.  The teacher plotted his speech development below the other children.

Speech

| 8 |   |
|---|---|
| 7 |   |
| 6 | . |

Another child's speech that was more infantile than his peers would have been plotted below average as well.  If the speech was less in-fantile or spoken more precisely than the other children's speech, it would be plotted above the expected level

Language Development:  This is assessed by the comparative ability to speak, use, and sequence sounds for use in interpersonal communications:

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Decisional
Plotted by age

Use observation or screening device from
Section G, Appendix C.

Bill's classmates and teacher understand him.
His teacher notes that unlike his peers, Bill
often eliminates verbs in sentences and drops
some words off the end of his sentences.
Otherwise, his language usage or his ability
to communicate is similar to other children in
his class.  However, his graph is marked below
average because of his tendency to drop his
verbs and sentence endings. '

| 8 | |
|---|---|
| 7 | . |

Language

Reading:  Reading is assessed at a general
reading level for word knowledge and compre-
hension.  A grade equivalent score is given
which is marked on the screening profile.

Test standard score
Plotted by age-grade equivalency
Use screening device from Section D,
Appendix C, or teacher-made devices

All students in Bill's school were given the
Metropolitan Achievement Tests.  Bill's reading
score was "52" which is a grade equivalent
score of 2.6.

| Grade Equiv. | Age | Reading |
|---|---|---|
| 3 | 8 | |
| 2.6 | 7 | . |

Bill is slightly below his expected level.

Arithmetic Reasoning:  This is an assess-
ment of the ability to problem-solve mathemat-
ical or practical situations:

Measure by standard score or class average
Plotted by grade-to-age equivalency
Use teacher-made device or a screening device
from Section D, Appendix C

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Bill's score on math problem-solving on the
Metropolitan Achievement score was 60 or
slightly above 3.0 grade equivalency.

| Grade | Age | Arithmetic Precision |
|-------|-----|----------------------|
| 4 | 9 | |
| 3 | 8 | . |

Remember this line denotes the beginning of
third grade and 8 years of age.

Arithmetic Computation:  This assessment
is made on the basis of performance in arith-
metic functions of adding, subtracting,
multiplying, and dividing.

Measured by standard score or class average
Plotted by grade-age expectancy
Use screening device from Section D, Appendix C
or a teacher-made device

Bill scored a 60 on the Metropolitan subtest
for Mathematical Computation, which is a
grade equivalent of 3.3.  His teacher gave one
of her own computation tests.  Bill got 24 out
of 25 problems correct.  The average score was
20 correct for the class.  Bill is just above-
average in his arithmetic computation.

| Grade | Age | | Computation |
|-------|-----|---|-------------|
| 4 | 9 | | |
| 3 | 8 | . | |

Spelling is assessed as an academic skill re-
quiring phonetic knowledge and/or memory.

Measured by standard score or class average
Plotted by grade to age
Use screening instrument from Section D,
Appendix C, or teacher-made devices

Bill had a 2.8 grade equivalent score on the
Metropolitan subtest.

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| Grade | Age | Spelling |
|-------|-----|----------|
| 3 | 8 | |
| 2 | 7 | . |

Another way of getting this score could have
been a spelling test using words from different
grade levels of spelling and finding the
proficiency level.

General Information: This assesses the
extent of the child's knowledge of events and
things around him as compared to other children
his age.

Decisional
Plotted by age
Use teacher-made device or observation

Bill competes with his classmates for naming
the baseball player's names.  He can tell you a
complete television lineup for any evening of the
week.  He knows his way home, the names of
surrounding and neighbors.  His general infor-
mation is about the same as his classmates.

General Information

| 3 | 8 | . |
|---|---|---|
| 2 | 7 | |

That completes all the categories in Profile I.
It forms a rough sketch of how Bill compares to
his age and grade level expectancy.  Also, it
shows that within a child there are growth or
developmental differences.  (Interpretation will
follow the discussion of Profile II).

Profile II - Proficiency Level

The second profile is called the proficiency
profile.  Here, each category is assessed by a
simple level or proficiency rating.  Age and
grade equivalency comparisons assume that some
abilities are developmental and that performance
ability should increase with age or exposure.
This section of the profile assesses those
categories that do not necessarily change

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developmentally. Vision and hearing are either normal or abnormal. Mobility and interpersonal relations are proficiencies that are learned by degrees and that degree is average, above average, or below average. These categories, then, are rated: very superior, above average, average, below average or very defective.

Mobility: Mobility assesses the degree and speed with which a child is capable of moving from place to place. The assessment is made by comparative observations.

Vision: This is primarily assessed informally by the teacher's observations, and secondly, by school screening or those screening devices listed in Section H, Appendix C.

Hearing: Hearing is assessed by informal teacher-made tests or by screening devices such as those listed in Section G. Appendix C.

Interpersonal Relations: This is an assess-ment on the basis of how well a child gets along with others and the manner or way he approaches others. It is assessed informally by observation or social screening devices such as those listed in Section F, Appendix C.

Bill on the Proficiency Level: From the age and grade equivalency profile, we remember that Bill moves freely about his neighborhood. He has average mobility. The teacher has noted that Bill can sit anywhere in the room and still copy from the board. Apparently he has ade-quate visual acuity. Why then, if his intelli-gence is in the average range, does Bill need to have things repeated so frequently? An assumption is made that his hearing may be below normal.

On interpersonal relations Bill had an average proficiency. Bill's profile is complete. The actual plotting would have taken a teacher just two five-minute sessions. To profile an entire class, it would take about three hours.

Those three hours would establish behavioral baselines that would initiate continual pupil evaluation.

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Intrepretation
of a Profile

The interpretation of a child's profile is more an evaluation of a child's development in relation with his peers. Much of a profile is done by using a teacher's judgment. The results should be viewed accordingly, allowing for judgment error.

## Check the Profile

1. Make sure every component has been plotted.
2. Connect all points on the equivalent profile separately from the connecting points on the equivalent profile separately from the connecting points on the proficiency profile.
3. Put a solid red line straight across the equivalent profile exactly one year above and one year below the child's age point. This denotes the acceptable or average range.

## Evaluate the Points

1. Look first at the total profile.
   Are all the points inside the red lines?
   If so, the child appears to be functioning as you might expect.
   He has few differences in his inter-growth pattern.

   Are there a few points outside the red lines?
   If they are above the red line, abilities are indicated.
   If they are below the red line, developmental lags are indicated.
   If they are both above and below the line, you have profiled a very inconsistent child who will require further investigation or you might have miscalculated.

2. Look next at the points above the average range--the abilities.
   Evaluate these points and check their consistency.
   Does it appear that he has an advanced mental ability and advanced general knowledge?
   Are his language and speech areas similar?
   Does his motor coordination coincide with advance height and/or weight?

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3. Look at the points below the red area.
   These suggest developmental lags that might
   call for further investigation.  Below
   average proficiency should be considered
   as well.

   If there are some questionable results or
   judgment errors, further investigation may
   be necessary:
   Diagnosis (ability or disability testing)
   Re-profiling following further obser-
   vation (continual anecdotal records)
   Program adjustment
   Talk with child and/or parent
   A look at your reason for placing that
   point below average (is this a judgment
   error?)

Look for Patterns Between Below-Average and
Above-Average Performance and Cross-Check
with the Proficiency Chart

Some relationship  between categories may exist.

1. If height and weight are slight, motor
   coordination is often similarly affected.
   If very slight, Proficiency of Mobility
   is often affected.
2. Mental Ability is related to general
   information.  It can affect academic
   performance.  A high mental ability does
   not, however, assume high academic
   performance.
3. Social Maturity is often, but not always
   related:  If the mental ability is signifi-
   cantly below average; if performance
   academically is low; if interpersonal
   relationships are low; if the child has
   difficulty learning or speaking.
4. Low speech and language sometimes affect:
   Interpersonal relations
   Reading and spelling
5. Looking at the proficiency chart, a sensory
   handicap is directly related to intelligence,
   but low intelligence is not inherent to a
   sensory handicap.
   Below average vision could affect areas on
   the equivalent graph, depending on the
   level of intelligence.  Motor coordination
   is particularly affected.
   Below average hearing could affect speech and
   language; degree is dependent on age of onset.

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## Be Cautious

1. Grade equivalency can be confusing.
2. If the child is 8 and in the second grade, expect second grade performance although third grade is the corresponding grade.
3. Relationships of components on the profile tend to pull each other to form a cluster of related proficiencies.
4. Some additional information is often important in making 'an assumption. However, this is what will be described in Prescription as personal information. Information should be gathered selectively. If a child is not performing adequately in motor activities, it may be helpful to know that he was on crutches for two years or first walked when he was five-years old.

## What is the Problem?

1. If the child is within the average red area continue the program but recheck at the first indication of a change.
2. If the child has several areas above the red area, work with these abilities.
3. If the child has several below the red area:
   Look for patterns. Check for consistency and inconsistency,
   Document your information further,
   Make a judgment about the possible problem.
   Check the Kirk profiles for each exceptionality and look for clues,
   Check your list of manifestations,
   Request diagnostic assistance,
   Re-structure your program immediately to teach to his strengths and help remediate developmental lags.
4. If the child is extremely inconsistent:
   Re-profile
   Document your information
   Request diagnostic assistance
5. In all areas:
   Decide what is in your jurisdiction.
   Is this a problem you fully understand?
   If you understand it, do you know how to deal with it?
   Is this a problem that calls for a medical doctor?
   Is this a problem that your principal should deal with?
   Is the educational problem one the special education in the school can treat?

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6.  Make some assumptions ab        .. .iass.  Is
    the class consistent?            the class in-
    consistent?  What ca:            out it?
    A.  If the class is ℓ            normal range:
        Look carefully th:           ℓe year for some
        possible changes.
        Be cautious.  Total consistency is un-
        likely to happen for every ability for
        every child.
    B.  If several students are below or above
        the normal range in the same area:
        Structure your class to meet their needs.
        Check your acceptanℓe of that behavior
        or performance.
    C.  Continue to evaluate your class.  Remem-
        ber that at one time only a few discrep-
        ancies will need further investigation.

The following is an example of interpretation of
a profile.  The information plotted throughout
this section has been used.

Most of Bill's age equivalent profile is slightly
below average.  He is in the third grade doing
some third-grade work.  He is smaller than the
other children and perhaps not developing as
quickly.

One warning sign emerges.  His speech development
is just outside the average range as are his
hearing proficiencies.  Comparing this with
Kirk's Profiles, this type of pattern occurs in
an auditorily handicapped child.  This is an
indication that there may be some hearing loss
or a hearing infection.  The parents should be
consulted and further diagnosis should be made.

The teacher, meanwhile, should adjust her
teaching accordingly, making sure Bill is in a
position to hear all happenings in the classroom.
Note that this information is summarized on an
Assumption Sheet, Figure 1.11.  The sheet is
used to outline what factors should be consid-
ered when evaluating a profile.

_____

When to          A screening profile is the first step in re-
Profile          cognizing an instructional or behavioral diffi-
                 culty.  To be a valuable tool, this method
                 should be used for each child in the class at the
                 beginning of the school year.  Plotting most of
                 the class would take perhaps two five-minute

Assumption Sheet

case # Bill          Grade: 3rd    Age: 8    Corresponding - yes

1.    Areas above the average range

      nothing above average range

2.    Areas below the average range:

           speech development and hearing

3     Patterns or clustered areas that -

      a.   pull together above average,

           none

      b.   pull together below average

               hearing loss could affect muffled speech

4.    Assumptions

      Hearing appears to be defficient

5.    Decision (next course of action)

      a.   Parents should be consulted and asked to have his hearing checked.

      b.   Immediate classroom adjustment needs to be made, so that Bill can
           hear class proceedings.

Figure 1.11 Assumption Sheet

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sessions for each child. If there are excep-
tional children in the class, their profiling
will probably be somewhat more time consuming.
When completed the screening becomes the first
stage of a more thorough assessment.

The first profile is used as a baseline from
which to make comparisons. The profiling sho
be repeated at the beginning, middle, and end of
the year. This provides class grouping infor-
mation and a comparative summary of a child's
and a class' progress, as well as establishing
criteria for ongoing evaluation.

IDENTIFICATION: Summary

As was mentioned at the start of this chapter,
screening is only the first step toward an
appropriate intervention for a child who is
having difficulty in school. Screening allows
the regular classroom teacher to efficiently
locate children in the class who may need
special help. The next step in the process is
to determine more precisely the specific areas
of the child's weaknesses. This is done through
diagnosis--the subject of the next chapter.

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Chapter Two

DIAGNOSIS

Diagnosis of a child should lead to correction or prevention of a problem. The diagnosis must be in terms that are meaningful to the teacher if it is to be useful in helping correct the problem. If it is presented in obscure terms, neither the teacher nor the child will benefit.

An in-depth diagnostic examination follows identification of children with possible learning problems. Before any prescriptive statement can be made, a clear picture of the child's strengths, deficits, and special characteristics needs to be developed. In order to have any value, the diagnosis must go beyond a learning label for the child. It must offer statements which attempt to define the child's situation so that a positive direction can be taken toward remediation of his problems.

This section of the manual explores some techniques available for developing a useful diagnostic statement. It is not the intent here to develop the ability of the user to practice clinical or projective interpretation of learning problems or to use diagnosis as a basis for categorization or classification of handicapped children. The practicality of the approach is intended to provide an organizational and planning format for the accurate and systematic use of diagnostic information as a teaching base for remedial and corrective instruction. The following four sections are included in this chapter:

## Methods in Diagnosis

This includes an overview of formal and informal testing procedures. Some of these have been considered more traditional and others more contemporary and perhaps more relevant to the educational needs of today.

## Total Assessment

This section compares d contrasts the techniques of informal and formal testing procedures, strategies for formulating and using informal tools and for administering formal instruments. Issues

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concerning personal data which may be gathered
about a particular child are also discussed.

## Task Analysis

Task Analysis is a valuable tool which can be
employed in diagnosis and which moves directly
to prescription.  In this section, task analysis
is defined and procedures for formulation and
use of task analysis are described.  Once the
initial analysis has been completed, task anal-
ysis may be used to find the child's level of
functioning (diagnosis) or to place him on a
certain step in the hierarchy to begin instruc-
tion (prescription).

## Diagnostic Teaching

This section offers an approach to diagnosis
which investigates variables in instructional
task presentation and response dialogue.  Through
experimentation, a learning environment descrip-
tion evolves that appears to be effective for a
specific task and for a specific child.

## DIAGNOSIS:  Methods in Diagnosis

The diagnostic portrait of a child may be pulled
together in a variety of ways.  Through formal
and informal examination, academic and social
factors are studied.  Information about the
child's personal history may also clarify certain
aspects of the child's behavior.  The diagnos-
tician's background and point of view, to a
certain extent, will influence the type of in-
formation gathered.  The thrust of the diagnostic
statement will depend on what type of information
was gathered and how it was interpreted.

The information on the following pages briefly
outlines several different methods for diagnosis.
Some of these are considered traditional, while
others are more contemporary with the educational
needs of today.  Both types are included to give
the reader a perspective on the historical devel-
opment of diagnostic techniques.

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**Traditional Methods**

## Medical

The original contribution of medicine to the diagnosis of handicapped public school children has become increasingly less relevant to the adjustment of instructional approaches and educational decisions concerning handicapped children. A medical diagnosis can identify causative factors and provide a physiological etiology for the educational difficulties of children, and, therefore, may express the disorder as "minimal brain dysfunction," "central nervous system disorder," "biochemical irregularity," etc. The potential for translating such descriptive symptom clusters into an instructional baseline to adjust learning tasks for the handicapped child is remote.

## Psycholinguistic Assessment

With the difficulty in relating educational tasks to medical diagnoses, the assignment of psychological learning processes as observable characteristics to the consequences of medical disorders seemed to generate more educationally relevant diagnostic descriptions. If the neurological dysfunction(s) of the problem child could be expressed as manifest psychological behaviors, including memory, conceptualization, and associative behaviors, design for remediation of these disorders became educationally more feasible. The clinical diagnosis of learning interference, therefore, included "soft signs" that could be observed by the educator. These were expressed in terms such as hyperactivity, impulsivity, poor attention span, frequent temper tantrums, poor memory, poor discrimination ability. With the growing use of psycholinguistic learning processes, diagnostic instruments were developed to measure these processes. Although useful as diagnostic information, one is not encouraged to employ a psycholinguistic test battery exclusively, as the resulting data alone do not clearly establish an effective teaching base. Familiar test instruments designed for use in this diagnostic methodology include the Illinois Test of Psycholinguistic Abilities (ITPA), Frostig Developmental Test of Visual Perception, Wepman

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Test of Auditory Discrimination, Test of Auditory
Perception, Detroit Test of Learning Aptitude,
Bender Visual-Motor Gestalt Test.

## Conventional Diagnostic Batteries

Of the most frequently practiced traditional
diagnostic models, the diagnostic "test battery"
appears to be the public school preference for
"special child" evaluation.

Such batteries typically include the measurement
of aptitude or intelligence, a relative achieve-
ment description in the basic subject academic
areas, a skill analysis in a single academic
area (regular Reading-Word Recognition), and the
assessment of psychological learning processes
(discussed in psycholinguistics).

Although the use of a well-selected test battery
can provide useful information for a remedial
teaching base, the traditional way such informa-
tion has been used is limiting in that:

1. Newly-presented and differently-administered
   task items may not represent the child's
   natural work setting for problem resolution.
2. The interrelationship of several items of
   formal diagnostic data which represent
   several different measures of the same child
   is often unclear.
3. Other than to direct remedial planning toward
   broad categorical academic areas, it is dif-
   ficult to refine this data to clear and con-
   cise instructional methods.

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**Contemporary
Methods**

## Diagnostic-Teaching

This approach employs a minimum of standardized,
diagnostic testing information.  The child is
observed in a variety of instructional situations,
including most academic areas, with both indi-
vidual independent study work and group participa-
tion.

Failure and stress are noted with certain
materials and motivated success experiences
noted using others.  The teacher may vary the
mode of presentation, the response expectation
of the child, the speed and timing of the

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activity and task level from complex to more
simplified materials.

It is expected that the diagnostic "interaction"
with the child allows for more useful information
regarding the child's learning styles, instruc-
tional levels in various areas, child's presenta-
tion changes, and a greater number of alternative
teaching strategies.

## Program Analysis

This diagnostic method eliminates the use of
standardized test information entirely.  The
child is exposed, informally, to a sample of
selected task items from both academic and devel-
opmental areas, including mathematics, reading,
language, motor, and perceptual.

The child is ultimately "task-sampled" in several
areas to determine the general performance level
in each given area.  The child's developmental
level is observed in terms of program and sequence.
General support and instructional practice is
established for programming to his performance
level.

## Task Analysis

Although this format is quite similar to program
analysis, task-analysis procedures are based upon
general problem-solving models as opposed to
problem-level models discussed in program analy-
sis.

## Task Process Analysis

The task-process analytic procedures will be dis-
cussed briefly to present a final suggestion for
contemporary diagnostic methods.

In task analysis, mentioned above, emphasis is
on the task.  In task-process analysis, the
process involved in learning the task is also
considered.  For example, if a child must remem-
ber the sound "a," as in cat, that is the task.
The process involved is memory.

In order to provide the most relevant information
possible, the contemporary methods of diagnosis
will be discussed more fully throughout this

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chapter.  The ultimate goal of any method should
be a total assessment of the child identified as
potentially handicapped.  The concept of total
assessment is treated in the following section.


DIAGNOSIS:  Total Assessment

All activities that contribute information or
data to the teacher's knowledge of the child,
his problems and his strengths and abilities
constitute the total process.  This information
is synthesized and used to formulate an assess-
ment and appropriate instructional intervention
for a particular child.  The aims of a total
assessment include·

1.  Identifying children who are likely to have
    trouble in school;
2.  Referring children for medical or psychiat-
    ric attention when needed;
3.  Isolating specific areas of difficulty; and
4.  Probing in depth the parameters of these
    problems.

Often this assessment is completed solely for
the purpose of labeling, placing or referring
youngsters who are failing' in school.  When
used in this way assessment does not accomplish
an educationally relevant goal.  Instructional
value for the teacher is extremely limited.  Care
must be taken by the diagnostician to translate
data into a workable form rather than dealing
exclusively in scores, I.Q., numbers, etc.  The
teacher, too, should be alert to the possibility
that she may receive information about a child
which may need interpretation in order to be
useful.  Although she is not expected to serve
a testing function, she should familiarize her-
self with the goals and information to be gained
from formal and informal testing.  With this
knowledge, she will be able to discuss findings
with psychologists and others who provide data
and will be able to ask more relevant questions
concerning use of this information.

A total assessment may include the following
types of information:

1.  Formal test data
2.  Informal test data

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3. Input from the classroom teacher
4. Relevant personal and family data on the child
5. Results of task analysis

_____

**Comparison of Formal and Informal Test Procedures**

Before formal testing and informal assessment are discussed as separate techniques, a comparison of the two may be valuable. This discussion focuses on the comparative aspects of formal testing versus informal assessment in the area of educational diagnosis.

At times various workers in the field of diagnosis and programming--such as school psychologists, resource teachers, speech and hearing specialists, remedial reading teachers and so forth--may have to decide whether or not to call for a complete, formal test battery for a child. Such workers may decide in favor of an informal assessment. They may find that they lack time and, therefore, cannot complete a formal test battery; or they may feel that an informal assessment will provide the necessary information; or they may lack the formal testing skills necessary to conduct a formal diagnosis.

To more clearly distinguish between formal testing and informal assessment, a few examples may be helpful. A Wechsler Intelligence Scale would be a part of a formal assessment; a nonstandardized teacher-made test containing general information questions would be a part of an informal assessment. A Bender Visual Motor Gestalt Test administered by a school psychologist would be a part of a formal testing; a teacher sitting down with a child and simply asking him to copy some forms that she has cut out of a magazine would be part of an informal assessment. An Illinois Test of Psycholinguistic Abilities would be part of a formal testing; simply discussing various pictures with a child in a nonstandardized manner would be a language sample as part of an informal assessment.

Formal testing and informal assessments have some important characteristics. A formal test instrument is administered in a standardized way according to a set of instructions usually contained in a manual. Administration must not vary

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from those instructions. In an informal setting, procedures or items can be administered in many ways and usually the manner of presentation is at the discretion of t    dministrator.

Also, in formal testing the scoring procedures are standardized or as objective as possible; that is to say, each test is scored the same way regardless of the child's individual character-istics. In informal assessment procedures the information may not be interpreted in the same way for each child. The reliability of the test instruments used is not known and assessment accuracy depends to a great extent upon the clin-ical skills of the administrator; in formal test-ing, however, standardized procedures are fol-lowed accurately. Validity and reliability are more certain.

Validity refers to (1) the degree to which the test measures what it is supposed to measure and (2) the degree to which the test is predictive of those performances being tested. Reliability refers to the degree to which the test results will remain stable over a number of administra-tions.

Currently t    e are sets of test instruments characteriz    by their publishers as "criterion referenced tests." The major difference between a criterion referenced test and a standardized test is that the criterion referenced test depends entirely upon the accuracy of the tasks within the test for its predictive validity. The usefulness of the criterion referenced instru-ment depends upon the wisdom and skill with which the various test items are se'    ted. If a criterion referenced instrument d    not con-tain those items that represent tasks the admin-istrator is interested in, then of course, the test instrument is useless. Within a criterion referenced instrument if a child passes specified test tasks, he is then said to have the skills those tasks refer to and can move on to the next steps in the instructional process.

A standardized test instrument, on the other hand, has been administered to what is called a "norma-tive reference" population. The test has been administered to a sample of people selected to

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represent a universe of possible people to whom
the test might be administered.  For example, the
Wechsler Intelligence Scale for Children was
standardized with a normative group.  This norm-
ative group is hopefully representative of groups
of children in most public school settings.  It
is therefore important to study the characteris-
tics of the sample population upon which the
test was standardized.  If it is felt that the
child is represented in the normative population,
it may be advantageous to administer that stan-
dardized test.

Mean and standard deviation for a standardized
test can be calculated; with the criterion
referenced test this information is not avail-
able.  Also with the standardized test, stan-
dardized directions and scoring procedures are
provided; a criterion reference test may or may
not adhere to standardized instructions and
scoring procedures.

Some educational diagnosticians and programmers
might select an informal assessment procedure
rather than a formal one because of time.  Where
time pressures are taken into consideration, it
should be noted that follow-up procedures to
observe the accuracy of the recommendations
based on informal procedures are definitely
important.  The same, of course, is true of
decisions based on the results of formal tests.

Either method, informal or formal, is acceptable
provided that the decisions based on such assess-
ments are carefully checked out and followed-up
either through systematic observation procedures
or post-test results.

Figure 2.1 further illustrates some of the simi-
larities and differences between formal testing
and informal assessment.

| | |
|---|---|
| Informal or Criterion-Referenced Tests | Informal testing techniques can be extremely useful in educational diagnoses.  A great advan-tage is that this type of assessment can be carried out by the classroom teacher in the educational setting the child is used to.  This increases the probability that the child will perform in a typical way.  Also, any area of |

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# DIAGNOSIS

| FORMAL TESTING | | INFORMAL ASSESSMENT |
|---|---|---|

Administration of a test, or several tests.

Interpretation of what the test(s) mean, for the learner.

| TYPES | | IDEAS |
|---|---|---|

Ability ——————————→ Aptitude to perform school tasks.

Academic Achievement ——————————→ Performing in general school tasks.

Academic Survey ——————————→ Performing in specific school tasks.

Learning Operations ——————————→ Learning processes important to all school tasks.

| SCORES | | PLANS |
|---|---|---|

Fig. 2.1  Some Differences in Formal Testing and Informal Assessment Procedures

IQ
Grade Level
Mental Age

Strength - Weakness
Proficiency - Deficiency

| OBJECTIVES |
|---|

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educational skill can be probed with informal
testing as the tasks can be arranged to match
the needs of the teacher. The goal of informal
assessment is to locate specific areas of
strength and weakness. If formal instruments
have been used, informal testing can expand,
verify, and, if necessary, discard conclusions
and recommendations of formal assessment.

Informal techniques are generally based upon
criterion-referenced analysis. This type of
analysis compares the child's strengths and
deficits with "normal" development, not by com-
paring his performance directly to others. The
diagnostic value of informal techniques lies in
the fact that the teacher can pinpoint actual
skill deficits and plan remediations based on
these deficits.

Informal tests should be used when:

1.   An authorized administrator of formal tools
     is not available for assistance.
2.   Results of formal testing are too global in
     nature to serve as a prescriptive base.
3.   The diagnostician is concerned with a sample
     or estimate of the child's level within a
     specific skill sequence of "set."
4.   Formal tests are either unavailable or do
     not assess the problem area of concern.

Formulating Informal Assessment Tools

A testing situation need not always be estab-
lished in using informal instruments. Observa-
tion of a child as he works on a class assign-
ment, determination of error patterns on a daily
worksheet, listening to a child read in a group
and noting errors, etc., can all offer valuable
diagnostic information. If deficits are noted,
perhaps more in-depth study should be undertaken.
The following suggestions are meant to give
direction to diagnosis if more specific informa-
tion is desired.

Development of an Informal Inventory

1.   Skills to be assessed should be sequenced or
     ordered so that performance on each skill is
     dependent on success with the previous task.
2.   Select tasks that will sample the skills.

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3. Decide what type of response is most appropriate (oral, written, motor, etc.).
4. Select a criterion of acceptable performance.
5. Present the tasks to the student in order of difficulty.
6. Devise a system for recording information.
7. Note error patterns and gaps in skills.
8. Note the lowest level of difficulty the child encounters.
9. Note relevant observations such as the child's approach to the task, rate of speed at which he works, attention span, etc.

To illustrate the steps in informal diagnosis, the following example included.

A second-grade teacher plans to assess the skills of her students in the subject area of mathematics. She does not have a formal instrument which will provide adequate information about these skills so she wants to develop an informal tool. First, she must decide what skills she feels a second grader should have to be functioning adequately. One sequence may be:

1. Adding two single numbers to total less than ten.
2. Adding two single numbers to total more than ten.
3. Adding two double-digit numbers which involves no carrying.
4. Adding two double-digit numbers and carrying to one place.

Having decided upon this sequence, she makes a work-sheet which looks like this:

| 4 | 3 | 6 | | 8 | 7 | 5 |
|---|---|---|---|---|---|---|
| +2 | +1 | +3 | | +2 | +7 | +8 |

| 22 | 16 | 32 | | 27 | 32 | 46 |
|---|---|---|---|---|---|---|
| +34 | +13 | +45 | | +14 | +28 | +29 |

She has three samples of each task. Two correct out of each three will denote mastery. She makes a form with each child's name at the top and calls one child at a time to do the worksheet (if time does not permit one-to-one administration,

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this particular example could be given to groups).
Individual testing, however allows the teacher
to observe unique methods the child uses and
particular areas of frustration.  The teacher
notes on the form which skills are mastered and
the areas in which the child experiences dif-
ficulty; particular aspects about the way the
child does each task (counts on fingers, works
very slowly, etc.) are noted.  This information
is placed with other diagnostic data on each
child in preparation for writing the prescription.

Exceptional or handicapped children often act on
a task sequence in an unexpected order, so that
despite success with terminal tasks, mastery or
utilization of prior tasks may be inadequate.
The child may be able to perform tasks A B C &
D, lack skills E F & G but be able to complete
the terminal task H.  It is important to note
gaps in task sequence and develop these as well
as planning for further terminal objectives.

In developing informal assessments, the follow-
ing can provide a basis for skills to be tested:

1.  Scope and sequence of skills areas;
2.  Prescribed guidelines from school district;
3.  Task analysis of a particular skill;
4.  Motor skills necessary for adequate function-
    ing;
5.  Growth and developmental sequence; and
6.  Criterion-referenced skills.

Formal diagnostic instruments may be used as a
model for developing informal techniques.  A
teacher should familiarize herself with some of
these and adapt them to her own needs.

Example of adapting formal instruments:

1.  Paragraph reading tests may be assimilated
    by selecting paragraphs from published read-
    ing materials or teacher-prepared paragraphs
    emphasizing certain skills  These paragraphs
    may be presented in a manner similar to
    standardized presentations.  Error patterns
    can be noted and a criterion (5 errors per
    hundred words) can be selected to determine
    the level at which instruction should begin.

7 1

2. Specific vocabulary words may be presented to a child and error patterns (short a, beginning consonants, etc.) can be noted.
3. Handwriting samples may be analyzed to locate specific needs for improvement of letter formation.

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Formal Tests

Standardized tests may be useful for indicating a child's specific areas of deficit and strength. These instruments can offer a direction for further assessment and, if interpreted carefully, can be valuable tools in developing an instructional program. Formal tests may be used when the teacher needs to:

1. Eliminate or confirm the possibility of mental deficiency;
2. Point out general areas and levels of failure in such subjects as reading, spelling and arithmetic;
3. Indicate possible areas of language deficit;
4. Demonstrate modality strengths and weaknesses;
5. Identify patterns of disruptive and undesirable behavior;
6. Offer direction for further testing;
7. Recommend areas for diagnostic teaching; and
8. Suggest areas where feedback from the teacher will be needed.

Some drawbacks to consider in using formal tests should be mentioned. These cautions are not meant to discourage the use of formal testing tools, but rather to encourage their proper and realistic use.

1. The test may demonstrate the obvious: a child may be referred because he has difficulty sitting and attending in clas. Formal testing may only point out that he is hyperactive--a diagnosis the teacher could have made herself.
2. The test may stress etiological factors. Some tests attempt to determine the cause of a problem rather than suggest educational solutions for that problem.
3. The test may dwell at length on the interpretation of minimal evidence. An attempt may be made to read too much into the data and observations of the tester.

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4. Stress may be placed on numbers and scores rather than on the educational relevance of those scores. Information is often too generalized to be useful in educational planning.
5. Intra-subject variability plays a part and children may vary in their day-to-day performance. A test may represent a child's typical performance or a higher- or lower-than-average performance.
6. The testing situation tends to be artificial. Testing is often done outside the classroom by a person with whom the child may not be comfortable. This may affect his performance.
7. Each score for a child cannot be interpreted as an absolute value. It must be viewed as an estimate of the child's performance in a particular test area.
8. Interpretation of scores for children who differ from the population on which the test was standardized may be difficult. For example, children with severe behavior problems may not perform in the same way that "normal" children would. Their subtest scores, then, would not reflect accurately their abilities.

In order to utilize formal diagnostic data prescriptively, it is helpful to organize the available instruments according to the types of information to be gained. Figure 2.2 offers a sample classification of some of the available formal instruments.

A brief description of the four classifications of formal tests in Figure 2.2 may be helpful.

Ability/Capacity Information

Instruments which assess aptitude, capacity, or ability, offer a measure of the child's intelligence, mental age or other ability level in comparison with other children. If this global assessment is used in isolation, its diagnostic value is limited. However, when combined with further information such as observations during testing, item analysis and intra-test comparisons, some specific patterns can be analyzed.

An I.Q. score alone does not offer a basis for

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| Ability Capacity | Achievement | Academic Survey | Learning Operations |
|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ |
| Slosson Intelligence Test | Metropolitan | Stanford-Reading | Frostig |
| Stanford- Binet | Stanford-Binet | Stanford-Math | DTLA |
| WISC | WRAT | Gates-McKillop | ITPA |
| Group IQ Testing | Iowa Basic Skills | Gates-MacGinitie | Slingerland |
|  |  | Durrell | Kendall |
|  |  | Key-Math | Benton |

↓    Relative Data

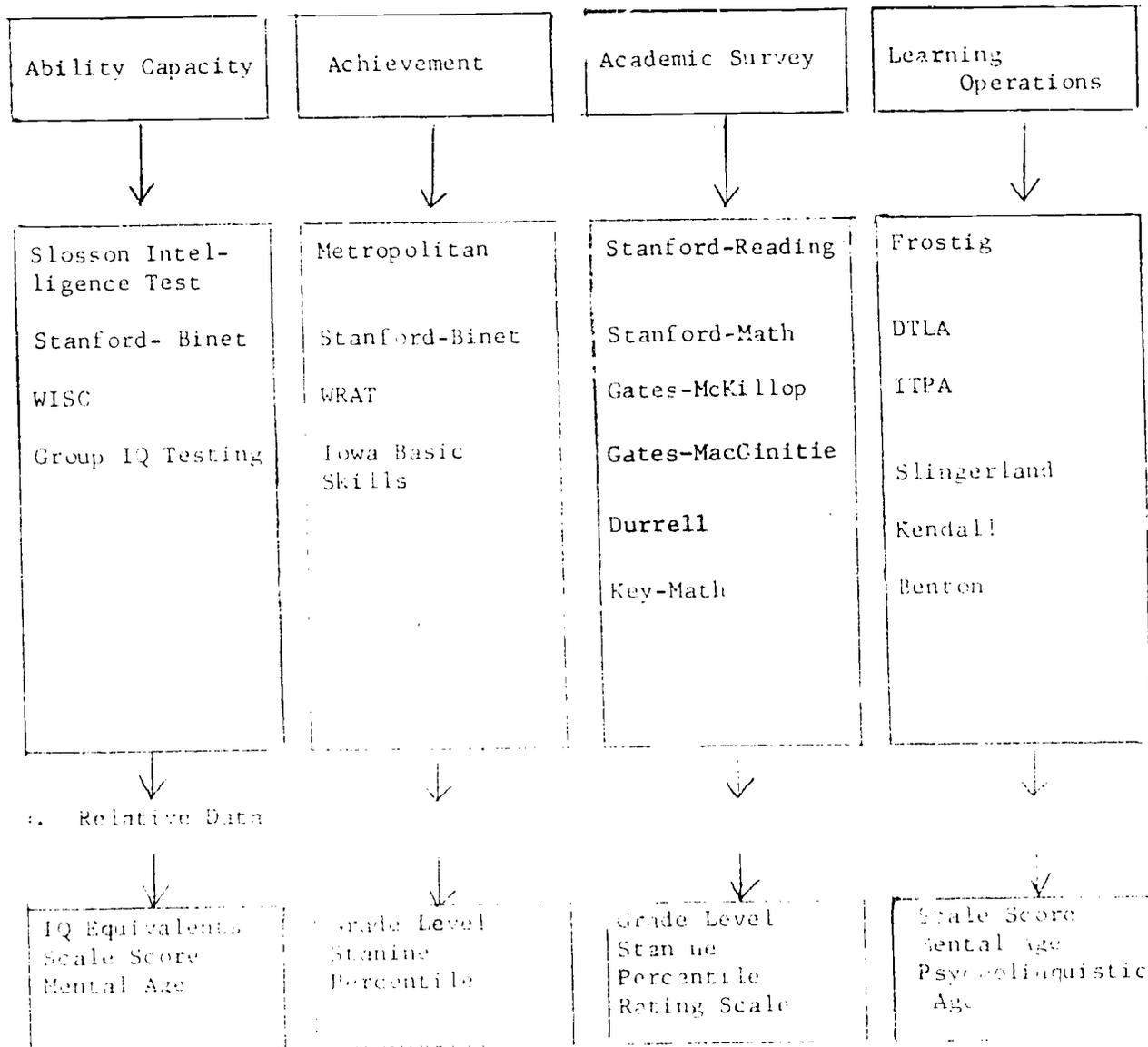| ↓ | ↓ | ↓ | ↓ |
|---|---|---|---|
| IQ Equivalents<br>Scale Score<br>Mental Age | Grade Level<br>Stanine<br>Percentile | Grade Level<br>Stanine<br>Percentile<br>Rating Scale | Scale Score<br>Mental Age<br>Psycholinquistic Age |

Figure 3.2 Sample Classification and
Production of Some Formal Tests

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an individualized teaching approach. Even in
categorizations of students into such classes
as "slow-learner" and "mentally retarded," an
I.Q. score of 75 does not determine whether the
problem is, in fact, mental retardation, emotional
interference, cultural deprivation or specific
learning disability.

## Achievement Information

Another classification of formal testing includes
a wide variety of measures which yield a grade
level or standard scores in reading, mathematics
and spelling.  These tests offer a more well-
defined picture of where the child is actually
functioning and what remedial work needs to
be provided.  They do not, however, denote a
specific plan of action for teaching a particular
child.  Two deficient pupils with similar read-
ing achievement levels may require very dif-
ferent instructional strategies for remediation.
These tests are valuable as screening instruments
to pinpoint areas for further testing.

## Academic Survey Information

This type of data lends itself to more specific
diagnostic-prescriptive information.  Sub-areas
of deficit or strength can be pinpointed and
remediations can be adjusted to fit the areas
of concern.

## Learning Operations Information

Assessment measures designed to describe learning
process areas generally include measures in the
following areas:

1.  Attention
2.  Identification
3.  Discrimination
4.  Association
5.  Memory
6.  Sequencing
7.  Responding

These tests allow for the greatest specification
of diagnostic information.  They attempt to de-
fine how a child learns best and what his weak-
nesses are in the learning processes.

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Many excellent formal tests are available for use in clinical and classroom settings. The tests described in Appendix D represent a small sampling of the types of tests which may provide useful information. They were selected because they are often available and have been widely used in school settings.

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Personal
Information

Data gathered from informal assessment, formal testing, or both, may not be sufficient to provide all the information the teacher feels is necessary. When this is the case, relevant personal information may be acquired and added to the diagnostic package and used in preparing prescriptions. Such information (family history, home environment, etc.) is sufficiently personal that it should be regarded as confidential or classified information.

There is a growing trend toward protection of privacy and individual rights which adds greater emphasis to the need for confidentiality in dealing with information about students. This increasing emphasis provides the necessary safeguards from unauthorized use of personal information. New federal statutes (including the Buckley Amendment*) clarify specific privacy and individual rights; strict adherence to these requirements is mandatory and must be considered in data collection. In this section, guidelines are presented dealing with the following questions: When is there a real need to gather and use classified information? What information should be classified? Who should have access to it? How long and in what form should this information be retained?

There are limitless amounts of information that could be gathered on a particular child. Special team staff members often make detailed reports concerning many aspects of the child's private life. Before any information is collected, the question should be asked, "Is this information necessary to develop or improve a program for the child?" In order to protect the child's

*Public Law 93-380, subparagraph (d) (4), Section 438, effective 11-19-74.

rights, only necessary information should be
gathered. Also, if irrelevant data are included,
record keeping becomes overly time consuming and
interpretation becomes a task of sorting, rather
than one of using information. Next, one should
ask, "Should this information be classified?"
If so, decisions as to who will need the informa-
tion and who may have access are made. Some
information which has been collected and used on
a local school level will merit preservation on
a long-term basis. Other information has only
temporary value (daily assignments, for instance).
Those persons who have collected data must decide
before writing on any record, how much relevance
for the future the information holds. Informa-
tion about a child should not be collected unless
one of the following justifications applies:

1.  Physical problems

    A physical problem which interferes with the
    child's school life should be brought to the
    awareness of those dealing with that child.
    There may be reasons the child cannot par-
    ticipate in athletic activities, for example.
    Or. hearing of vision loss may alter his
    needs. He may have a bowel or bladder prob-
    lem which causes offensive odor, and the
    teacher who is alert to the problem may be
    able to ease social embarrassment for the
    child.

2.  Programming

    Factors which may hinder programming for a
    child, such as excessive absence or severe
    deficits in learning potential, may need to
    be determined and noted. Also, if parents
    are to become actively involved with the
    child's schoolwork, the teacher will need to
    know how much time the parents can spend
    with the child and whether the parent-child
    relationship is such that interaction on
    school work will be profitable. Such facts
    as parent's income, schooling, etc., are not
    relevant.

3.  Information which parents feel is relevant

    There are many factors which the parent may
    feel should be noted by those working with

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the child. If religious persuasion prevents participation in certain activities, the parent may call this to the attention of the teacher. It is not necessary for the teacher to actively seek information of this nature but to note its relevance when the parent initiates the information. Others--such as clergymen, other teachers, and other parents --may volunteer information about a child. Such information should be carefully weighed and checked for accuracy and relevance before it is processed for further use.

4.  Other information

    Depending upon the presenting problem of the referred child (for instance, behavioral problems, poor language development, motor difficulties. etc.) other types of information may be needed. If neurological impairment is suspected in a child, some information about unusual prenatal history, accidents, or diseases after birth may be justified. Information about the family unit, if needed, may be gathered through a family conference or interview. For example, if a behavior problem is involved, it may be necessary to determine whether or not that behavior is exhibited at home or in other environments. If the interviewer plans to share any of the information collected from the family, a release of information form appropriate to the school or district must be signed by the parents.

In many cases, several persons in the school will be assigned to gather information on a child. A practical approach is to divide the work, holding each staff member responsible for types of information relevant to his or her dealings with the child. For example, the principal may gather relevant data from previous school records. The classroom teacher may determine academic status and learning skills. A psychologist may administer psychological and personality tests and interpret their scores. The social worker visits the home and notes relevant details about the home environment. The speech therapist checks speech development and possibly tests for hearing problems. A school nurse may need to have

information on the child's physical history,
immunization record, etc.

With this type of division of responsibility,
information can be gathered more quickly and
with less overlap.  It should be emphasized here
that if families must be approached for informa-
tion, the contact should be made by one staff
member only and it should be as brief as pos-
sible.  The parents should be told exactly what
the information is to be used for and asked to
sign a form releasing any information that is to
be shared.

Some of the information gathered by those men-
tioned above may be general enough not to be
kept confidential.  Most of it, however, will
need to be handled with a great deal of discre-
tion.  Many legal guidelines are being formulated
about what can and cannot be placed in cumulative
folders and who should have access to such fol-
ders.  Before placing information in a folder,
the legal implications in the district or state
concerned should be studied.

On a more basic level, persons who have gathered
information about a child need to decide for
themselves what constitutes classified informa-
tion.  It may or may not be going into a cumula-
ti e folder, but is it to be made available as
common knowledge?  In making this decision, the
person needs to consider aspects of trust,
relevancy of material and potential use or
misuse of the information.

Here again, many legal decisions have been made
and these vary from state to state.  Availability
of cumulative folders depends to a great extent
on local laws.  When determining whether or not
to make available personal information about a
child, consider which data the parents have
released through a signed statement, find the
most recent information on loc.. . state, and
federal statutes relating to confidentiality,
and use good, ethical judgment.

Some basic guidelines for releasing information
follow.  These are only suggested parameters,
and each case should be considered separately.

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1. If a person is actively involved ith the child, such as a member of a sp al education team working with the chila, that person will need some information about the child. Noninvolved people, such as parents other than the child's own, other teachers, children in the classroom, etc., however, should not have access to information about the child.
2. Only information for which a need can be clearly demonstrated should be provided to those working with the child. If certain information will aid that person in more effectively dealing with a child, then relating that information is probably justified. Keep in mind that too much information presented may cloud pertinent issues and be unnecessarily time consuming.
3. Different people dealing with the child will need different types of information. The nurse has gathered immunization information which is needed to carry out the health program. Similarly, the psychologist, to evaluate psychological adjustment, gathers I.Q. scores and psychological evaluations. They are relevant to the psychologist. But before giving any information to the classroom teacher, both the nurse and the psychologist should process and sort their information so it will have instructional value for that teacher rather than being a comprehensive report which may not apply to classroom needs.

The school evaluation team, or other appropriate personnel, should develop and agree upon a heirarchy for confidentiality. This should include examples of information which are available to anyone upon request, information not to be released unless it is to be used by education personnel in official duties, and data to be made available only upon order of a court or agency with subpoena power.

Permanent records can aid a child's future placement or they can damage him severely. Irrelevant, inaccurate, or biased information must be weeded out before records are written. Also, information should be excluded which will not be used later. It is the duty of the person who has

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accumulated any information to decide whether
it should be preserved or whether its period of
usefulness has passed.

## DIAGNOSIS: Task Analysis

### Definition

In task analysis, a task to be diagnosed or
taught is analyzed and broken down into compo-
nents. These components are arranged in a
hierarchy from least difficult to most difficult
and/or are placed in sequence from the first
step to the last step in completion of the task.
This progression, then is task analysis. It is
a complement to the behavioral objective. (See
Chapter 3, Prescription, p.106, for a definition
of a behavioral objective.)

### Purpose

The task analysis serves several purposes:

1. It is a device for carrying out ongoing
   diagnosis and evaluation as the child is
   instructed. The steps mastered can be
   checked off and progress can be noted.
2. It is an instructional tool. If it is care-
   fully constructed, the instructor will be
   able to teach directly from the task analy-
   sis.
3. It is an evaluative instrument. By deter-
   mining what skills the child already has
   and the number of steps he can complete in
   the analyzed task, his level of functioning
   on that skill can be determined.
4. Once a task analysis for a particular skill
   is completed, one can use that analysis as
   a reference for future students with similar
   problems.
5. By completing a task analysis, one becomes
   aware of the scope and sequence of a skill
   he is attempting to teach. The basic skills
   which a child must master in order to per-
   form a particular task are pinpointed.
6. If a program is failing, perhaps the child
   has been presented with a too-difficult task.
   Through task analysis, the instructor can
   reevaluate the child's skills and place him
   on a more appropriate difficulty level.

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## Formulation of Task Analysis

The most practical way to analyze a task is to
work through the task from start to finish,
attending to all physical, visual, and cognitive
skills used, and also attending to each step in
the task.  As this is done, all relevant steps
and skills should be written in a clear and
simple form.  This is not meant to be a long,
drawn-out chore, but rather a useful statement
of what it takes to complete a task.

As an example, consider the task of putting on
and tying your shoes.  Some component parts of
putting on and tying your shoes are:  take hold
of shoe, loosen laces, hold shoe open, put toes
in shoe, put foot in shoe, pull laces tight,
tie shoe laces into bow.

As you read through that, you may have thought
that some parts were left out.  It does not tell
to lace the shoes, nor does it analyze the steps
it takes to actually tie the bow.  It is obvious
that each step given can be sliced into smaller
steps.  A detailed task analysis might be a list
of over 100 steps in putting on a shoe.

The amount of detail needed in a task analysis
will depend on how fast the student can learn
and how much new information he can handle at
one time.  You may not know how fast the student
can learn until you try to teach him the task.
If you find that he cannot move from one step
to the next, you then need to break the task
down into smaller steps.  This is done on the
task analysis worksheet under task sequence modi-
fication. (See pages 78-79.)

In the shoe-tying example, it may be found that
the child can master the first two skills, but
has difficulty holding the shoe open.  Step 3 is
then modified to include holding the tongue for-
ward.  Again, things may go smoothly until step
6; tying shoe laces in a bow.  This step might
be broken down as follows:

1.  Grasp laces
2.  Cross laces
3.  Pull one lace under the other
4.  Pull tight

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5. Make a loop in lace 1
6. Wrap lace 2 around lace 1
7. Push lace 2 under lace 1
8. Pull tight.

When an objective is stated, such as "Lisa will
put on her shoes and tie a bow in the laces
without help within five minutes or less," and
you begin with the simplest part of the task
--holding the shoe, you are assuming that Lisa
knows what a show is, and that she can grasp it.
If she fails the first step, the task must be
further broken down and the earlier or pre-
requisite skills taught.

Cues are an important element of task analysis.
Cues are the directions or instruction given by
the teacher for student response. There must
be cues for the terminal objective and possibly
for each task. Cues should always be consistent
because many handicapped children, particularly
the severely handicapped, need consistency in
order to be able to respond.

The following is an example of different cues
that might come from different people in the
student's environment. The objective is for the
student to name the animal on the picture.

The aide says, "What is that?" The volunteer
says, "What is this?" The teacher says, "Tell
me what is on the picture." The mother says,
"What's this a picture of?"

The same person may also give different cues
for one objective. He may not get a response
to one cue so he goes to another, and then to
still another, never getting a response from any
of the cues. Although the eventual good is to
obtain a response to different cues, it is
initially very difficult for a severely retarded
child to respond correctly to the same objective
with many different cues.

On every task analysis there is the possibility
that there will be a need to give the cue in
simpler words. The appropriate cue may not be
determined until after many trials with the stu-
dent. It is important that the child be given
many opportunities to respond to the same cue

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before it is changed. Also, the child should be given enough time to respond to a cue before it is repeated.

If there is no response to a cue, which appears to be in its simplest form, the cue may need to be accompanied by gestures. If there is no response to physical gestures, demonstration by the teacher will be necessary. Finally, the cue may need to be accompanied by physical manipulation of the student to produce the correct response, or possibly, if the child is to respond verbally, the teacher will recite with the child.

## Use of Task to Find Entry Level

The following example shows how task analysis can be used diagnostically to determine the child's level of functioning on a certain skill. The terminal objective is used to illustrate prerequisite skill and entry level.

Richard, on cue, will count out loud a number of objects up to twenty. He will receive no help and will respond with no more than a one-second hesitation between numbers. When the child is presented with this task, it has been determined in advance that he has the prerequisite skills to learn the task. He can speak out loud, follow directions, etc. We can analyze the task in the following way:

1.  Recognizes objects.
2.  Discriminates separate objects.
3.  Can repeat numerical names in order from one to twenty.
4.  Can place his finger on one object at a time while repeating a numeral name to correspond (first item touched, with child saying, "one").
5.  Can perform the task with one object, two objects, etc. up to 20.

Once the task has been analyzed, the student is tested to see how many of the steps he can perform already. This testing is part of the diagnostic teaching process. If the student cannot perform the first step, a new, lower order terminal objective needs to be written. A new task analysis must be developed for this

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new objective. If the child can perform at least the first step of the higher order objective, the entry level can be determined by testing the student on each task in the hierarchy. The earliest step which the child fails to accomplish is his entry level. The instructional program may begin at this level. From the example above, Richard was tested and it was found he could repeat the numbers from 1-20 but could not place his finger on one object at a time. Instruction began (entry level) with task 4.

## Terminology of Task Analysis

Terminal or Behavioral Objective: This is the end goal or task that the child is to do. It may be tying shoes which is really a terminal task, or it may be reading a list of words, which may be prerequisite for another terminal objective.

Task: This is a specific behavior that the student is to do. Tying shoes could be a task.

Skill Prerequisite: This refers to the skills that are necessary for the completion of a particular task. It usually does not include process prerequisites. A skill prerequisite for oral spelling would be to know the letter names.

Process Prerequisites: These are a group of processes like paying attention, discrimination, remembering, association, and expression.

1.  Input--

    The child received from his environment input or stimulation, through one of the five senses.

2.  Process--

    The child acts upon the information received from the environment. He may associate, remember, discriminate, alter, or do other things with information.

3.  Response--

    The child expresses himself in some way in

regard to the instruction. The response
could be verbal or motorical.

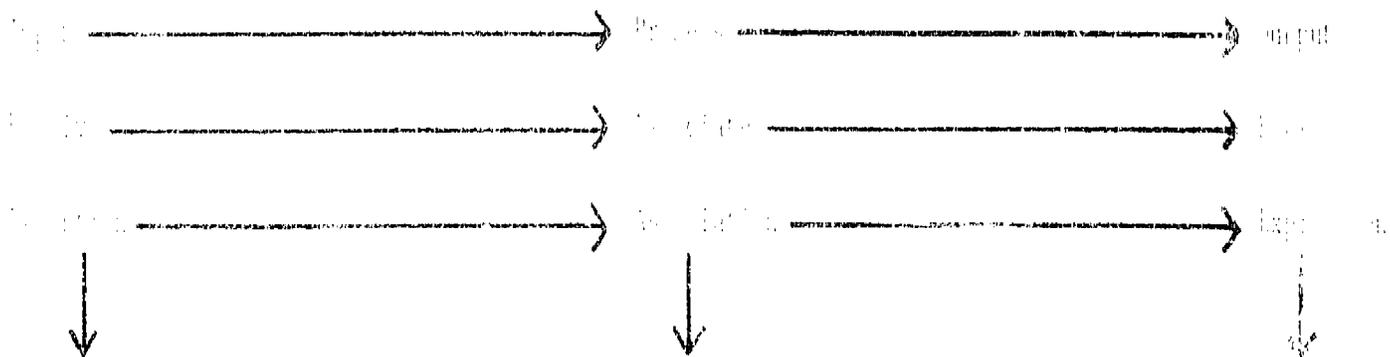(Figure 2.3 illustrates prior percepts basic
to all learning.)

There are six primary processes that are pre-
requisites to completing an objective. These
are generally not included in the statement of
the task analysis, but must be kept in mind when
planning. A child with severe multiple handi-
caps may need to be tested in each of the six
processes. Moderately handicapped children will
probably not have much difficulty with them.

1. The child must pay attention to the cues.
   The cues could be verbal commands that the
   child hears.
2. The child must be able to understand the
   cues, or understand the language of the cues,
   for example, "circle," "letters," "upside
   down," etc.
3. The child must be able to tell the difference
   or discriminate, between things he hears,
   sees, or does. If a child is having dif-
   ficulty at this level, he needs instruction
   in a gross discriminatory training program.
4. The child must remember what he hears, sees,
   or does so that he will be able to respond
   to a stimulus in a predictable manner.
5. A child must be able to respond to cues
   either by speaking or reading.
6. A child must act out his response.

A student who can pay attention, discriminate,
remember, and understand, but cannot respond will
have to level out a response. A possible response
repertoire would be speaking, writing, movement
demonstration, circling, pointing, underlining,
touching, gestures (head nodding), or some other
signal that would indicate a yes or no.

Steps used in performing a task analysis

1. Write a terminal objective. You must
   know what you are going to task analyze. The
   objective is written on the worksheet.
2. Answer the question: What does the student
   have to know before he can meet the objective?
3. The step two is a list of each answer to the

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Figure. Analysis Model

question. This process continues until you
think that you are to a point where the stu-
dent might be successful. You do not know
if the task analysis is appropriate for the
selected student until you try it. It can
be modified under task sequence modification
later.
4. Make sure that all tasks are in sequence.
5. Determine cues.
6. Select materials.
7. Modify task sequence if necessary.

The next several pages contain a task analysis
for two different tasks. The first is a self-
help of putting on shoes, and the second task
analysis is identifying six letters from a visual
stimulus. This also considers some of the
process prerequisite basic to attention and
discrimination discussed earlier.

### Task Analysis Worksheet

Terminal Objective:

Lisa will put on her shoes and tie a bow in the
laces without help and within five minutes or
less.

Cues:

"Put on your shoes and tie the laces."

Task Sequence:

1. Take hold of shoe
2. Loosen laces
3. Hold shoe open
4. Put toes in shoe
5. Put rest of feet in shoe
6. Pull laces tight
7. Tie shoe laces into bow
8.
9.
10.

Task Sequence Modification:

3a. Hold tongue of shoe forward.
5a. Pull tongue up.
7a. Grasp laces.

b. Cross laces.
c. Pull one lace under other and pull tight.
d. Make loop in lace 1.
e. Wrap lace 2 around.
f. Pull loop from lace 2 through itself.

### Task Analysis Worksheet

Terminal Objective:

Eric on cue, will name 6 letters, printed on
card A, B, J, M. D, and V, without help and
within one second or less per letter.

Cues:

"Can you tell me what these letters are?"

Materials:

Card with printed letters A, J, B, M, D, and V.

Task Sequence:

1. Attends to primary language components
   "Tell me," and "letters."
2. Tells difference between primary language
   components mentioned in number 1.
3. Attends to single visual stimulus (one
   graphic symbol).
4. Tells difference between several visual
   stimuli.
5. Remembers verbal equivalent for graphic
   symbols.
6. Changes graphic symbols to verbal equiv-
   alents.
7. Responds by speaking visual equivalent for
   graphic symbols.
8.
9.
10.

Task Sequence Modification:

None

_____

Task Process   An additional element may be added to task analy-
Analysis       sis:  that of determining what processes are
               involved in completing the task.  These processes
               are outlined in Figure 2.4 and are paralleled

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Input ——————————→ Process ——————————→ Output

Receive ——————————→ Associate ——————————→ Express

Reception ——————————→ Association ——————————→ Expression

I Tasks → ①↓            ③↓            ⑤↓

**(Task Analysis)**

1. Listens, pays atten-
   tion to
   a. hear
   b. see
   c. do
2. Tells differences
   between
   a. hear
   b. see
   c. do

1. Remembers things
   a. individually
      1) heard
      2) seen
      3) done
   b. multiply
      1) heard
      2) seen
      3) done
2. Changes things
   a. hears
   b. sees
   c. does

   1) Puts parts into
      a whole
   2) Takes parts out
      of a whole

1. Responds to things
   a. speaks
   b. reads
2. Acts
   a. writes
   b. draws
   c. finger manipu-
      lates
   d. jumps, throws,
      walks

②↓           ④↓           ⑥↓

II Processes

**(Process Analysis)**

1. Discrimination
   a. Auditory
   b. Visual
   c. Motor
2. Attention
   a. Auditory
   b. Visual
   c. Motor

1. Memory
   a. Recall
      1) Auditory
      2) Visual
      3) Motor
   b. Sequential
      1) Heard
      2) Seen
      3) Done
2. Association
   a. Auditory
      1. Closure
      2. Figure-
         ground
   b. Visual
      1. Closure
      2. Figure-
         ground
   c. Motor

1. Expression
   a. Verbal
   b. Motor
      1) Fine
      2) Gross

Figure 3. Task-Process Analysis Model

with the types of tasks with which they corres-
pond. A particular value of this type of pair-
ing that common error patterns in more than
one a may be picked out. For example, if a
child is having difficulty counting in arithmetic
and in sequencing sounds for blending in reading,
a strict task analysis of the two activities
might cause them to be viewed as isolated skills
and to be taught separately. However, when
looked at as two sequential problems, the remedi-
ation for both can be coordinated and developed
for an added push in sequential skills.

As a support procedure for the use of the task-
process analytic method, it is recommended that
adjustments for both content and level of the
terminal task analysis be included.

If, after careful observation, it is difficult
to specify the failure subtask which is failed
of the terminal task or a suspected failure
subtask has been identified, the diagnostician
shall accordingly:

1. Determine one or more failure subtasks.
2. Verify one or more suspected failure sub-
   tasks through adjustment of the required
   task by content or level modification.

   Modifying by Content: All terminal tasks
(and their consequent subtasks) contain iden-
tified content-types which represent a certain
datum for the child's manipulation.

If a child fails an outcome or terminal task, it
should not suggest failure with all related sub-
tasks; neither does it suggest failure with the
provided content type in all related subtasks.
A child who fails a specified subtask which
employes nonphonetic work as its content type
may succeed, with phonetic word constructions,
in the same subtask item. This change, from
nonphonetic to phonetic is content modification.

   Teacher Report: Johnny proceeds aimlessly
and with confusion through two visual worksheet
tasks requiring the discrimination of "largest"
geometric forms. His responses with some items
are accurate, with most others, he incorrectly
identifies medium-size and smallest items.

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Teacher Conclusion: Size-conservation/
spatial concepts are deficient; requires train-
ing with kinesthetic materials.

Observation: Johnny is capable of succeed-
ing with the two prior visual worksheets, and
several others which also include rotations and
transpositions of the shapes, when required to
discriminate the "biggest" of the shapes he sees.

Conclusion: With content modification of
altering a primary language component, "largest"
· "biggest," Johnny is able to successfully
complete the terminal tasks. This observation
precludes the decision to suspect spatial/per-
ceptual anomalies. Had adjustment by content
not allowed for the child's success, other sub-
task content modifications are performed until
the child performs accurately. Until all sub-
sequent modifications are sampled, the terminal
task (and its general instructional area) do not
become suspect components of deficiency. If all
potential modifications are sampled without pro-
ducing successful terminal performance, the
problem in the instructional area should then be
addressed by the diagnostician.

Modifying by level: In addition to or com-
bined with adjustments to the terminal task by
content, modification of the task may be executed
by level changes:

1.  The content within the terminal or subtask(s)
    may be retained, but the level, (rate of
    presentation, time required for response,
    number of content items used, and order of
    presentation of content items) may be
    adjusted; or
2.  The terminal task is adjusted both by level
    and by content. Note: The diagnostician is
    cautioned not to employ gross content/level
    adjustments, particularly when both changes
    are used, as the products may easily become
    not minor variations of the original terminal
    tasks, but new terminal tasks entirely. (a
    child's decoding ability to correctly read
    the word "bat," but not "flat" [content
    modification] is grossly misappraised by
    adjusting content, requiring him to sound
    the short vowel /a/.)

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The following terminal task illustration provides
an example of a common classroom academic
activity.  The child is given a worksheet,
accompanied by verbal instructions, to circle
the smallest object in each row.

| | | |
|---|---|---|
| O | o | O |
| x | X | x |
| ▭ | ▭ | ▭ |
| | | |

This terminal task is then broken down into its
task-process elements.  Figure 2.5, a task-
process worksheet, illustrates this breakdown.

DIAGNOSIS:   Diagnostic Teaching

Teaching is the imparting of a skill or knowledge.
What happens between teaching and being taught
determines whether learning has taken place.

Primarily, teaching involves a selection process.
The teacher selects what will be taught.  Next,
that which has been selected is presented.  Some-
times "teaching" ceases after the presentation.
But then the question remains . . . "Has the
knowledge that was presented been learned?"  To
establish an answer, a change of student behavior
has be be demonstrated.  For that reason, the
presenter should continue teaching by giving a
command or cue and expecting from that cue a
response.  If the response is correct, learning
is assumed.  An incorrect response indicates that
either the cue was inappropriate or learning has
not taken place.

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## TASK - PROCESS WORKSHEET

| TERMINAL TASK | DIRECTIONS | TANGIBLE MEDIA |
|---|---|---|
| Child to select smallest object among several items and circle responses | "Circle the smallest object in each row" | Visual worksheet  Example: |

| TASK SEQUENCE | PROCESS SEQUENCE |
|---|---|
| a) Attends to and tells differences between primary language components 'row', 'circle', 'smallest object'  1. b) Attends to fresh sheet of visual configurations | a) Auditory Reception  Auditory Discrimination  1. b) Visual Reception  Visual Discrimination |
| 2. Changes verbal referent 'row' to visual equivalent on worksheet page | 2. Auditory Visual Association |
| 3. Attends to visual symbols contained in single 'row' | 3. Visual Reception |
| 4. Tells difference between size variation among visual symbols | 4. Visual Discrimination |
| 5. Changes verbal referent 'smallest' to size of configuration equivalent among configurations 'row' | 5. a) Auditory Visual Association  b) Visual figure/ground Association |
| 6. | 6. Auditory Motor Association |
| 7. Responds by circling smallest | 7. Motor Expression |
| 8. | 8. Auditory Memory |

| ↔ | Lesson Modification |
|---|---|
| 1. | 1. Say ____ "circle" |
| 2. | 2. ____ |
| 3. | 3. point to each visual symbol |
| 4. | 4. use greater size differences |
| 5. | 5. identify ____ objects bigger/smaller |
| 6. | 6. Identify circle among simple geometric |
| 7. | 7. Ask pupil to copy or read "circle" |

Diagnostic-teaching investigates those crucial
steps between "teach" and "learn." The purpose
of the investigation is to find a teaching pro-
cedure to use for a specific child that will
allow him to demonstrate the highest quality of
correct responses on a specific task.

If a child is not adequately responding to teach-
ing, typically he is referred to a special educa-
tor. Psycholinguistic tests and achievement
tests may be administered. The outcome is a
summary of strengths and weakness in expressive,
receptive, and associative modes and a general
grade level of achievement. From this summary
a diagnostic prescription is written which sug-
gests methods and strategies for either strength-
ening the weaknesses or instructing through the
strengths.

An alternative to this procedure is what has
been called the ability testing procedure. Task
analysis, discussed in the previous section, is
the primary method of ability testing. Its
purpose is to check the relevance of the presented
task. Is the entry level on target for the task
and child? Have prerequisite skills been learned?
Is the task sequence the most appropriate for the
child? Given the instructional sequence, diag-
nostic-teaching seeks to define further how to
teach that sequence.

The child is observed in a variety of instruc-
tional situations. Failure, stress, and succes-
ses are noted with 1) motivational methods, 2)
modes of presentations, 3) types and responses,
4) speed and timing of the activity, and 5)
response to various materials.

Environments for Observation

The investigation occurs within two environments:
the uncontrolled and the controlled. In an
uncontrolled environment a situation in which
the child is already participating is observed.
The observation is an overview of what is happen-
ing in instructional or noninstructional situa-
tions.

Instructionally, the child participates in whole
class instruction, group work, and individual,

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tion level in each group is observed. A comparison is then made between the different groupings. It might reveal that the child attends longer in individual work but his accuracy is lowest in this situation. Or it might be noted that the child reacts negatively in a small group by hitting other group members and not completing the task. Many of the surrounding variables are noted; who is in the working group, who is teaching, time of day, instruction, and what is being taught.

Noninstructional observation is used for two purposes: to investigate possible motivational activities and to verify instructional observation findings. Motivational activities can be free-time playing with blocks, a game of ping pong, a one-on-one basketball game, an art project, or quiet reading time contingent on task completion. Watching a child's responses to these various activities is often a good indication of what is motivating to that child.

A child's receptive or expressive skills may present themselves differently in instructional situations and noninstructional activities. The child who does not follow directions, or does not answer questions directed to him or sits quietly in a classroom may behave differently on the playground. He may give directions for playing a new game or be quickly taught the rules to a new card game. It is important to note that while a child is not responding as expected in a classroom, it does not necessarily mean that the child cannot respond.

The uncontrolled environment is just as it is labeled; a situation where the variables cannot be controlled. On the other hand, the controlled environment seeks to purify the situation as much as possible. The teacher brings into the teach-learn environment only selected variables. Those variables are the basis of the investigation.

Diagnostic Teaching Groupings

Only two basic structures are similar for all

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2. With a peer or cross-peer tutor.
3. Groups of two or more learners.

Each grouping is used with the students who are to be assessed.

One-to-One (Teacher-Adult): A task to be taught is selected. The teacher carefully structures the presentations. It is essential for the teacher to give new information and then request a specific response. She uses several simple activities for a warm-up which may establish communication between teacher and learner. The task and presentation are restructured until there are acceptable responses. For instance, the teacher will present the sounds of "J" and "P" and ask the child to mimic the sounds. There may be no response. Given clues, the child still may not respond. Either the task is not appropriate or the child is not ready to respond to the teacher. The teacher may have to back up and use more warm-up activities or teach mimicking. But before the session can be considered diagnostic and valid for revealing solutions, communication must be established. The child must know what is expected of him. And the teacher must be sure that the child knows. This relationship is the basis for establishing diagnostic results.

Peer Tutor/Cross-Peer Tutor: Similar to the one-to-one situation, the tutor structure requires a presentation and a cue for a response. The cue-response dialogue must be established before the teaching begins. This grouping is used to explore the possibilities of classroom assistance. Can another child of the same age or older teach a skill and receive a higher quality of response? The tutor's presentation is structured by the diagnostic teacher. However, the language, motivational methods, and creativity of the tutor are not restricted because individual style is the key to effectiveness. It was found in a recent experiment with tutor instruction, that first graders responded to fifth and sixth grade tutors. Ten children who had not learned their letters or sound by

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not one a teacher would employ. Such statements as "If ya don't want to be dumb like me . . . ya better learn these things" were heard. Some children, however, did not gain from this teaching situation. This suggests that different children need different approaches to tutor teaching. Clues concerning appropriate approaches for a particular child may be noted in the diagnostic procedure.

Groups: Size and make-up of learning groups affect learning for some children. A child who is being assessed is taught a new skill and given an opportunity to respond in a variety of group situations. Generally the groupings start with just two members and increase in size. Because it is realistic to think of teaching in groups in a classroom, the largest possible grouping is sought. If a child works well in a group of three, then a group of four or five is tried. The group size is increased until the response quality decreases. In this way optimum group size is ascertained.

The group make-up is also altered. Proportion of boys to girls is changed. Class stars and class problem children are interchanged with children functioning at about the same level as the child being assessed. It may be found that a child works most efficiently in groups of two to seven children, performing above his performance level.

The purpose of all groupings is to assist the teacher in structuring the classroom and the instructional setting so that the lesson can be taught most efficiently and with the highest possible quality of response.

Time Periods

Time periods will vary only slightly for diagnostic teaching. Generally the investigation should take 30 minutes to one-hour a day for five to ten days.

While the calculations of the time spent seem impossible, an accurate selective assessment depends on the rapport between teacher and learner

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three days.

Length of time per child will depend on the learning age of the child. Some kindergarten-aged children may work most efficiently for only fifteen minutes. If an instructional sequence offers a variety of learning situations as it should, 30 to 60 minutes is a realistic time allotment.

Close observation of attendance to the task is a key factor in a structured situation. The classroom may demand attendance to a specific task such as programmed reading for one hour. While the child may be able to attend to some tasks for an hour, it may be revealed that this particular task will not motivate him, hold his interest, or instruct him sufficiently for him to attend for the full hour. Until a match between the length of sessions and the instructional approach is found, the diagnostic sessions should continue.

Variables to be Investigated

After appropriate groupings and time periods have been determined, many variables may be investigated. The needs of the individual situation will determine which of the possible variations will be focused upon. The following discussion presents some possibilites for further investigation.

Motivation: When a child does not respond correctly, it may be difficult to distinguish the reason. Is it because he is unable to respond, or is it because he just will not respond? The first part of ability testing (task analysis) often disclosed that the child is not able to do the task or a resequenced version of the specific task. However, if the task is within the abil 'v range, the reason for non-performance might be that the child is refusing to | form. The purpose for motivation then is to rearrange the environment so that performance of a task is worthwhile to the learner. That does not imply that a child dictates his instructional limits, but that his needs are indeed considered.

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Motivation does three things. It energizes or
helps initiate behavior. It gives behavioral
direction and it aids in the persistence of a
behavior. The first decision made when structur-
ing environment is to decide the purpose for the
motivation: to initiate, to direct, or to aid
in persistence.

Self-motivation is sometimes based on the avoid-
ance of failure. A child might attend to a task
so that he will not be deprived of lunch or
praise from other people. This type of motiva-
tion is difficult to control or structure. Also,
failure may result in further frustration.
Diagnostic teaching seeks to discover these
failure-avoidance methods and to offer a positive
approach in their place.

Motivation can be based on efforts to succeed.
A task may be structured to draw on:

1.  The child's interests.

    Example--John is fascinated by machines. His
    reading tasks are about machines. Other
    tasks include the building of machines.

2.  Rewarding experiences for the child.

    Example--John is allowed to keep the machines
    he makes.

3.  Responsiblity.

    Example--John makes a device that makes
    counting lunch money easier for one class-
    mate. He has been responsible for another's
    success.

4.  Need for praise from others.

    Example--The class applauded John's device.
    The principal told John he had made a con-
    tribution to the school.

5.  Sense of personal worth.

    Example--Clare was given math problems that
    she wouldn't or couldn't do. However, when
    when was allowed to make accurate change in
    the lunchroom, she showed great improvement.

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the child is motivated by tokens or extrinsic
reinforcement.

Ultimately, self-motivation is desirable.  In
a diagnostic situation a task is presented offer-
ing each type of motivation.  That which brings
the desired results is then recommended.  Per-
sistence at a task will best result from a self-
motivation schedule.  So, while "other" motiva-
tions may be selected initially, self-motivation
should be the ultimate goal.  A successful
response hinges on motivating and knowing the
probability of reaching that success.

Manner of Presentation:  Manner is the actual
way of presenting.  It can be divided into per-
sonal and nonpersonal presentations.  Personal
presentations include those things presented by
an instructor, such as visual (cue cards), audi-
tory (directions, imitations), demonstration
(mimicking of how to walk or skip), or a combina-
tion of these.  Nonpersonal presentation includes
visual media (film strip, programmed material),
auditory media (cassette tape), or a combination
(film, language master, Systems 80).  In diagnos-
tic teaching each approach is tried for a
designated task and the one or ones that elicit
the highest quality of responses are the recom-
mended manner.

Form of Presentation:  Each task may be
presented by the part method or the whole method.
In the part method, the task is taught by break-
ing up component parts and instructing for each
individually.  Academic areas, particularly, are
adapted to this method.  The whole method is
teaching the entire task at one time.  This can
be used for a motor skill and rate learning.

Some children, for example, learn a word easier
by phonetically breaking up the component parts.
Others learn most effectively by learning the
whole word at once.  Swinging the bat, however,
may be most efficiently taught by showing the
entire swinging motion, starting with bat over
shoulder, elbows bent, and swinging forward with
extended arms.

The task may be massed  or distributed over a
length of time.  Mass presentation in the teaching

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of all the component parts at one time. Distributed presentation is the teaching of the component parts over an extended time period with other tasks being taught intermittently.

To achieve mastery of a skill (such as cursive writing) some children need to extend the learning process over the entire school year. Children learning other skills such as all the vowel sounds need to learn the entire group at once. This method allows for immediate similarity and difference discrimination, a supportive cue for learning.

Variety in Presentation: The investigation for variety should distinguish the fine line between too much and too little. Enough variety is needed to maintain interest and stimulate different practice responses, but too much variety will inhibit learning. Variety is appropriate as long as the learning curve is ascending and the child enjoys the task.

Response Manner: The type of response required from a task is indicated by the cue given. A child may respond verbally, by writing, by motor responses (such as pushing a button or selecting an item), or by imitating. Each of the responses has a quality limit as well. Imitation or copying (repeat what I say); completion (the sky is _____); multiple choice (the sky is [blue, red, orange]); or open-ended (describe the sky). The selection of an appropriate response manner is as important as any other selection.

Given a history test, Betty cried and put down her pencil. When asked the questions orally she verbally answered each one correctly. Elton could read the questions but preferred answering in a tape recorder without anyone around. When the test was changed from fill in the blank to multiple choice, Joe's accuracy increased by 80 percent.

The required response must fall within this capacity of response range. No student can be motivated to do something that is physically or mentally too difficult for him.

Also, an expected degree of recall must be considered. How much is to be remembered over how long a period of time? During the teaching of multiplication, for example, will memorization of the time tables be expected? Or will the child be allowed to keep the tables with him? Will the whole process of mulitplying and adding of a three-place multiplier be expected to be memorized without clues? What kind of memory demand is made and what kind of clues must be provided?

Timing and Speed of Response: The time given to a task presentation and the speed expected for the response depends on the "power of learning" for each child or the type of task. Any of the discussed variances on a task will result in four types of responses. The child's learning power will be:

1. Slow to respond with a low accuracy
2. Slow to respond with a high accuracy
3. Quick to respond with a low accuracy
4. Quick to respond with a high accuracy

There are less distinctive categories but for purpose of explanation these four are described.

A slow response means that a child will take a lower time to comprehend instruction and be ready to respond according to the instructional clue. Instructional timing needs to be planned on an extended basis. For example, sounds of the letters b, t, and n should not be a one-day objective.

Children who are faster to comprehend may have a larger objective for a day or week. Response time is keyed to the length of presentation and number of repetition. John, for example, has consistently learned his times tables after twenty presentations of each fact for two days. It would seem reasonable to program his instruction of times tables accordingly.

Accuracy is another consideration. A child with a slow response and low accuracy may need an enlivened or varied presentation and additional motivation.

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Slow responses and high accuracy need to be
accepted by the instructor as a caution not to
expect a faster response if accuracy is desir-
able.

Quick and accurate responses are, of course, a
teacher's dream. This quality of response, if
desired for a child, may take longer instruction-
al hours. The value for each task needs to be
evaluated.

A child may be quick to respond, but show low
accuracy. This can either be accepted as the
learning power or time can be spent offering
less-cluttered cues, smaller demands, etc. in an
attempt to alter this power.

In any case, diagnostic teaching investigates
"power of learning" to give the teacher objec-
tives and program limits. Also, it indicates
the need for alternative strategies to reap the
highest quality response.

Materials: To teach a task, the previously
mentioned factors formulate a natural selection
process for instructional materials. What
material, then, best incorporates the selected
mode of presentation and response? Which mate-
rials use the most appropriate method of timing
and are most adaptive for motivation?

Materials are experimented with on a trial-and-
error basis by the diagnostician:

1.  Use the material available in a school.
    These should be indexed.
2.  A representation of index materials should
    be in the diagnostic setting.
3.  Materials are tried which most closely ap-
    proximate the selected sequence and level.
4.  Materials are tried that vary with the mode
    of presentation.
5.  Materials are tried that vary with the type
    of expected response.

Those materials that are selected for program
development are those which most closely align
themselves to the philosophy of the school and
teacher and those which come closest to the
natural selection factors previously diagnosed.

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This portion of diagnostic teaching is not a program guide, but an "immediate" supplement or assistance for the teacher. Diagnostic information becomes concrete and relevant.

Frank, a second grader, needs additional instruction in learning his sounds. The objective of the diagnostic-teaching situtation is to use a presentation approach, response expectation, motivation formula and material that will encourage Frank to learn his sounds. A learning expectation rate should be established.

During diagnostic teaching, it may be revealed that Frank needs at least 50 repetitions with an opportunity to respond. Also, his pace for responding to cues may be extremely slow, although accuracy is high. He is highly motivated by machines. The diagnostician may suggest a teaching procedure for Frank based on these conclusions.

In summary, diagnostic teaching investigates the surrounding variables in the instructional task presentation and response dialogue. Through trial and experiment, a learning environment description evolves that has been proven effective for a specific task and a specific ch:
The purpose of this description is to set
parameters for an educational prescriptio
will assist a child in demonstrating the hi
quality of correct responses--learning.

DIAGNOSIS:   Summary

Through diagnostic assessment, much information about a child can be gathered and analyzed. The different techniques for gathering such data presented in this chapter--informal and formal testing, task analysis, task process analysis, and diagnostic teaching--each present information uniquely. Whatever method is chosen, the resulting information will have to be synthesized and coordinated so that the prescription formulated from the data will be customized to the child.           •

The next chapter proposes ways to organize and interpret the data collected in the diagnostic

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procedure. When that has been done, an educa-
tional prescription may be written. Prescription
is the next step toward an appropriate education-
al intervention.

Chapter Three

PRESCRIPTION

to the success of programming, but is a step
that is often overlooked or minimized. It is
common for diagnosis to be completed and a move
then made straight to a program. In fact, the
program may not even fit the diagnosis. When
this happens, time spent on diagnosis has been
wasted.

Prescription may be viewed as what will be
taught (skills, concepts, behaviors, etc.)
based on diagnosis and how (materials, rein-
forcers, methods, etc.) it will be taught.
Prescription gives direction to programming
in that methods that will probably work are
suggested. In addition, criteria for correct
performance are decided upon during the pre-
scriptive process. These criteria provide
the groundwork for later evaluation. Two sec-
tions comprise this chapter.

## Organization of Diagnostic Data

A great amount of information may be collected
on a child through diagnosis. This section
offers a strategy for compiling information in
a meaningful way so that patterns of strengths
and weaknesses can be analyzed. By coordinat-
ing academic and behavioral elements, a
picture of the total child can be formed.
Needs are then prioritized so that those which
are most critical to future success are dealt
with first.

## Writing a Prescription

Once the basic decisions concerning priorities
have been made, actual writing of the prescrip-
tion is undertaken. This section addresses
elements which should be included in every writ-
ten prescription.

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appropriate, but the most efficient manner for
a particular person needs to be developed and
modified by that person. The goals in organiza-
tion of data are:

1. To examine error patterns which appear in
   the diagnostic data. An area of defi-
   ciency on one test may also appear on
   other tests and informal inventories.
2. To compare informal testing results and
   results from formal instruments.
3. To formulate a picture of the total child
   in terms of educational needs, motivation,
   learning power and capacity and achievement
   level.

Categories of academic performance may be
selected such as math, reading and written
language. Addition, subtraction, multiplica-
tion and division would further specify
categorical areas within the area of math.

Rather than academic performance, it may be
beneficial to look at pre-academic areas or
processes which are fundamental to later aca-
demic functioning. Categories include receptive
and expressive language, motor development, etc.
This process categorization is an outgrowth of
task-process analysis, which is discussed in
Chapter Two.

Once the categories to be viewed are determined,
it is necessary to consider the diagnosed level
of functioning. This information may be avail-
able from formal tests in an age score, scaled
score, or grade level. Informal results may
show the level at which a child is functioning
adequately and where he is not. These levels
in the different categories will show areas of
strength and weakness. In academic areas, they
compare skill levels among school subjects.
In process categorization, malfunctioning in
various process areas is pointed out.

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begin.

2. Strengths and Weaknesses. While remedia-
   tion may focus on developing areas of weak-
   ness, it is also very important to note a
   child's strengths. These strengths can be
   built upon to increase probability of suc-
   cess.

3. Motivation. Observation can give clues
   about a child's desire to work on certain
   projects and his willingness to complete
   what he starts. Whether he is self-
   motivated or needs external reinforcement
   may also be noted.

4. Attention. The child's attention span for
   various types of activities can be estimated
   through observation and recording of his
   attentional work time or the amount of time
   he spends in a particular activity.

5. Learning Rate. Some standardized tests
   offer exercises for determining learning
   rate (the period of time or number of
   trials required to learn something). While
   no exact conclusion can be drawn, one can
   estimate whether or not the child will need
   a great deal of exposure to a skill to
   learn it.

6. Accuracy. One child may work rapidly but
   make many errors, another may work slowly
   but accurately. When this is taken into
   consideration in prescription, more realis-
   tic time allotments and performance cri-
   teria may be decided upon.

7. Perceptual Dysfunctions. Severe perceptual
   problems may be picked up in diagnosis.
   These should be noted and further examina-
   tions completed as necessary. If these
   dysfunctions interfere with learning proces-
   ses, prescriptions may be altered accordingly.

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**Developing a
Hierarchy of
Need**

Frequently the organization of diagnostic
information reveals many categories or areas
requiring remedial attention.  These areas must
be placed in order from most critical or most
basic to those which can wait until later for
remediation.  A simplified example in the math
area would be a child who has been diagnosed
as unable to perform multiplication, subtrac-
tion, division, or addition tasks.  He has,
however, mastered rote counting to 100 and can
use one-to-one correspondence to count objects.
Putting his remediation needs in sequential
order would probably result in a statement
indicating addition as the first priority.  It
is the most basic of the deficits and the other
skills listed depend on it.

One must always be aware that the priorities
and logic of the person making the prescription
may not be the same as those of the learner.
Some children do succeed at subtraction before
conquering addition.  The process of prioritiz-
ing will, however, provide a starting point for
a remedial program.  Another consideration dur-
ing this step of planning is whether remedia-
tion of a particular deficit is actually
necessary to success with other objectives.
If, in task-analytic diagnosis, some prereq-
uisite skills are found lacking, it must be
decided whether these skills are necessary
for achievement of the terminal objective.  If
they are, in fact, crucial, they are noted for
prescription.  If, however, the child can
complete the terminal objective in spite of
the gaps, perhaps remediation of those skills
is not necessary.

The next step toward writing the prescription
is to interface or draw parallels among various
academic categories.  It is often possible to
develop a coordinated  prescription which takes
into consideration common remediation elements

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nosea as having a language disorder. Although the ability to read is the desired academic outcome, the components involved in the language disorder (memory for sounds, memory for meaning and syntax) may comprise the prescriptive elements. Memory for sounds is a fundamental skill for recalling the order of sounds in a phonetic approach to reading; memory for meaning would be reflected in listening comprehension, ability to follow directions, and reading comprehension; syntax or word ordering within a sentence would require memory skill and denote how much of what a child hears he is capable of repeating.

The interfacing or coordination of approach adds strengths to the remedial program. If elements are taught in isolation, the child may fail to associate the individual learning task with overall development. He may learn a skill in one setting but not be able to use it in other settings.

The final step in preparing a prescription is to write out the components which will play a part in actual instruction. These, combined with the programs or methods to be used, will form a complete lesson plan. An approach to preparing this plan is described in the following chapter.

## PRESCRIPTION: Writing a Prescription

Decisions Based on Diagnostic Results

The actual writing of the prescription can be viewed as the culmination of the first phase in the diagnostic and prescriptive process. Once this is completed, materials are selected and the instructional activity is set in motion. Evaluation and revisions will continue as the prescription is implemented, but if plans appropriate to the child's needs and characteristics have been made, major revisions will probably not be necessary. In preparation for

teristics about the child.
2. Arrange remedial needs in order of priority. Those needs which are most crucial to further success are dealt with first.
3. Note cases where remediations from separate academic areas can be used to reinforce one another.
4. Write the prescription.

The degree of detail and the elements included in the written prescription may vary somewhat depending on the instructor's needs and the child's situation. The format or lesson plan can also be adapted to suit the individual instructor.

Before writing the prescription and finalizing the behavioral objectives, several decisions about that prescription must be made. These may or may not be written down, but all have a bearing on what the instructional program will entail.

Instructional Approach or Methodology

While it is not the intent at this time to select a specific published or teacher-made program, many choices can be made concerning the basic approach to instruction. Will the instructions be structured or flexible? Will programmed learning be selected? Will the teacher need to invest a great deal of time in management of the child or will that child be able to manage himself with minimal intervention form the teacher?

Instructional Setting

Will the child be working individually with the teacher, in a small group, or with an entire class?

Preferred Presentation for a
Particular Skill

If diagnosis has indicated specific learning

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## Types of Reinforcers

A child may be highly motivated to learn; he
will be reinforced intrinsically as he progres-
ses through tasks. Another child may need some
type of extrinsic reinforcement. While details
concerning how this will be set up may be
determined in the programming phase, a basic
direction is planned in prescription.

## Instructional Level

This is determined from diagnostic data. Not
only the grade level, but levels of interest
and complexity should be considered here. A
child's language maturity or social adaptation
influence the type of materials which should
be selected. A fifth grader may have an
interest level or language level similar to a
much younger child. While he is working on
fifth-grade skills, he may need a program which
approaches those skills on a simpler level.
Selecting a program which the child will be
able to relate to socially may also aid instruc-
tion.

## Time

Several aspects are considered here. It should
be determined how long will the child be in-
volved in instruction (hours, or minutes per
day, number of days, weeks, and so on).

Also, within the daily time period, how long
will he be able to attend to one activity and
how often will the activity need to change to
prevent boredom or frustration? Consider, too,
how often will the child need to take a break
during the instructional period.

Decisions must be made as to the projected
length of time required to master the objective.
If the date is reached before completion of the
objective, the approach may need to be altered.

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ities before he acquires a skill or will he
probably learn with fewer presentations?

Auxillary Personnel

Several members of the staff may have the com-
petencies to manage a portion of the prescrip-
tion.  Teams including classroom teachers,
school nurses, art and physical education
teachers, tutors, and parents, in addition to
special educators, frequently implement the
prescriptive elements.  A vocabulary experience
in teaching verbs may be delegated to the
physical activity the instructor could build
vocabulary by explaining to the child what he
is doing.  "You're pulling the rope."  The
child is helped to comprehend through experience.
He may also be asked to repeat what he is doing
or to answer questions about what he does.

Suggestions for Placement

Perhaps the prescriptor will see a need to
place a child in a special class or with a
resource teacher.  Suggestions concerning this
may be included in the prescription.

_____

Elements of a        After decisions such as those described on the
Prescription         proceeding pages have been made, the actual
                     prescriptive statement can be written.  If this
                     is done carefully and thoroughly, the direction
                     for programming and evaluation of progress will
                     be clear.  Each written prescription should
                     include the following elements.

Behavioral Objectives

Each skill or behavior to be taught must have
a behavioral objective.  The objective states
what he learner will be able to do when
inst uction is completed.  An instructor has a
vehicle for making progress, but without objec-
tives, he does not know where he is going, how
he is getting there or when he has arrived.
The behavioral objective, then, is a clear,

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To be useful, a behavioral objective must be
stated in measurable and well-defined terms.
Action verbs rather than abstract terminology
must be used. For instance, when we say, "The
child will understand the 'Age of Dinosaurs,'"
we have no way of measuring his understanding.
A more useful statement would be, "The child
will name five kinds of dinosaurs when asked
to do so by the teacher."

Three basic components should be present in
each behavioral objective.

1. A terminal behavior: What the child will
   be doing (in observable terms) on comple-
   tion of the objective.
2. Important conditions: Who will be giving
   the stimulus for performance (teacher,
   aide, parent, etc.)? Where will it take
   place (classroom; outdoors, at seat, in
   groups, etc.)? What materials will be used
   (textbook, paper, pencil, chalkboard)?
3. Criterion for acceptable performance: This
   includes the amount of time the task should
   take and the degree of accuracy expected.
   One or the other of these may be emphasized,
   depending on needs. For instance, a goal
   for a very accurate, but extremely slow and
   tedious worker might be to shorten his work
   time. Another child may work rapidly but
   with many errors. The emphasis for his
   objectives would be on increased accuracy.

Task Analysis of Objectives

In diagnosis, tasks were analyzed to find the
level at which the child could no longer achieve
and to determine what aspects of a skill were
causing difficulty. In prescription, tasks are
analyzed in order to provide a logical, step-
by-step approach to teaching the skill. The
basic procedure of formulating the task analy-
sis (as discussed in Chapter Two) is the same
for both diagnosis and prescription, but the use
is different. Each behavioral objective's

The terminal behavior is reached upon completion
of an orderly progression through the steps with
mastery at lower levels before more complex
tasks are presented.

The task-analytic diagnosis will have pointed
out the segments of the objective which the
child can and cannot perform.  The prescription
will place the child on a level of activity
corresponding to the purpose for instruction.

1.   Diagnosis may have shown mastery of task
     A, B and C, some proficiency in D and
     failure on E.  If review is the goal of
     instruction, prescription may call for
     activities relating to A, B, or C.
2.   Using the same example, the instructional
     goal may be to sustain or reinforce a task
     which can be done but not to the criterion
     for mastery.  More activities may be pre-
     scribed for task D.
3.   If the goal of the prescription is the
     presentation of new material at a higher
     level, task E will be introduced.

It is the decision of the prescriptor what the
goal will be and at what level of task analysis
the student will begin.  If it is found during
instruction that a jump from one step to the
next is too great for the student, a sequence
modification can be made.  That is, the step
which is causing problems can be further broken
down or altered for more efficient presentation.

The summary forms beginning on p. 110 (3.1b, c, d)
were developed by the staff at the Rocky Mountain
Regional Resource Center as a possible way of
organizing diagnostic, prescriptive, and pro-
gramming data.  The figures offer a possible
way of plotting data and organizing the pre-
scription before moving on to programming and
evaluation.

PRESCRIPTION:   Summary

Upon completion of the prescriptive phase of
an educational intervention the person who will

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| | Grade Equivalent | Age Equivalent | Chronological Age | Height | Weight | Motor Coordination | Mental Ability | Social Maturity | Speech Development | Language Development | Reading | Arithmetic Reasoning | Arithmetic Computation | Spelling | General Information | | Mobility | Vision | Hearing | Interpersonal Relations | Screening Profile |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | 1. Screen |
| | | | | | | | | | | | | | | | | | | | | | 2. Plot |
| | | | | | | | | | | | | | | | | | | | | | 3. Draw Average Range |
| | | | | | | | | | | | | | | | | | | | | | 4. Find Cluster Above and Below Range |
| | | | | | | | | | | | | | | | | | | | | | 5. Decide What Should be Done. |
| | 12 | 17 | | | | | | | | | | | | | | | | | | | |
| | 11 | 16 | | | | | | | | | | | | | | | | | | | 5. Very Superior |
| | 10 | 15 | | | | | | | | | | | | | | | | | | | |
| | 9 | 14 | | | | | | | | | | | | | | | | | | | |
| | 8 | 13 | | | | | | | | | | | | | | | | | | | 4. Above Average |
| | 7 | 12 | | | | | | | | | | | | | | | | | | | |
| | 6 | 11 | | | | | | | | | | | | | | | | | | | |
| | 5 | 10 | | | | | | | | | | | | | | | | | | | 3. Average |
| | 4 | 9 | | | | | | | | | | | | | | | | | | | |
| | 3 | 8 | | | | | | | | | | | | | | | | | | | |
| | 2 | 7 | | | | | | | | | | | | | | | | | | | 2. Below Average |
| | 1 | 6 | | | | | | | | | | | | | | | | | | | |
| | | 5 | | | | | | | | | | | | | | | | | | | |
| | | 4 | | | | | | | | | | | | | | | | | | | 1. Very Defective |
| | | 3 | | | | | | | | | | | | | | | | | | | |
| | | 2 | | | | | | | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | | | | | | | |

AGE AND GRADE EQUIVALENT

Fig. 3.

Example of Kirk Profile

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| BIOGRAPHICAL | Address: | | | Phone: |
|---|---|---|---|---|
| | Father's Name | Occupation | Grade Completed | |
| | Mother's Name | | | |
| | Number of Brothers | Number of Sisters | Position in Family | |
| | Age When: | Walked | Talked | |
| | Physical Difficulties | | | |
| | Vision | | Hearing | |

| | Describe Inter-Relations in the Home: |
|---|---|
| | Child - Parent |
| | Child - Child |
| | Parent - Parent |

Impression of the Child:

Observation Summary:

| SUMMARY | | ABILITY | ACHIEVEMENT | ACADEMIC SURVEY | LEARNING OPERATIONS |
|---|---|---|---|---|---|
| | Test | | | | |
| | Date | | | | |
| | Form | | | | |
| | Low Score | | | | |
| | Percentile | | | | |
| | Grade Equivalent | | | | |
| | Mental Age | | | | |
| | | | | | |
| | Special Problems | | | | |

Fig. 4.9b

APGAR Format for Accomplace Profile.

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Terminal Objective

Enabling Objective I

Program Description

Enabling Objective II

Program Description

Fig. 3.1c

Enabling Objective III

Program Description

10
9
8
7
6
5
4
3
2
1
0

Baseline:

Enabling Objective III

Program

10
9
8
7
6
5
4
3
2
1
0

Baseline:

Target Date Evaluation

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Fig. 3.1d

be working with the child should have an accurate picture of the child's characteristics and a workable approach for making changes in the child's repertoire. The original prescription may be altered as ongoing evaluation shows need, but the user should now have a place to begin.

The decisions as to what specific materials and exercises will be used are not made until the programming phase. The prescription should be clearly defined so that appropriate materials may be selected to match the child's needs.

Chapter Four


PROGRAMMING

The programming phase of instruction involves
the selection of materials and methods to be
used in carrying out the prescription.   In
the past, programming for handicapped children
has often been inadequate.   Materials have not
been matched to prescriptions nor have appro-
priate programs been followed through to com-
pletion.   The purpose of this section is to
aid the trainee in selecting and using programs
which will facilitate the completion of pre-
scribed objectives.

Strategies for modifying existing programs
from a variety of published materials and tech-
niques are presented.   These will offer the
programmer alternatives which may be useful in
planning.   The actual program selected may vary
for a specific prescription.   Flexibility
allows for variations in budget, materials
available, time and instructor's degree of
training in use of materials and any other
limitations which may influence a particular
situation.

The programmer, then, will not be applying
standard "recipes" to problems but will be fol-
lowing procedures which will hopefully lead to
optimum planning and instruction for the indi-
vidual child.   The following three sections are
included in the Programming Chapter.

Scope and Sequence

Optimum use of materials depends on selecting
those most appropriate in content and level.   If
a program does not deal with the necessary tasks
or if it is too easy or too difficult, its
value is decreased for the child.   Scope and
sequence tell the programmer what is covered in
the material and the order in whicn skills are
presented.   This section further defines scope
and sequence and offers suggestions for deter-
mining the scope and sequence of published
materials.

Instructional Materials and Programs

This section presents a variety of materials and
techniques which may be used and modified to

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fit specific cases.  Suggestions for adapting
materials are also offered.  A chart showing
types of materials available from a variety of
publishers offers the programmer many alterna-
tives to examine.  In addition, criteria for
selecting published materials are listed to
guide the programmer in choosing the best pos-
sible approaches.

## Instructional Methods and Techniques

In addition to materials, instructional ap-
proaches need to be selected in porgramming.
Methods and techniques which have proven use-
ful in many situations are described in this
section.  The programmer and/or instructor
may want to adapt one or more of these in
dealing with a student.

## PROGRAMMING:  Scope and Sequence

Definition of
Scope and
Sequence

Scope refers to the type of content covered in
a particular instructional program.  It includes
the skills studied and the course content.
Sequence is the order of presentation of those
skills.  Knowledge of scope and sequence of
programs is essential to anyone using any in-
structional material in any curriculum area
(reading, math, spelling, language, perceptual
and motor development, etc.).

Diagnosis includes checking a child's level in
the sequence of skills and locating gaps in his
development.  Recommendations can be made for
remediation of deficits and over all achieve-
ment statements can be developed.  Once these
statements have been made, programming involves
comparing the child's instructional needs to
available materials.  The scope and sequence
of the materials must match the child's needs.
In other words, if the child does not know
short vowels in reading, then the scope of the
materials selected must include short vowels.
The sequence should be paced at a rate which
will make success possible.  One which moves
too rapidly will be of little value.  Also to
be considered in sequence is the age level to
which the material is directed.  A remedial
unit on short vowels written for twelve-year
olds may have little meaning to a second grader.

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| | |
|---|---|
| Need for Scope and Sequence | A parallel between scope and sequence and task analysis can be drawn with scope as the task and sequence as the orderly progression of steps which leads to completion of the task.  In this light, the value of scope and sequence becomes one of awareness of the prerequisite skills needed to function at a particular level.

It is not sufficient to become familiar with the scope and sequence of one particular grade level only.  The fifth-grade teacher who is not familiar with earlier and more advanced levels will be handicapped.  She will not know how to teach the child who is functioning below grade level nor the one who is above grade level. Special educators dealing with children whose achievement levels may be extremely varied should be aware of the entire scope and sequence of content areas from readiness level on.  In this way they can present skills in an orderly fashion and progress through the various levels as they move toward remediation of their students' problems. |
| Locating Scope and Sequence in Published Materials | In addition to knowledge of different levels of scope and sequence, it is also important to know the scope and sequence of different series (reading, mathematics, etc.) so that when a shift is made from one series to another, the teacher will know how and when it is appropriate to bridge back and forth from one series to another.

The following list includes some suggestions for locating scope and sequence of materials: |

Published Materials

1.  Scope and sequence charts provided by pub-
    lishers on request
2.  Tables of contents in textbooks
3.  Instruction sections of teachers' manuals.

General Materials

1.  District and state curriculum guides
2.  Teacher-made outlines of instructional units
3.  Task analysis hierarchies.

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Modifying
Existing
Programs

Reasons for Modification

When a prescription has been written, appro-
priate teaching materials are selected which
will fit the prescription.  Often, no existing,
published program will exactly match the needs
of the prescription.  In this case, the teacher
has three alternatives:

1.   Prepare an original instructional program;
2.   Use an existing program which may not be
     completely appropriate;
3.   Modify existing programs to meet the needs
     of the child for whom the prescription has
     been written.

There are circumstances in which each of these
alternatives may be appropriate, but there are
also drawbacks to the first two.  Making
original materials can be very time consuming.
However, if the content is such that no avail-
able materials will serve, the teacher may feel
the time spent if justified.  The school bud-
get may prohibit buying published materials.
The teacher may then make similar, less expen-
sive original materials.

When school districts select materials, they
often set restrictions on what supplements can
be used and specify that the "basal" text must
be used with all students.  Experimental situ-
ations where success of new programs is being
tested might also place limits on what materials
can be used in a classroom.  In these two situ-
ations, the teacher will find herself tied to a
program which may not meet the needs of all her
students.

The most practical solution to the problem of
finding materials to match programs is the
third alternative above.  The greatest advan-
tage is that probably a program can be located
which is appropriate in many ways, so a large
part of it can be used without modification.
If limitations have not been placed on the
teacher, there is a wealth of materials to draw
from and the teacher can glean the best from
several different ones in making programming

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choices. Each publisher offers a different approach, but many use basically the same skills, scope, and sequence. The teacher may find it profitable to buy a few copies each of several equitable programs rather than purchasing many copies of one set of materials. With some children, exposure to a variety of approaches may clarify concepts and offer variety as a form of motivation. Other children will benefit more from one basic approach with supplemental material following the same pattern. Which approach is best for a particular child is a decision the teacher must make when planning the child's program.

Another consideration is the amount of exposure needed before a concept is learned. This cannot be determined explicitly before instruction but the teacher will be able to make some general choices. The teacher will know whether the child will probably need a great deal of repetition for mastery or will be able to move rapidly and acquire concepts quickly.

A published program may have a great deal of supplemental equipment available such as cassettes, language master suggestions, filmstrips, etc. If funds are not available for these materials, the teacher may still want to buy the basic program and enrich it in other ways. On the other hand, the teacher may have access to tape recorders, language masters, kits containing puppets, picture cards and other multisensory stimuli. Any of all can be adapted to fit the program selected. For example language master cards can be made to supplement a workbook page on short vowels. Also, picture cards from the Peabody Kit can be used for activities not suggested in the kit. Use of puppets from any source is limited only by time available and the creativity of the teacher and student.

Steps in Adapting Materials

Several basic steps may be followed in adapting materials.

1.  Diagnose needs and determine the instructional level of the child.

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2. Find materials which present the skills to be taught.
3. Decide whether the interest level and age level of the approach are appropriate (books can be found which present short vowels in a manner directed to first graders, fifth graders, low-achieving junior high school pupils, etc.).
4. Make an initial guess as to how much repetition will be needed. This may affect choice of materials as some programs repeat more than others. It may be decided to select:
   a. a highly repetitive program and not use all the examples;
   b. a fast-moving program supplemented with other materials;
   c. a program which will probably nearly match the pace of the student. These choices will be evaluated during instruction and modified according to the changing needs of the child.
5. Decide whether one basic approach will suffice or whether it will be desirable to use sections from many books in teaching a skill.
6. Review the selected programs and decide what other modifications will be needed, e.g.:
   a. supplemental activities using language master, puppets, tape-recorders, etc.;
   b. changes in type of response from the child, e.g., acetate sheets rather than writing directly in the book, verbal responses when written may be called for by the manual, tape recorded responses--these can be varied to meet the needs of the child and the physical situation and will not always follow the directions in the manual explicitly--if a program calls for use of a tape recorder, but this causes too much distraction in the room, written responses may be substituted--etc.;
   c. give more directions than are specified in the teacher's manual;
   d. use reinforcers not suggested in the manual.
7. Ongoing evaluation is an essential part of the success of any program. Once the instructional program has been set in motion,

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progress checks will bring out needs for
further modification in the instructional
program.

## Ongoing Evaluation of Programs

Every program, whether academic or behavioral,
must be evaluated periodically to insure that
progress is being made. Behavioral objectives
are important in this evaluation as they include
criteria for final performance mastery. When a
child can perform a task at a mastery level, he
goes on to the next task in his sequence.
Checks for progress toward a goal are important
for four reasons. These are:

1. If progress is very slow, modification of
   the program is necessary.
2. When evaluation is frequent and the child
   is involved in noting his improvement, this
   involvement often serves as a reinforcement
   and leads to more improvement.
3. The teacher is kept alert to the goals of
   the program at all times.
4. Special programs can be justified if actual
   progress can be shown in a concrete manner.

The frequency of progress checks will vary
according to individual circumstances. Some
children need more frequent reinforcement than
others. Checks may occur more frequently early
in a program than after a routine is estab-
lished.

Records kept and forms of testing depend on
the needs of the situation. A graph or chart
may be used to mark scores, percentages, or
speed of performance on daily or weekly tests.
These tests may be informal or structured.
This charting will be most valuable if it does
not become tedious and time consuming. The
goal is to have a view of the child's movement
through a program, not a series of elaborate
charts. A file or folder should be kept for
each child. This allows easy access to records
by both teacher and student.

Task analysis sequences can be adapted to
frequent progress checks. A listing of all
steps toward the terminal objectives may be

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written on a chart. As each small step is
mastered, it is checked off. The date of com-
pletion may also be recorded. This type of
recording offers a concise view of where the
child has been and how far he still has to go.

As tests are administered and recorded, the
movement toward the goal must be analyzed. If
progress is slow, perhaps the task is too dif-
ficult or the material is not appropriate for
the child. Changes, based on probable reasons
for failure of the program, need to be made.
If progress is rapid at first but begins to
taper off, the program may have become boring
or the child may be ready for more difficult
tasks.

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Using Commer-
cial Programs
and Materials

Many publishers produce instructional materials.
An exhaustive list would fill volumes. Appendix
F contains a partial list of companies which
manufacture educational materials. Although
many of these companies produce several items,
only one representative item has been selected
for each.

Check marks under the subheadings signify that
materials are available for special education
with emphasis on readiness, language arts, or
mathematics. Definitions of the terms on the
format section of the chart will follow the
chart itself. The company may publish mate-
rials in unchecked subheadings, but not expres-
sly for special education.

Evaluation of Published Programs

The almost limitless amount of published in-
structional material available makes evaluation
and selection potentially an overwhelming job.
Advertisement and packaging by publishing
companies may make programs look attractive
when in a particular school setting they would
be ineffective. The following pages offer
criteria to be considered when selecting and
evaluating programs for use in a school. A
sample check list is offered to help objec-
tively meet the needs of the situation.

The following are items to consider in the
evaluation of a program. The rating sheet was

based on these items.

1. Primary Input and Output: What is the
   primary input of the program? It is
   visual or auditory, or is it a combina-
   tion? For the most efficient learning to
   occur, there must be the best possible
   match between the program and the learning
   style of the student.

2. Skill: What is the primary skill involved
   in the program? Some skills are attention,
   identification, discrimination, association,
   memory, and sequencing. Some programs will
   contain all of these, others will contain
   one primary skill. Select a program based
   on the prescription that will match the
   learning style of the student.

3. Philosophy: Does the program fit the phil-
   osophy of the teacher, school and/or dis-
   trict? Materials are more effective if the
   teacher agrees with the basic philosophy
   of the approach.

4. Interest: Is interest build-in in the
   program or will other reinforcers have to
   be provided to keep the student motivated?
   Some programs have built-in reinforcers
   and others need additional reinforcers.

5. Cost: This is a factor when making pur-
   chases within a budget. Many programs may
   just be a series of directions which can
   be of very low cost or no cost at all.

6. Placement Tests: What placement tests are
   available? A program needs to have some
   objective way to measure the student's
   present skill level. The placement test
   will help determine if the student can
   profit from the program or if he has al-
   ready mastered the program material. The
   placement test does not have to be long and
   detailed; it need test only the objectives.

7. Service: Is the program constructed of
   durable materials? If not, is it easily
   repaired or replaced? If the program uses
   a machine, is the service available locally
   or regionally or does it have to be shipped

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back to the factory? What are the possible
service costs? Are the materials consum-
able, and are they expensive to replace?
Can materials be used with acetate overlays?

8.  Hardware Types: Does the software match
    the hardware? For example: If you have a
    reel-to-reel tape recorder, you do not want
    cassettes. There are many other areas
    where you need to match software (the pro-
    gram) to the available machines.

9.  Teacher Background: Does the teacher     e
    the experience and training necessary
    use the program? Programs are classified
    in one of three areas. 1) The program can
    be used with no training. The teacher picks
    up the program and begins. 2) It can be
    used with little formal training. The
    teacher in this case may need to spend alot
    of time reading the manual or may need to
    observe someone using the materials. 3) It
    can be used only with considerable training.
    A workshop must be conducted with opportun-
    ity to use the program under direct super-
    vision.

10. Simplicity of Directions: Is the program
    simple for student or teacher to follow?
    series of complex steps for either a teacher
    or student may not be followed accurately.

11. Scope and Sequence: Will the material pre-
    sented meet the instructional needs for 1
    which it is to be used? Is the level appro-
    priate for the child? Are there small
    sequential steps with mastery built-in?

12. Progress Checks: Is progress easily mea-
    sured? A program is not efficient if it
    takes much of the teacher's time measuring
    progress. Also, a child feels a sense of
    accomplishment when he sees himself making
    progress.

13. Appropriateness of Vocabulary Level: If
    the program is to be read and followed by
    the student, is the vocabulary at the level
    the target student can read?

15. **Population:** Is the program for use by one student at a time? Can students take turns with the program? Can three or more students work on it at the same time? Will the students be able to work independently or will they need teacher supervision and instruction?

16. **Physical Setting:** Where can the student work? Can he work in the regular classroom where normal distractions might occur? Does he have to be isolated from distraction? Will the program distract other students? Will an electrical outlet be needed?

17. **Time:** How long will a student be working in the program? Will he be in it 180 days, one-half hour per day or is it very specific to a task and only one week long?

18. **Construction and Duplication Ease:** If a program is difficult to construct or takes too long it may never be completed.

19. **Aide or Other Help:** Can the program be used by an aide? It would be helpful to know if an aide can use the program with minimal training and supervision.

20. **Parent Involvement:** How are the parents involved? Are ways provided for parents to follow-up at home? Can parents be involved directly with the program or conduct the program?

21. **Consideration of Media Center:** Is the program used continuously or is it used only once a year? Will all parts be used by the teacher or will she need access to the program for reference? Some programs would be better utilized if they were placed in the media center, as they could be purchased with funds other than the teacher's own budget and used as needed.

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materials, but the final test will be in whether
or not the program actually works.  This can
be determined only after use.  Before purchas-
ing materials, it would be wise to try them
out with students.  Media centers have many
programs which can be checked out for use on a
trial basis before final selection and purchases
are made.  Also, displays of instructional
materials at state teachers' conventions offer
an overview of many types of programs.  The rat-
ing sheets that comprise Figure 4.1 may be
used to summarize evaluative information con-
cerning published programs.

---

**Using Support Services**

Some handicapping conditions may   encountered
in the school for which the programmer is unable
to prescribe adequately.  It is, therefore,
necessary to become familiar with agencies and
individuals who can offer information or ser-
vices to aid these children.  Local school dis-
tricts and state boards of education have many
back-up services.  Private agencies also may be
able to provide assistance.  Directories listing
these agencies in specific geographic locations
are often available at school district offices.
Regional Resource Centers also have access to
names of supportive services which may be use-
ful.

As specific names of persons and agencies are
located, they may be placed on a chart similar
to the one in Figure 4.2.  This will provide
the user with a resource file of persons who
can be of help in special cases.

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PROGRAMMING:  Instructional Methods & Techniques

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**Guidelines for Implementing Methods and Techniques**

Instructional methods and techniques are tools
designed for educational programs.  More often
than not they are modified according to indi-
vidual needs of students and teachers, and to
the environment.  Methods are specific instruc-
tional skills that are not a function or a basis
of prescribed media.  Some commercial programs
have prescribed methods incorporated within
them.  Most methods can be used with a variety
of materials.  Some methods need no materials.

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Rated by_____  Date_____

1. What is primary in-put?

         visual           auditory           tactile/kinesthetic

         verbal           visual motor

2. What is the primary skill involved?

   Circle 1 as being primary and 2 and 3 as being supporting,
   with 3 as less supportive.

   |                    | Visual | Auditory |
   |--------------------|--------|----------|
   | association        | 1 2 3  | 1 2 3    |
   | attention          | 1 2 3  | 1 2 3    |
   | identification     | 1 2 3  | 1 2 3    |
   | discrimination     | 1 2 3  | 1 2 3    |
   | memory             | 1 2 3  | 1 2 3    |
   | sequencing         | 1 2 3  | 1 2 3    |
   | other_____,  | 1 2 3  | 1 2 3    |

3. Does it agree with philosophy (yes or no) of

   teacher_____school_____administration_____district_____

4. Interest

         high  1  2  3  4  5  low

5. Cost

   _____


Fig. 4.1

Program Rating Sheet


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6. Placement tests available

   Yes_____ No_____

7. Service (circle)

   durability:                high 1 2 3 4 5 low

   consumable materials               yes      no

8. Does new program match existing school hardware?

   Yes_____ No_____

9. Teacher expertise

   no training needed 1 2 3 4 5 training needed

10. Are directions simple enough to be followed by the student?

    Yes_____ No_____

11. Appropriate scope and sequence?

    Yes_____ No_____

12. Progress checks

    appropriate 1 2 3 4 5 inappropriate

13. Is the vocabulary level appropriate?

    Yes_____ No_____

14. Is the format clear and uncluttered?

    Yes_____ No_____

15. Number of students (circle)

         one-to-one          small group          classroom

16. Type of setting (circ

         classroom           isolated             carrel

17. Time (circle)

         day          week          month          year

         hours per day:    1/2          1          1-1/2

Fig. 4.1
(continued)

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18. Is the program easily constructed and duplicated?

    Yes_____No_____

19. Aide use

        high  1  2  3  4  5  low

20. Parent involvement

        high  1  2  3  4  5  low

21. Suggestions for purchase (circle)

        Individual classroom          Media center

Fig. 4.1
(continued)

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School
District
Region
State

| | hearing impairments |
| | vision impairments |
| | trainable MR |
| | educable MR |
| | severely MR |
| | learning disabled |
| | emotional disorders |
| | physical handicaps |
| | language & speech disorders |
| | medical services |
| | vocational guidance |
| | psychologist |
| | psychiatrist |
| | neurological impairment |
| | others |

Fig. 4.2

Cumulative Form for
Information on Community Support Services

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Techniques are specific behavioral management
schemes used in modification and/or adjustment
of given patterns of behavior. Thousands of
group and individual activities can evolve
from basic methods and techniques.

Listed below are some guidelines for implement-
ing methods and/or techniques:

1.  There are no magic solutions to children's
    specific difficulties. Several methods or
    techniques may be used before a child
    experiences success.
2.  Since children enjoy games presented with-
    out pressure, they are more likely to suc-
    ceed if activities are presented more as
    an adventure than through formal lessons.
3.  Methods, techniques, materials, and activ-
    ities should be selected to overcome a
    specific problem, not to serve as busywork.
4.  Children and teachers should be given a
    choice of what they want to be involved in
    --what they would enjoy and what they feel
    may help them.
5.  Don't let a technique or method lock in the
    programmer--be adaptable and creative for
    each child.
6.  Don't overuse techniques or methods in suc-
    cesses or failures; novelty may increase
    motivation for some children.
7.  Don't substitute new methods, techniques,
    or materials for those that a child really
    enjoys.

Before a new program is implemented for a child,
presently used methods, techniques, and materials
should be evaluated. Determine what is being
taught, at what level, through what method, and
how results are being measured. Textbooks,
manuals, and technical instructions used by the
child should be examined. Materials, methods,
and techniques may be appropriate for area(s)
of difficulty, but may be utilized incorrectly.
Possibly the existing program needs to be mod-
ified to be more effective. If existing tools
are found to be inappropriate for a child's
needs, then new tools need to be brought into
the program.

Effective methods and techniques can tie to-
gether all aspects of learning theory related

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to motivation, reinforcement, retention rate, and transfer. They need to relate to a student's modality and style of learning as well as his involvement and commitment to the task.

In Appendix E, several methods and techniques which have been found to be helpful by teachers are introduced. The materials selected through strategies in the previous section will be presented to the child in a manner which fits both the child's needs and the teacher's style and strengths.

In order to facilitate location of specific methods in this section, their titles are listed here.

1. Behavior Modification
2. Fernald Reading Method
3. Spalding Phonics Method
4. Gillingham Stillman (Orton) Phonics Method
5. Monroe Phonetic Method
6. Gates Reading Method
7. Stern Arithmetic Method
8. Lehtinen Perceptual Method
9. Barry Language Approach
10. Myklebust Language Approach

PROGRAMMING: Summary

Many alternatives have been suggested in this section. While the lists are by no means ex-haustive, it is hoped that they will offer a starting point for or an extension of the reader's repertoire of available resources. As more and more approaches are examined, the programmer will become more skilled in selec-tion of appropriate materials, thus decreasing trial-and-error selection.

Chapter Five

EVALUATION

Evaluation of educational intervention may be
compared to reading the instrument panel on a
boat.  The panel has indicators of depth pres-
sure, a gas gauge, a speedometer and a baro-
meter.  By looking at the panel, the captain
can see how things are functioning and can
make adjustments as needed to keep his ship
on course.  In a similar way, evaluation in
education indicates the "speed" at which a task
is moving, the depth of that task, and whether
or not progress toward a goal is being made.
Just as a boat could not operate efficiently
without an instrument panel, an educational
program cannot operate efficiently without
evaluation.

By carefull' determining evaluative strategies
before beginning a program, the instructor can
maintain direction in working with a child and
can make adjustments when progress slows below
expected rates.  Both short-term or ongoing
evaluation and long-term, final evaluation
need to be considered.  Weekly, daily, or
hourly evaluation keeps the educator's "ship"
on course and the long-term or final evaluation
determines whether the destination has in fact
been reached.

The demand for educators to be accountable in
their work with children is emphasized as never
before.  Concrete, observable movement is stres-
sed and program adjustment is expected when
positive movement does not occur.  This account-
ability shifts the responsibility for success
away from the child and onto the teacher, the
program, or both.  Many feel that this shift
was necessary because the teacher is in a bet-
ter position than the child to make changes.
Through careful evaluation, many of the failures
which children experience in nonappropriate
instructional situations may be avoided.

The following sections are included in this
chapter.

Evaluative Tools

This section describes several tools which can be
used in an individual evaluation plan for a child.

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instructional program. Testing, observing and
recording procedures, when paired with clear-
cut goals, objectives and teaching strategies,
can complete the systematic approach to educa-
tion as presented in this text.

Behavior Measurement

Use of behavioral graphing and measurement
techniques are described in detail. Various
approaches to counting behavior are defined and
evaluated.

EVALUATION: Evaluative Tools

Tool #1 -
Testing for
Evaluation

Testing for evaluation is based on the educa-
tional prescription and results are compared
to the original baseline information. From
the prescription comes the behavioral or
instructional objective. Within that objective
are the performance criteria: task, acceptable
accuracy, and time schedule. From the baseline
or original data gathered from screening and
diagnosis, the performance level of the task
before intervention is derived. (It is by
comparison of the original performance with the
present performance that progress or the lack
of progress can be assessed.) Therefore, if
testing is to be the tool for evaluation a
"test" must be designed and administered before
the intervention.

In some cases--if diagnosis has included
several tests with a standard score and the
test does allow for readministration--the
evaluative test is already established. This
method can be used to evaluate long-term or
terminal objectives. When using an overall
profile, assessment may be administered at the
beginning, the middle, or the end of the year.

In most cases evaluation and accountability
are desirable while the program is in progress.
Then if adjustments are needed they can be
made before much time is lost. Because testing
for evaluation occurs frequently and is directly
related to a specific criteria a brief test is the
best test. It should be brief in number
of items and scope. When a more precise evalua-
tion is needed

Test Making Procedure

1. Decide what is to be tested. This is the immediate instructional objective or steps of the objective subject to instruction.
2. Decide the time table for administration of the test. Tests can be administered twice daily, daily, weekly, monthly or whenever it is most appropriate for the objective and schedule. The time schedule limits the objective portion to be taught and dictates number 3.
3. Decide what and how many items would most effectively measure the objective. Only the items that have been the target of instruction should be tested. The number may vary. If only five things have been taught, for instance, they can be presented a number of times so that the total test item number is 15 or 20.
4. Decide the mode of test administration and test response. The test may have an oral, written or a demonstration demand. The responses may be:

   Oral response

   Give a full essay-type answer
   Complete a sentence
   Make a choice from alternatives
   Read a list
   Explain an action or word

   Written response

   Write an essay
   Fill in the blank
   Make a choice from a multiple list
   Match items
   Draw an answer
   Copy

   Motor response

   Follow a verbal command
   Demonstrate a picture of an object
       or an action
   Judge a demonstration

5. Decide the criteria for a successful or acceptable performance. This includes the length of time allowable, the acceptable accuracy and how accuracy is assessed. One example of a test using these decisions is in the case of Harry, whose instructional objective stated: "Harry will read 15 words from the total Dolch sight word list each week with 85 percent accuracy."

> What: The Dolch Sight words
> Timetable: At least weekly (the teachers may decide to make a daily check as well)
> What and How Many Items: The 15 words given each week
> Mode: Demand: word list shown
>             Response: read list
> Criteria: Time allowed: Fifteen minutes or one word per minute, with thirteen or more words read correctly.

Harry can now be tested weekly in the same uniform manner. At the beginning of each intervention series the teacher should give a test so that the results can be compared or the program changed if progress is not made.

If Harry had scored 2 on the pre-test, then a score of 13 on the post-test evaluation shows a great deal of progress and success for the method of instruction and the child. Or if on the pre-test Harry scored 15, the criteria was already met and the correct words could be eliminated from the instructional sequence.

Use of Results

An evaluative test, if constructed to performance criteria, tells how valid the criterion and objective are for the child at the time of evaluation.

Validity can be indicated in several ways. The program is valid if:

> the objective has been met or progress has been made; the program sequence should be continued if progress has been made.

The student should progress to a new objective if the previous one has been met.

The program is invalid if:

the "behavior" is below the baseline; if the "behavior," having risen above the baseline, has started to plunge downward.

Determining the reason for the lack of loss of progress helps decide the next course of action. This determination is made by the instructor based on clues observed throughout the intervention.

The objective should be dropped if:

the objective is too difficult; if prerequisite skills need to be learned first; if the objective proves unimportant; or if the student has lost interest or cannot be motivated.

The objective should be reconstructed if the program sequence is correct but the instructional or reinforcement schedule is not successful.

The objective should be reevaluated if:

there is no observable progress, or materials and/or activities that are appropriate are not available.

---

Tool #2
Program
Monitoring

In many cases daily or weekly testing is unrealistic. The teacher's day, in most cases, would have to be twice as long if each child were evaluated on that basis. An alternative is a program monitoring system that requires a tallying of some sort for each intervention and dates or program points that have been chosen for testing evaluation. However, use of these procedures puts a demand on programming. The task to be taught has to be task analyzed and the task sequence followed exactly.

Programmed learning, requiring a written response as the child works independently, is an example of built-in monitoring. Another

method of daily monitoring is a daily anecdotal
record. This is most appropriate for a behav-
ioral objective of reducing inappropriate
behavior such as fighting, thumb sucking, or
fantasizing.

Anecdotal records can prove to be very valuable.
Incidental information may provide a clue to
an instructional or behavioral problem. Often
an interaction will occur and not be recorded
   ly to have the significance become apparent
later. When that happens the exact sequence of
events, the time and the effects of the events
 re not quite as clear.

When monitoring a child who is not accepted
socially by his peers, spending three minutes
a day evaluating his behavior could prove in-
valuable. One word jotted down throughout the
day as events occur may trigger the memory  r
the evaluation period. Events should be
recorded daily whether they appear significant
at that time or not.

Example: Barbara did not associate with her
classmates. Initial baseline data obtained
during a three-hour period on three occasions
indicated Barbara did not at one time talk to
her classmates or play with them. During each
observational period she was approached at
least once by one of her classmates. Although
it appeared there was no information to record,
the teacher kept anecdotal records. Three
weeks later another observational account was
made.

Barbara played on the outskirts of the group
but responded with laughter when the group did.
What caused the gradual change? The teacher
checked the anecdotal records for some con-
sistent clue. One boy, Mark, had talked to
Barbara each day, but she had not responded to
him directly. The teacher, however, placed
Mark next to Barbara, sent them on errands
together, and allowed time for interaction.
The next observation account showed Barbara was
taking more interest in the group and talking
occasionally to Mark.

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Anecdotal records supplied Barbara's teacher with valuable information. She made an assumption from that information and adjusted Barbara's situation. If the adjustment had not proven successful, further anecdotal information and investigation would have been necessary.

Although program monitoring alleviates the necessity for frequent test evaluation it does not eliminate that procedure. The testing tool provides a solid base with which to compare baseline data.

---

**Tool #3**
**Observation**

Evaluative observation should begin in the educational treatment process at the same time as screening and diagnosis. A baseline of behavior is obtained. A baseline is a record of a behavior's frequency, duration or nature before an intervention or remediation. It gives a base with which to compare later observation. A post-observation would indicate little without that base of comparison.

Example: Charles was observed in the classroom in March. In September Charles' teacher had reported that Charles was constantly moving and out of his seat. The teacher had begun working in October on keeping Charles seated. The March observation revealed that during a three-hour period Charles was out of his seat four times (frequency) for a total time of fifteen minutes (duration). This information was useful to the teacher because she could compare it to the baseline obtained in October. (During October, Charles' average time out-of-seat for three hours was 26 times for a total time of 1 hour and 44 minutes.) Out-of-seat movement had decreased.
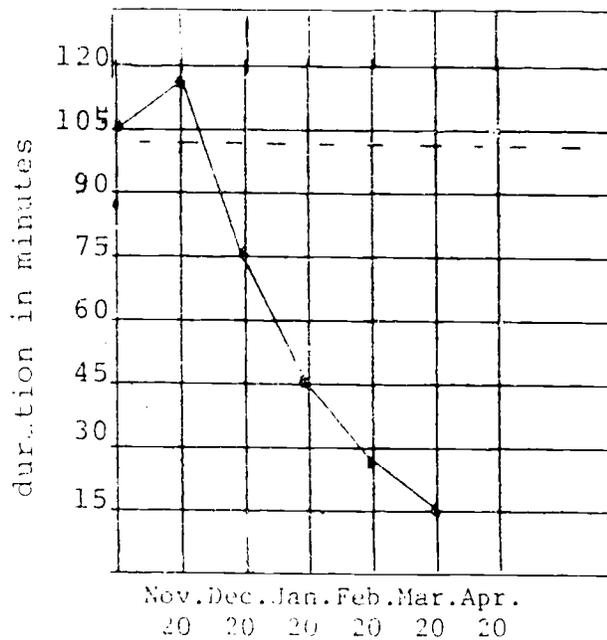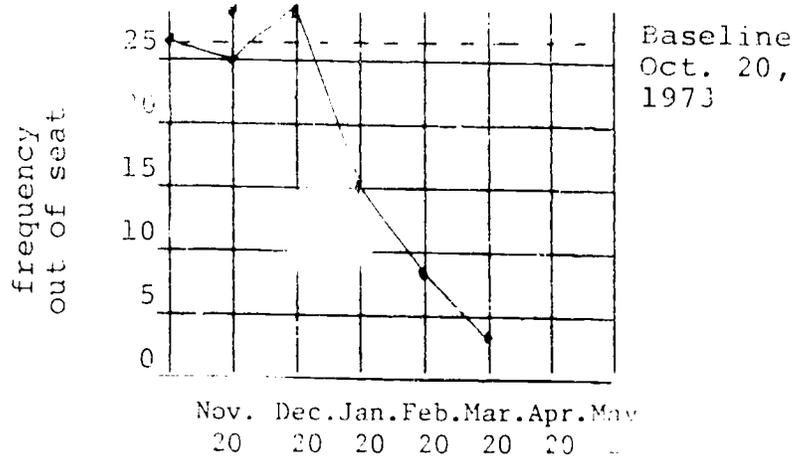
Making a base_tine involves the following steps:

1. Determine the program objective (in this case, reduce out-of-seat behavior).
2. Observe for frequency and/or duration.
3. Make three separate observations and find the mean performance of these three. (Charles' teacher observed Charles for three days in October. He was out of his seat 26 times the first day, 27 the second,

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and 26 the third.  A mean of 26 was estab-
lished.  At the same time she kept track of
durations.)
4.  Record the mean and the method of obtaining
    that mean.
5.  Make a baseline statement and graphs for
    reporting changes observed.

Charles' graphs might be made like this:



Baseline
Oct. 20,
1973

frequency
out of seat

25
20
15
10
5
0

Nov.  Dec.Jan.Feb.Mar.Apr.May
20    20  20  20  20  20



duration in minutes

120
105
90
75
60
45
30
15

Nov.Dec.Jan.Feb.Mar.Apr.
20   20  20  20  20  20

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Note that Charles' baseline is indicated by a
dotted line at the beginning of the graphs.
The line is continued across the graph for
each reference.

## Evaluating Observation

When evaluating for progress, two procedures
should be followed.  First, the same situation
--such as in the classroom or on the playground
--and a similar time sample should be used.
Secondly, the same observational procedure
should be used.  If frequency was tallied, it
should be tallied again.  Each procedure should
be plotted on a designated graph.

Evaluate the flow of the plotted line and com-
pare each mark to the baseline.  The line may
indicate frequency or duration of a behavior.
It would be desirable for the flow to move
above the baseline if an increase in behavior
is the program objective.  Conversely, it would
be desirable for the line to flow below the
baseline if a decrease in behavior is the pro-
gram objective.

> When the flow of the graph is moving in the
> desired direction (decreasing or increasing
> target behavior) the intervention should be
> continued.

> When the flow of the graph moves negatively
> above the baseline or below the baseline
> opposite of desired behavior, the inter-
> vention or program should be investigated
> and most likely altered.

> When the flow of the graph is static or
> nonmoving, the intervention should be
> altered.

> When the behavior is plotted at zero or at
> the desired number, the program may be
> discontinued or a program for maintaining
> the new behavior may be initiated.

Methods of charting observations are more
thoroughly discussed in the next section, Behav-
ior Measurement.  However, because behavior
measurement is the fourth tool of evaluation,

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the following brief outline of the types of
measurements that may be used is included in
th.. section. Following the outline is Figure
5.1 a chart on methods of behavior measurement.

Tool #4
Behavior
Measurement

1. Frequency counts noncontinuous behavior and
   is used for behavior ratings. A graph form
   should be used. Frequency counts are help-
   ful for observational evaluation.

2. Rate counts for the frequency of a behavior
   within a time period. A graph recording
   form should be used; divide the frequency
   by the time. Rate is helpful for both
   observational and testing evaluation.

3. Percentage counts percent of correct and/
   or incorrect items for a comple'ed test.
   Again a graph should be used for this
   measure. Divide the number of correct
   items by the total number of items and
   multiply by 100. Percentage is helpful for
   observational and testing evaluation.

4. Duration counts the length of time behavior
   occurs within a time frame. A graph may
   be used to record the information. Divide
   the total time observed into the times the
   target behavior occurred and multiply by
   100. Duration is helpful for observational
   evaluation.

EVALUATION: Behavior Measurement

The Graph

Education, particularly special education
is in an era of accountability. No longer can
a program be assessed by descriptions of a good
year or a bad year, but data must be available
to validate those statements.

In the past, frequency, duration, rate and
other such terms have had a clinical connota-
tion. Collecting and compiling this type of
information was thought to be too time consuming
as well as unhelpful for a teacher. An under-
standing of the application of these measure-
ment techniques has shown their value for all
teachers. The measurements are valuable because

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| | frequency | rate | percentage | duration |
|---|---|---|---|---|
| what | counts noncontinuous behavior | counts when behavior occurs (frequently) within time period | counts percent of accuracy of completed task | counts the length of time a behavior occurs within a time frame |
| time sampling method | tally | fixed time | tally | fixed time or tally |
| time period | select for minute, hour, day | short period of time directed to sample | select according to when task is to be accomplished | begin time when behavior begins; randomly check for behavior |
| how | count frequency | count frequency in elapsed time | count number correct; count total | determine time observed and determine length of time of behavior |
| record by | mark frequency of behavior | divide frequency by time | divide correct behavior by total behavior; miltiply by 100 | divide elapsed time into target time; multiply by 100 |
| use to | count number of times out of seat, fighting, reversals, errors in computation, etc. | measure speed in writing, reading, speaking, calculating | measure accuracy of mathematic problems, reading sounds, etc. | measure length of appropriate or inappropriate behavior, e.g., thumbsucking, rocking, preseveration |
| examples | Frank has been ripping up his papers throughout the day. His baseline for this behavior is 15 times per day. The teacher would like to decrease this to zero. Frank is helping with the recording. | Merrill does not know his initial consonants. His instructional objective is to be able to read aloud 26 consonant symbols within a one-minute period. For a progress check, his number of responses is recorded for a one-minute period daily. | Tom's terminal instructional objective states that he must complete 20 addition problems with an 80% accuracy. His baseline accuracy was 10%. His daily score is recorded. | Susan rocks in her chair. Her baseline had her rocking behavior at 11 minutes out of 15. Her behavioral objective is that her rocking behavior shall decrease to no more than 2 minutes of each observed 15-minute period. |

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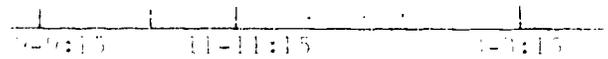Fig. 5.1

Methods of Behavior Measurement

they provide necessary data for teachers to
confirm the validity of their program.

The key tool for measurement is a graph.  A
graph has two axes:  the horizontal axis
usually indicates the time over which the record-
ing is made.  The time is measured by days,
weeks, months or by various interval schedules.
For example:

days

Nov.        5       7       9      11      13

15-minute time periods during a day

9-9:15          11-11:15                1-1:15

number of observation per day

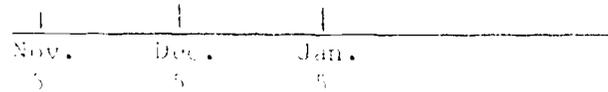Nov. 5 Ob.      1       2       3       4       5       6

week

Nov. 5      12      19

months

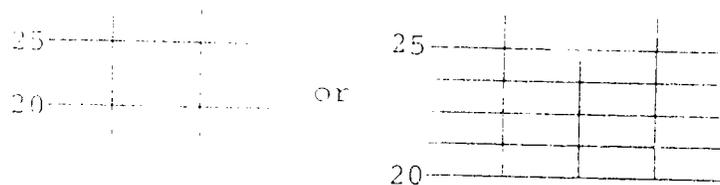Nov.      Dec.      Jan.
  5         5        5
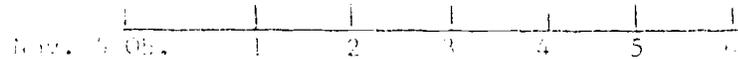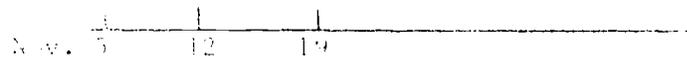
The time frame is selected according to the
purpose of the graph. One limitation is neces-
sary: the intervals should be equal time
frames. Days should not be changed to minutes
or to weeks. Without equal intervals the graph-
ic representation would be distorted.

The vertical axis indicates the unit, quantity
or quality being measured. Behavioral objec-
tives call for an increase or decrease of the
behavior and the movement naturally rises or
falls. Numbering of the vertical axis can vary
but it need not be difficult. Taking one
numbering system and altering it according to
the measurement goals is suggested. Always
put the lowest number at the point where the
vertical axis meets the horizontal axis.

```
        2
        1
        0 _____
```

The movement of a plotted graph may be up or
down. If Frank is calling out 25 times a day,
the movement from 25 down to 5 is a welcomed
movement. Intervals between these numbers may
be marked or estimated. For example, 24 may
be plotted

```
  25----+-----+---             25----+-----+----
                        or          ----+-----+----
  20----+-----+---                  ----+-----+----
                                    ----+-----+----
                               20----+-----+----
```

Alteration to the basic system is made by chang-
ing the unit numbers from one's, to ten's, or
to hundred's.

Units of One: Troy will do ten addition prob-
lems in a one-hour period (baseline 2).

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```
10
 9
 8
 7
 6
 5
 4
 3
 2
 1
 0
      Nov
       7      8      9     10
```
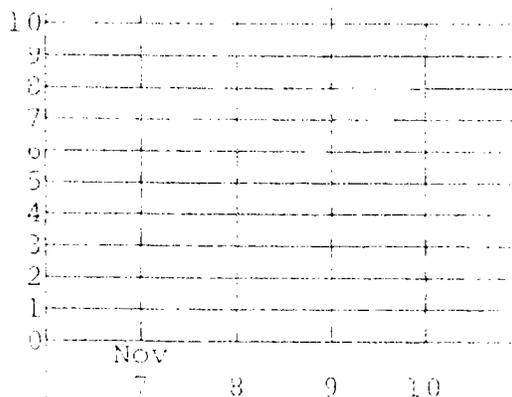
There are several restricting factors about
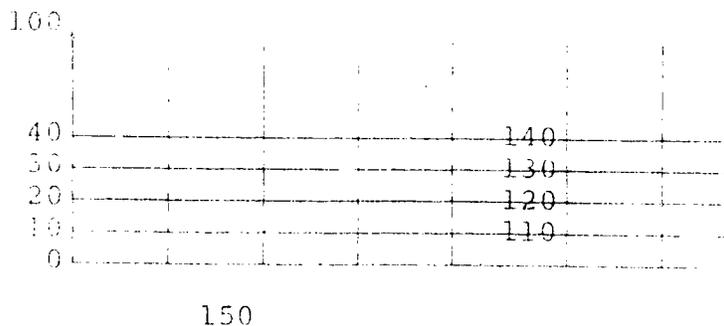this method.  For one, the steps are gross.
If a teacher wants to plot a decrease of 36
units, an increase of 36 units, or a slow pro-
gress task, it would be difficult to visualize.
Secondly, 10 or 100 may be a goal that is sur-
passed; it would be difficult to graph that
achievement by units of one.

Both problems can be eliminated by making each
graph as simple as possible and renumbering
when limits have been reached.  An increase
from 0 to 36 might look like this

```
10              20              30

                13              23
                12              22
                11              21
 0
```
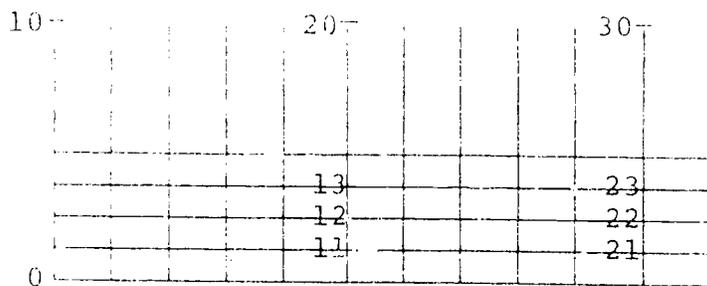
and an achievement over 100 may be graphed like
this

```
100

 40                    140
 30                    130
 20                    120
 10                    110
  0
```

150

...her and ... to ... initiate ... The graph has not been confusing for the teacher. It may actually be more motivating for ... to see progress recorded, ...

... listing ... recording ... the reporting date. As with ... recording ... into this chart ... To plot a graph, first the time and date is set, then the number of percent of that behavior is found. Where these two points ... set is the plotting point for one time interval ... on March 13, ... recorded 75 percent ... ...
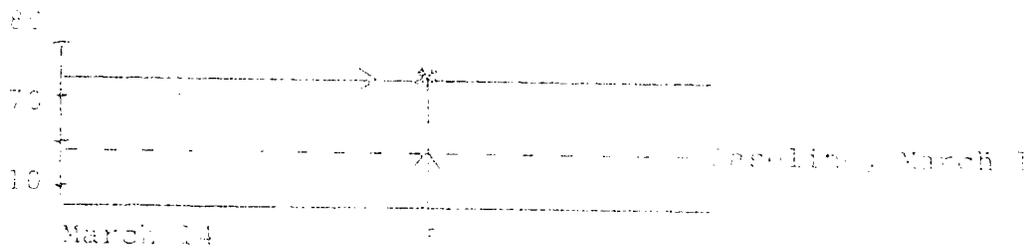


March 14

Also, note ... baseline ... ... the graph to ... the data ...

All this example ... what part ... the importance of accountability in ... sample case is described.

Rich, a third-grade boy, is reading on a first-grade level. When he starts ... task he will look around, get up and wander out of the room. The longest recorded time he has spent on a task is three and one-half minutes. In addition, when he is called on he makes a choking cough. His baseline frequency for coughing is 19 times in 15 minutes. Consequently, the quality of his work is affected. He reads at a rate of ten words per minute. As he reads he loses his place and forgets what he has read. His written assignments have not exceeded a 10 percent accuracy level. Diagnostic information reveals that he is not intellectually limited and does not have a perceptual problem. There is, in fact, no known reason why he cannot read at grade level. He could

attend to instruction. [illegible] a particular [illegible]tion, extreme [illegible] [illegible] were made. The terminal objective [illegible] [illegible] was to read and comprehend [illegible] [illegible] [illegible] by end of the year.

The special [illegible] teacher [illegible] wanted to get [illegible] to meet the terminal objective for Rich. She pushed hard to bring Rich's reading up to grade level. Each day she presented sight words and when he answered correctly she would give him free time. Feeling good about her efforts, she reached the end of the year and needed to write evaluations. Her evaluation read as follows:

> "Rich did a good job this year and made a great deal of improvement. I tried giving him free time whenever he learned his sight words. He seems to enjoy it very much. Most of the time he tried to stay in his seat. Sometimes he did sit for a long time. There were days he did not cough very much. Rick will probably be able to read in the second-grade reader.

What does his fourth grade teacher know? How did the program work? What interventions worked? Which did not work? How much reading progress did he make? Where should instruction begin? How accurate was his work?

These questions could be continued endlessly. How will the teachers words be weighted? Even more importantly, just how much was Rich taught and how much did he learn?

A more effective approach would be to take the terminal objective: "Rick will read and comprehend at grade level (by the end of the year.)" To [illegible] that goal reachable requires "enabling objectives." Before he can learn he must attend and [illegible] [illegible] destructive behaviors receive first priority.

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

what he read.
Rich will read at a rate of 90
words per minute.

3. Rich never exceeds 25 percent accuracy
in his work.
Rich will read a presented word list
with an 85 percent accuracy.

4. The longest Rich can stick to a task
is for 1-1/2 minutes.
Rich will attend to his reading
tasks for a duration of 15 minutes.

These are four difficult enabling objectives.
A more specific evaluation of Rich's progress
appears following the explanatory information
on frequency, rate, percentage and duration.

---

**Methods of Measuring Behavior**

1. Frequency

Frequency counts noncontinuous behavior; it is
the number of times that behavior occurs within
a time period (refer to Figure 5.1). The
behavior is counted by a simple tally. Tally-
ing does not have to be elaborate. A teacher
can make the tally while conducting a class.
However, the count should be made within a
selected time period designated by minutes,
hours, or days. At a convenient time the number
should be recorded on an instrument or graph.

How: Decide time; count behavior; record number
of times.

Width:                          The vertical axis
                                measures a quantity
                                change.

Rich's teacher chose this method of measuring
the frequency of his cough. She wanted to
decrease the number from 15 to no more than 5
in a 15-minute period. First, she decided the
program strategy and then developed the chart-
ing procedure.

Time period: 15 minutes each day
How: Tally coughs
Program: For first minutes ... group ...
    will compliment Rich ... ... ...
    teacher will avoid ...
    coughing occurs.


        Baseline ...



A downward trend on Rich's coughs would be
desirable. Also, when he reaches the criteria,
the graph would be renumbered as explained on
page 149.

Frequency counts a behavior and records the
number within a length of time previously deter-
mined. The recording of frequency can be done
on a random-time sampling schedule if the
behavior occurs with a high frequency. The
length of time still remains stable.

3. Rate

The rate of a behavior is the average number of
times a behavior occurs within a time period.
Rate must first be tallied as in a frequency
count. To simplify the procedure the count
should be made within a short time period.
Rate measurement has based objectives: the
number of words read per minute, the number of
times a child attends to a task in a minute,
the number of yards run per minute, etc.
Objectives are measured in a fixed time period.
... ...
Then to find the rate, frequency ... divided ...
... ...

$$\frac{\text{number of behaviors}}{\text{elapsed time}} = \text{RATE}$$

GRAPH:

The vertical axis measures a fixed proportion change.
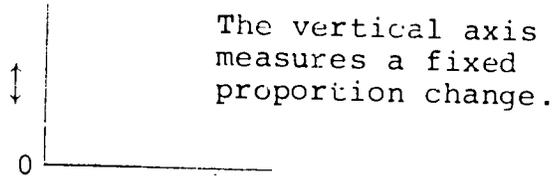
For convenience, the teacher might use an inter-mediate step before plotting a graph. Rich reads so slowly (10 words per minute) he loses his place and forgets what he reads. His teacher decided to first increase his reading rate and then work on comprehension. Her objective was to increase his rate to 90 words per minute. The program strategy is designed, a chart and a graph made to plot the results.

PROGRAM: Present a page with a race car or horse at top. Use stop watch. If speed increas-es, the picture is given as a reinforcement.

CHART:

| DATE | | NUMBER OF WORDS | | RATE PER MINUTE |
|------|--|-----------------|--|-----------------|
| Dec. 7 | Book E-Pg.1 | | 3 min. | 12 words |
| Dec. 8 | | | | |

TIME: A daily count is appropriate

GRAPH:

```
14 |    |   '    |
13 |    |        |
12 |    |        |
11 |    |        |
10 |____|____|___|
   | Dec
     7   8   9
```
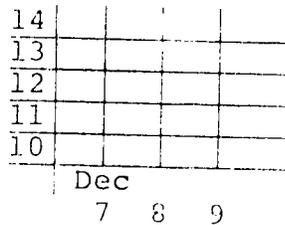
Rich's chart gives the program information and the pertinent data to find the rate. The graph

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demonstrates visually the increase. Notice that the numbering of the vertical axis begins at the baseline. Rich's teacher decided that a below-baseline score would be marked at the baseline so Rich would not be discouraged.

3. Percentage

A percentage-correct score reflects the percentage of a 100 percent maximum. For an academic task or behavioral observation, it measures the percent of time an appropriate or an inappropriate behavior occurs.

To measure percentage, the frequency of the correct behavior is counted and the total "behavior" is counted. For example, a math problem sheet has 18 problems and a student solved 10 of them accurately (the correct number).

The incorrect number is found by subtraction. The percentage of correct responses is found by dividing the correct behavior (10) by the total behavior (18) and multiplying the result by 100. The percentage of correctly solved problems is 55 percent: $\frac{10}{18}$ = .55 x 100 = 55%.

Another example: A child is on-task 7 minutes (correct number) out of 10 minutes (total number). He has appropriate behavior 70 percent of his class time. $\frac{7}{10}$ = .70 x 100 = 70%.

HOW: Select a time; count correct behavior; count total behavior.

$$\frac{\text{correct behavior}}{\text{total behavior}} = \boxed{.\underline{\quad}} \times 100 = \text{percent}$$

GRAPH: The vertical axis measures the "value" of the behavior on a scale of 0 to 100.

```
100

  0 |_____
```
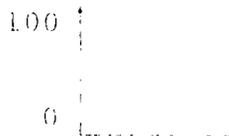
Rich has never exceeded 25 percent accuracy in his work. His teacher decided a program strategy

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to increase the percentage of accuracy in one
reading assignment and plotted a graph for that
purpose. A check every three days was the
selected time period.


PROGRAM:

```
30 ┤─────┼─────┼─────┼─────
25 ┤─────┼─────┼─────┼───── baseline
20 ┤─────┼─────┼─────┼─────
15 ┤─────┼─────┼─────┼─────
10 ┤─────┼─────┼─────┼─────
 5 ┤─────┼─────┼─────┼─────
 0 ┴─────┴─────┴─────┴─────
      Mon    Wed    Fri
       3      6      9
```
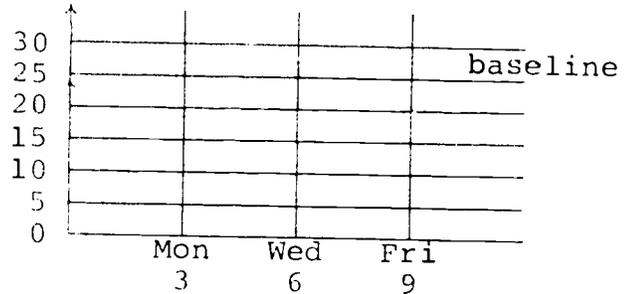
A percentage measurement records the relative
amount of correct behavior.

## 4.  Duration

Duration measures the length of time a con-
tinu us type of behavior occurs when it occurs
infrequently. Similar to a percentage measure-
ment, it is obtained by dividing the tallied
target behavior by the total elapsed time and
multiplying by 100 to get percent of duration
of the continuous behavior. A stop watch is
necessary. A time period of observation is
selected (15 minutes on Monday and Friday after-
noon between 2 and 2:15). When the behavior
begins, the stop watch is started. This measure-
ment is particularly valuable for measuring the
decrease in duration of thumbsucking, rocking
and the perseverance of behaviors.

HOW:  Select time frame,    k length of behav-
ior; tally total time.

$$\frac{\text{total duration of behavior}}{\text{total time}} = \boxed{\quad .\quad} \; x \; 100 = \text{duration}$$

GRAPH:  The vertical axis measures length of
time (minutes) or percent of time of an infre-
quent behavior.

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167

0

Rich's attention to a task is baselined at
3-1/2 minutes.  His teacher would like to
increase this to 15 minutes.  Since attendance
to a task happens so infrequently a duration
measurement is made primarily for the number
of minutes Rich spent at a task.

An observation time and a program strategy were
selected.  Fifteen minutes was decided upon as
the fixed total time of observation.  Rich was
to be observed daily.

Time in Minutes

STRATEGY

4
3  ─ ─ ─ ─ ─  Baseline
2
1
0
Nov.1  2  3  4

Percentage of Duration

25
20  ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ Baseline
15
10
5
0
Nov.  1  2  3  4

1 8
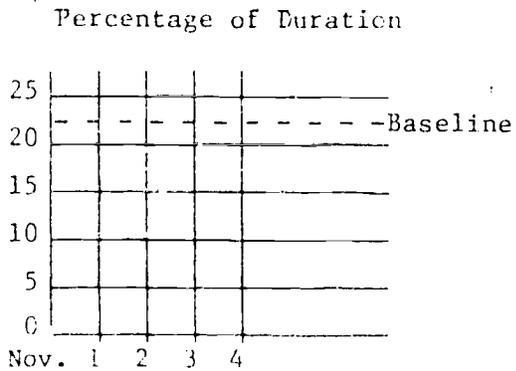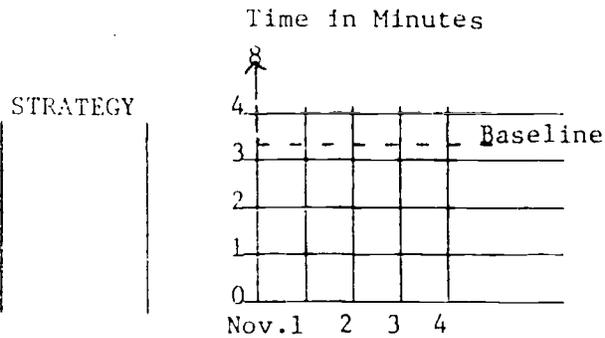
The first day of observation Rich did not sit
at his desk. After the teacher had him clock
his own time his attention to task time
increased. He kept the "time in minutes"
graph; the teacher kept the "percent" graph.

With continuous monitoring, Rich's teacher was
able to change his program as needed and still
maintain consistent measurement. Now the
teacher could write an evaluation that contained
meaningful information:

> Rich's goal this year was to read on third-
> grade level. He entered the third grade
> with a 1.2 grade level score on the S.A.T.
> On May 30th, Rich was reading at a 2.4
> level according to form F of the S.A.T.
> He completed book "D" of the school's
> basal series. His coughing behavior--which
> originally occurred 19 times for every 15
> minutes--decreased to zero. He has not
> had a coughing spell since March 12th.
> His reading rate increased from 10 words
> per minute to 100 words per minute. He
> presently maintains a 60 percent accuracy
> in reading. He will sit and work on writ-
> ten tasks up to 11 minutes for any one
> task. The programs and strategies used . . .

5. Program Monitoring

Program monitoring as discussed in the previous
section is a step toward more accurate measure-
ment. When monitoring a system, accuracy and
frequency become inherent measures.

Another method of monitoring is also included.
Each child's name is recorded on the form along
with his program objectives; other children are
included on the same form. Each school calen-
dar day is entered. After a session with the
children, the teacher records a code for each
child. The code includes the type of interven-
tion and the child's achievement, which could
be completion or accuracy. Figure 5.2 is a
form which may be used in graphing program
monitored data. Example codes follow the form,
and a sample of a completed form is also
included.

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| NAME | DATES | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | INTERVENTION | | | | | | | | | | | | |
| | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| NAME | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| NAME | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| NAME | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| NAME | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |
| | DATES | | | | | | | | | | | | |
| | INTERVENTION | | | | | | | | | | | | |

Fig. 5.2a

Program Monitoring Chart

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<u>Intervention Code</u> (recorded above slash)

T   Task sequence. Given a well-sequenced task this is a
quick reference. John may be on $T_1$ and Jill on $T_2$. The
number of days to complete a sequence is recorded.

D   Diagnosis

I   Interview

B   Begin instruction - on introduction

✓   Progress check

Tu   Tutor or aide taught on a one-to-one basis

RT   Reteach lesson

X   Dropped task

☆   Completed task sequence

<u>Child's Code</u> (recorded below slash)

+   Task completed

1/2   Fraction of task completed

  Percentage of accuracy

R   Refusal to do the task

F   Frustration—behaviorally the child started—restarted—
complained—ripped paper, etc.

A   Absent

DT   No described task

Fig. 5.2b
Monitoring Chart Codes

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/

Tom

Will read
3 pages
per day

| DATES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | D / ST | D / ST | B / ☆ | T₁ / ½ | T₁ / ½ | ✓ / 85% | T₂ / A | T₃ / ⅓ | T₃ RT / ST | |
| INTERVENTION | | | | | | | | | | |

This would be interpreted as follows: On the first two days (October 1
and October 2) Tom was given a diganostic battery and did his described
task. On the third day (October 3) an instruction series was started
and Tom completed the task. Next the task analyzed sequence began.
Tom completed 1/2 of the test in the next two days. Then on the 8th
he was given a progress check and obtained an 85% accuracy. On October
10, Tom completed 1/3 of the performance objective, on the 11th, he
refused to read at all and on the 12th he was back on task.

Fig. 5.2c

An example of a coded monitoring chart

The tools of evaluation and skills of behavior
measurement offer data for accountability.
Programming must be monitored and evaluated
often enough to insure that progress is indeed
being made. If an adequate program is written
with built-in checks, daily lesson plans are
more likely to fall into place, and final
evaluation is simplified as data are available
to be summarized.

BIBLIOGRAPHY

Allen and Cross. Suggested Basic Materials for Slow-Learning
    Children. Columbus, Ohio: Ohio State Department of
    Education.

Barry, H. Training the young aphasic child. The Volta Review,
    1960, 7, 326-328.

Barry, H. The Young Aphasic Child. Washington: Alexander
    Graham Bell Association for the Deaf, 1961.

Bartel, Nettie R. and Hammill, Donald D. Teaching Children
    With Learning Problems: A Handbook for Teachers.
    Philadelphia: Temple University, 1971.

Bernstein, Bebe. Everyday Problems & the Child With Learning
    difficulties. New York: The John Day Company, 1967.

Berry, Mildred Freburg. Language Disorders of Children. New
    York: Appleton-Century-Crofts, 1969.

Bloom, Benjamin S. (ed.) Taxonomy of Educational Objectives:
    The Classification of Educational Goals. Handbook 1.
    Cognitive Domain. New York: David McKay, 1956.

Bond, Guy L., and Tinker, Miles A. Reading Difficulties:
    Their Diagnosis and Correction. 2nd ed., New York:
    Meredith Publishing Company, 1967.

Bower, Eli M. Early Identification of Emotionally Handicapped
    Children in School. Illinois: Charles C. Thomas,
    Publisher, 1969.

Cratty, Bryant J. Active Learning: Games to Enhance Academic
    Abilities. Englewood Cliff, New Jersey: Prentice-Hall,
    Inc., 1971.

[illegible entry]

[illegible entry]

[illegible entry]

Arnold, R. Remedial Techniques in Basic School Subjects.
New York: McGraw Hill, 194?.

___man, Gerald and Kane, Elmer. The Physiology of Readiness:
An Action ___ for the Development of Perce___ for
Children. 1?

Gillingham, A. and ___lman, B.W. Remedial Training ___ hildren
with Specific Disability in Reading, Spelling, and Penman-
ship. New York: Hackett Wilheim, 1968.

Hammill, Donald D. and Myers, Patricia I. Methods for Learning
Disorders. New York: John Wiley and Sons, Inc., 1969.

Ilg, Frances L., Ames, Louise Bates. School Readiness - Behavior
Tests Used at the Gesell Institute. New York: Harper
& Row, 19__.

Johnson, Doris J. and Myklebust, Helmer. Learning Disabilities:
Educational Principles and Practices. New York and
London: Grune and Stratton Pub., 1967.

Spache, George, and Spache, Evelyn J. Reading and Learning
Disabilities. Columbus, Ohio: Charles E. Merrill
Publishing Co., ___.

___, Doris P. Helping Young Children ___ op Language Skills:
a Book of Activities. Washington, D.C.: Council for
Exceptional Children, 19__.

Otto, Wayne, and Koenke, Earl.  Remedial Teaching: Research
     and Comment.  New York:  Houghton Mifflin Co., 1969.

Stellern, John and Vasa, Stanley F.  A Primer of Diagnostic-
     Prescriptive Teaching and Programming.  Wyoming:  Center
     for Research, Service and Publication, College of Edu-
     cation, University of Wyoming, 1973.

Stern, C.  Children Discover Arithmetic.  New York:  Harper,
     1949.

The Early Identification of Exceptional Children, Office of
     Superintendent of Public Instruction, State of Illinois,
     1971.

Tiedt, Sidney, W. and Tiedt, Iris M.  Elementary Teacher's
     Complete Ideas Handbook.  Englewood Cliffs, New Jersey:
     Prentice-Hall, Inc., 1967.

"Two Heads are Better Than One."  Salt Lake City:  U-SAIL
     Project, 1972.

Valett, Robert E.  The Remediation of Learning Disabilities.
     California:  Fearon Press, Pub., 1967.

Wagner, Hosier, and Others.  Educational Games and Activities:
     A Sourcebook for Parents and Teachers.  Darien, Conn.:
     Teacher's Publishing Corporation, 1967.

APPENDIX A

Systematic Observation of Behavior:
Glossary of Items

1. Information
2. Questions
3. Instructional device
4. Control
5. Affective
6. Participation
7. Response
8. Self-involved
9. Other-involved
10. Miscellaneous

1. __Information__: Presentation of information content for use or consideration by another person.

   AMP: __Amplification__: A continuation or expansion of a previous response given by another. Example: (a) "Automobiles are the main form of transportation in the Midwest." (b) "Yes, and they are probably the major form in the entire country."

   GA: __Gives Answer__: Information produced as response to previously asked question. Example: (a) "What time is it?" (b) "Three o'clock."

   I: __Information__: Presentation of verbal stimulus of data content for use or processing by another person. Example: (a) "Gasoline prices are rising steadily."

   NC: __Not Correct__: Evaluation of a given response as inappropriate or unacceptable. Example: (a) "That word is 'cat'." (b) "That's not right."

   O: __Orientation__: Placement of a current task or situation into context by reference to past or future activities. Example: (a) "Yesterday we discovered that there are 'remainders" in subtraction, so today we will use that remainder."

   S: __Symbolic Information__: Nonverbal graphic-pictorial or auditory stimulus available for processing. Example: Geometric forms on a workbook page; gross auditory units in sound-vocalization exercises; music.

2. __Questions__: Attempt to solicit information from another source.

   DYK: __Do You Know?__: Approach to release subject from further questioning about a given topic, when expected answer is apparently unknown. Example: (a) (after extensive prompting in pursuit of a specific answer) "Well, do you know what it is, or not?"

GAT: Giving Answer (in question form): Information produced as response to previously stated question. Example: (a) "This is a pen, isn't it?"

Q: Question: Verbalized statement in interrogative form. Example: (a) "You will finish before lunch?"

QA: Question about Activity: Question containing basic elements or indications of desire to be engaged in specific task. Example: (a) "Can I do this?", or "Can we go to recess?"

QC: Question/Cognition: A question requiring immediate recognition or general comprehensive awareness. Example: (a) "What color is this book?"

QCD: Question/Can Do: Question requiring evaluation of ability to perform in relation to given task re-quirement. Example: (a) "Can you do this problem?" or "Do you understand how to do this now?"

QCL: Question with Clues: Question that includes sup-portive prompting as to terminal or expected re-sponse. Example: (a) "Can you think of an animal whose name starts with an 's' that crawls on the ground?"

QD: Question/Divergence: Question allowing respondent to select response among possible alternative out-comes or responses. Example: "What is a good way to make a new friend?"

QN: Question/Convergence: Question statement requiring respondent to develop best single response based upon logical organization of selected information. Example: "If the bottle is ½ empty, how much water is left in it?"

QE: Question/Evaluation: Question statement requiring judgment of information according to acceptable standard. Example: "Which of these words is just like the first word?"

QM: Question/Memory: Question statement requiring respondent to retrieve information in exact form in which it was previously given. Example: "Who knows the capital of Arkansas?"

QO: Question/Orientation: Question seeking information about possible activities based upon a time sequence. Example: "When I finish my math, do I do my reading next?"

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QP: __Question/Punishment__: Question statement requiring respondent to determine nature and circumstances of supposed punishment. Example: "What do you think you ought to do to make up for that?"

QR: __Question/Rephrase__: Rephrase of previous question without additional clues or information. Example: (having asked previously, "How many apples were put in the basket?"), "Well, how many apples do you see in the basket?"

QRV: __Question/Review__: Question in reference to previous information given, or activities performed. Example: "Remember when we were talking about Henry VIII yesterday? Who, did we say, was his third wife?"

QC: __Question Check__: Question statement attempting to determine process or procedure by which the respondent attained terminal answer to given task requirement. Example: "Tell me how you did this problem."

---

3. __Instructional Device__: Behavior which facilitates instructional exchange.

AK: __Acknowledge__: Response to apparent or observable behavior which represents attempt by subject to express. Example: (sees Mary with her hand raised), "Yes, Mary?"

AR: __Acceptance with Reinforcement__: Affective acknowledgement of respondent based upon given correct response. Example: "Yes, 'cat'! That's real good, Bill!"

CA: __Call for Attention__: Verbal or nonverbal request of others for focused awareness of oneself. Example: "All right, everyone listen to me now," or (snapping fingers, slamming book on desk.)

CAU: __Caution__: Statement indicating possible hazards or limitations anticipated in performance of given task or pending situation. Example: "Is this OK with you?" or "Do you believe this?" or "Is this true?".

WHY __Why__: Explanation of needs or reasons for a subject being important, without reference to feeling or attitude. Example: "We should study math so it will help us to get certain jobs."

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CU: Clues: Items of information presented with the intent of guiding the respondent toward solutions. Example: "What is this word--it starts with a 'B' sound."

DK?: Don't Know with Probability: Statements of probability with stated indications of uncertainty. Example: "I don't know, but it could be this way..."

DR: Direction to Repeat: Verbal direction to repeat previously elicited response. Example: "Please tell me again what you said."

How To: Demonstration or verbal statement indicating a structured approach or organized sequence to performance of a proposed task. Example: "First we subtract here, then carry this number, and finally..."

LA?: Look Again: Statement requiring respondent to review or perform further on a given task. Example: "Take another look and see if you did it correctly."

WD: What To: Verbal statements of instruction indicating an area of attention for participating. Example: "Take out your math book and open it to page 46."

LE?: Leading: Leading a verbal recitation to facilitate collective student response. Example: (leads Pledge of Allegiance, Distar Group, etc.).

OA: Offering Alternatives: Verbal statements of instruction indicating options for performance or response. Example: "You may either do every problem on this page, or you may do every other problem."

QR?: Question/Ready: Verbal question soliciting the state of preparedness. Example: "Are you ready? or "Can you go to work now?"

QRh: Question/Rhetorical: Question answered by person raising question, without intent for response by another. Example: "What do we do when we need help? We ask questions, don't we?"

QWh: Question What To: Question statement soliciting prediction of area of attention for participation. Example: "Do you know what to do now?"

GT:     Get to It:  Verbal or nonverbal signal indicating
        time to perform.  Example:  "OK, now, go to work."

REP:    Repetition:  Verbatim repetition of previous re-
        sponse.  Example:  (repeats any former response).

RV:     Review:  Review of previous information to facili-
        tate new input of information.  Example:  "Yester-
        day we read about G.W., so..."

SAL:    Salutation:  Verbal or nonverbal method of initia-
        ting an interaction.  Example: (waves hand) or
        "Good morning, how are you?"

TV:     Teacher-check:  Teacher checks student's progress
        on a task.  Example:  "How are you doing, John?"

WO:     Who does/Optional:  Verbal solicitation of optional
        performance or proposed task / activity.  Example:
        "Who wants to pass out papers?"

RT:     Release from Task:  Verbal distance from obliga-
        tion or responsibility.  Example:  "OK, you can
        go now."

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4.  Control:  Direction and/or redirection of behavior.

    A:      Accepting:  Confirming the correctness of or agree-
            ment with the responses of another.  Example: That's
            good.  You did it correctly."

    AA:     Assumes Authority:  Reference to oneself as stand-
            ard for the validity of tasks assigned, or rules
            established.  Example:  "Because I'm the teacher,
            that's why!"

    AK:     Acknowledge:  Recognition or observation of overt
            response or behavior, (hand up).  Example:  "Yes,
            John, what is it?"

    B:      Describes Behavior:  Statement of sequenced repeti-
            tions of previously observed statements or tasks
            performed.  Example:  "You went home without going
            to the office first."

    C+-:    Detailing Consequences:  (negative/positive):  Ver-
            bal description of resultant outcomes of anticipated
            or performed behaviors.  Example:  "If you do this,
            you can have extra recess time," or "If you don't
            finish your work, you'll stay after school."

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GRP: Group: Verbal instructions intended for group performance. Example: "Everyone line up for lunch," or "A lady says thank you."

NPM: Normative: Descriptions of established standards for group performance and/or personal identification. Example: "In this class we don't do that" or "A lady says thank you."

PC: Physical Control: Application of physical restraints to manage behavior. Example: (puts child in his seat, physical guidance in a learning situation).

PX: Proximity: Within immediate vicinity of student or teacher. Example: (standing next to student).

PN: Punishment: Immediate application of penalty condition for inappropriate behavior or performance. Example: (accosts student) or "Go stand outside in the hall!"

PW: Physical Withdrawal: Temporary self-removal from situations or setting. Example: (student leaves room or turns back).

REM: Reminder: Verbal repetition of a previous request. Example: "Johnny, you forgot to bring your paper up."

TR: Tangible Reinforcement: A concrete object presented as intended reinforcement for preferred behavior. Example: (presents student with an M&M for a correct response).

RT: Release from Task: Verbal discharge from obligation or responsibility. Example: "OK, you can go now."

SH: Shhhhh-hhh: Gestural device for the purpose of establishing or maintaining acceptable audibility. Example: (hushes class for excessive chatter).

SN: Says Name: Statement of the name of another. Example: "Johnny."

STP: Stop: Signal or command to cease an ongoing activity. Example: "Let's knock it off!"

BT: Back on Task: Statements indicating subject to resume or return to designated activity. Example: "Let's get back to work."

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WY:   Will You:  Verbal request for a personal favor
      in which the subject's performance is optional.
      Example:  "Will you open the window for me?"

NS:   Nonverbal Signal:  Nonverbal indicators used to
      regulate or control activity.  Example:  (snaps
      fingers to make talking).

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.     Negative:  Statements and/or behavior that indicate
      actions and feelings, positive or negative.

DA:   Disagreement:  Statement of lack of willingness
      to accept given viewpoints or task, in a resist-
      ing position.  Example:  "I don't believe what
      you say." or "I can't buy that."

C:    Concern for other:  Solicitous of the physical,
      emotional, or mental state or condition of another.
      Example:  "Are you hurt?" or "What's the matter?"

EN:   Encouragement:  Statement intended to be supportive
      of or indicative of confidence in another's ability
      to perform.  Example:  "I'm sure you can do it."

PF:   Personal Feeling:  Statement indicating affective
      attitudes or emotional bias toward events, persons,
      or situations.  Example:  "I am upset" or "I am
      happy today about your work."

INT:  Interpretation:  Presentation of logical causes
      and/or effects of given response or situation.
      Example:  "You did that because you were angry."

K:    Kidding:  Statements intended to humor another.
      Example:  "Let's laugh and feel better together."

FG:   Facial Gestures:  Observable reactions as deter-
      mined by variation in expression.  Example:
      (see coded examples)



------Smiling

------Frowning

------Laughing

------Crying

# BEHAVIOR DISORDERS

## by Anthony LaPray, Ed.D.

### 1. Legal Definition

Children with behavior disorders are children of potentially normal intelligence without known organicity who, because of learned behavior, are not achieving academically or personally.

### 2. Practical Definition

Children's behavior disorders can be temporary, lasting only a few seconds or fairly permanent, lasting most of the person's life, depending on the individual. These disorders are caused by either a single factor or an interaction of factors that affect the functioning of the individual and reduce his ability to function in society. This decrease in ability to function can occur in intellectual capabilities, emotional well being, social or interpersonal relationships. These disorders can occur in one or a combination of the following elements of a child's life.

(1) Genetic: the child's hereditary base is in someway deficient, causing a decrease in functioning.
(2) Bio-chemical: the child has an abnormal biochemical or endocrine disorder that affects the way he interacts with his environment.
(3) Neurological: the child's central nervous system is either damaged or malfunctions, causing problems as he interacts with his environment.
(4) Environmental: the interaction of the child with his surroundings, his home, school, community can cause emotional intellectual, or personal problems. The method in which the child as a genetic, bio-chemical, neurological organism learns to interact with his environment on any one given occasion determines how he will interact with it in the future.

Behavior disorders transcend all areas of exceptionality: because of the very fact that a child is handicapped, he has more emotional problems than the nonhandicapped child. Children with other types of handicaps need more emotional support throughout their lives.

The social institution that has the most contact with the child over the age of six is the schools. For this reason it is felt that the schools must develop a therapeutic milieu to assist all children in dealing with their emotions and behavior.

The behavior disordered child is a child who has failed. He has failed in his interactions with others and he is generally

a child who has had a great number of failing experiences in school. It is important in working with these children that the pattern of failure be broken and that the child be allowed to succeed. This can be done both in his academic as well as his personal life. Success is the key to the alleviation of behavior disorders, and educational therapy is the key to this success.

3. Descriptors

Behavior disordered children are described as emotionally disturbed, socially maladjusted, juvenile delinquent, autistic, psychopathic, crazy or just problem children. They are children who, because of some problem or problems, cannot reach their potential without help.

4. Identification

The child with behavior disorders is identified by his behavior through comparisons of this behavior with that of the majority of children of the age group. He can be further identified by the use of group and individual tests, questionnaires, checklists, and interviews.

5. Characteristics

Children with behavior disorders do not generally have a different appearance than normal children; they are really normal children who, for a time, act in an abnormal way. Skilled special educators, psychologists, or medical personnel can assist in the diagnosis and remediation of these problems. These children have normal potential and with the remediation of their problems will join the mainstream of the community.

The following are a list of questions which may aid in the identification of children with behavior disorders.

(1) Aggressive behavior: does he lie consistently, even when the truth would do just as well?

Does he cheat even when he doesn't need to, merely for the sake of cheating?

Does he steal, or report things of his own to be stolen when they are not?

Is he intentionally destructive? Is he cruel? Does he consistently bully younger children?

In his relations with adults, is he arrogant and defiant? Does he frequently have temper tantrums?

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(2) Withdrawn

Is he overly sensitive, so that he cries frequently?
Does he daydream a great deal and seem to prefer his
daydreams to activities with other children?

Does he try extremely hard to please, even at the
expense of losing friends?

Is he easily frightened and does he have unusual
fears?

Is he overly selfish?  Does he make up stories to
enhance his own position?

(3) Physical factors

Does the child bite his nails?  Does the child
have any face twitching?

Does the child constantly pull or twist his hair,
chew on his clothing, or pick or scratch his body?

Does he have a weak, high pitched, or strained
voice or is he constantly clearing his throat?

Is he conscious  f excessive overweight or under-
weight?  Is he conscious of extreme tallness or
shortness?

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BIBLIOGRAPHY

Faas, L. A., The emotionally disturbed child, Charles C.
    Thomas, 1970.

Hewett, F. M., The emotionally disturbed child in the
    classroom, Allyn & Bacon, 1968.

Long, N., Morse, W., & Newman, R. (Eds). Conflict in the
    classroom: The education of emotionally disturbed
    children. Wadsworth, 1965.

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EMOTIONALLY DISTURBED

by Joyce Barnes, M.S.

1. Legal Definition

(1) Emotionally handicapped children have normal or
    above normal learning potential. Their emotional
    condition is such that they cannot learn at the level
    of expectation for their age or adjust adequately
    to their peer group in regular public school
    classes. They are children whose behavior manifests
    a persistent failure to adjust and function intellect-
    ually, emotionally, and socially (Utah Guidelines).

(2) Stephens defines two handicaps:

    A.  Behaviorally handicapped children: those whose
        responses interfere with adjustment to school.
        Includes children whose rate of behavior inter-
        feres with learning, and those whose weak control
        of behavior interferes with learning.

    B.  Learning handicapped children: pupils who have
        either serious academic learning deficiencies or
        serious social learning problems or both. These
        problems are evidenced by maladjustment in school.

(3) Bower and Lambert (in Conflict in the Classroom, edited
    by Long, et al.) define an emotionally handicapped
    child as having moderate to marked reduction in be-
    havioral freedom, which in turn reduces his ability
    to function effectively in learning or working with
    others. In the classroom, this loss of freedom
    affects the child's educative and social experiences
    and results in a noticeable susceptibility to one or
    more of these five patterns of behavior:

    A.  An inability to learn which cannot be adequately
        explained by intellectual, sensory, neurophysio-
        logical, or general health factors.

    B.  An inability to build or maintain satisfactory
        interpersonal relationships with peers and teachers.

    C.  Inappropriate or immature types of behavior or
        feelings under normal conditions.

    D.  A general pervasive mood of unhappiness or
        depression.

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E.   A tendency to develop physical symptoms, such
     as speech problems, pains, or fears, associated
     with personal or school problems.

(4) An outline from the Wichita Public Schools indicates
    placement of students in classes for emotionally handi-
    capped when they are unable to benefit from regular
    classroom instruction even when supportive assistance
    was provided.   They described these students as having
    a combination of characteristics such as excessive day-
    dreaming, inappropriate emotional responses, intensive
    fears, excessive withdrawal, irresponsible social
    behavior, and perceptual disabilities.

(5) Bower has suggested that the term emotionally handi- ·
    capped should be substituted for emotionally dis-
    turbed when schools refer to these children.   Disturb-
    ance implies behavior that upsets others.   Many of
    these children are extremely withdrawn and non disturb-
    ant.   A tense situation may evoke appropriate disturb-
    ance in anyone, but these children respond inappro-
    priately to many normal situations.   The phrase emo-
    tionally handicapped emphasizes that a "disabling con-
    dition of some duration" has diminished the student's
    ability to function in school. (Bower in Utah Guide-
    lines)

2.   Practical Definition

(1) Layman Information

    Some samples from a checklist by Quay as found in
    Conflict in the Classroom (Long, et al) include:

    Doesn't know how to have fun; behaves like a little
    adult;
    Steals in company with others;
    Fighting;
    Anxiety, chronic general fearfulness;
    Depression, chronic sadness;
    Negativism, tendency to do the opposite of what is
    requested;
    Often has physical complaints; e.g., headaches, ·
    stomach aches.

(2) Etiology and Relation, if any to other exceptionalities:

    Since the inception of special education classes in
    the public schools, additional groupings seem to
    appear.   Most of these labels are derived from etio-
    logical terms and have little or no meaning for
    educators in terms of classroom procedures for pro-
    gramming and remediation.   This is not to negate

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etiological considerations, but to emphasize that a practitioner (teacher-educator) will work with the behavior and learning of a child, regardless of the medical findings, and will necessarily be oriented to behavioral and learning terminology.

Examples of such etiological terms include neurologically handicapped, children with minimal brain dysfunction, children with perceptual-motor handicaps, and the learning-disordered child.

3. Descriptors

(1) Descriptors may come from a variety of sources: teachers, peers, self-perception, ancillary personnel, and families. Rating scales can be used, then combined to give a total evaluation.

(2) A listing of needs (or competencies) is a way of listing frequencies of occurrence of specific problems, indicating a deficit in competencies. Such a summary would contain terms like:

Listening comprehension
Following directions
Restlessness
Immaturity
Reading comprehension
Written expression
Language impaired
Socially handicapped
Hearing impaired
Visually impaired
Work habits
Attention span

(3) Criteria for consideration of candidates for Special Education Class for Emotionally Handicapped in Utah: (Utah Guidelines)

A. Initial consideration should be based on certain symptomatic characteristics evident in children who suffer from emotional disturbance. Teachers can readily identify possible candidates by keeping in mind that emotionally handicapped children will display any or all of the following symptoms:

a. Inability to learn at a rate commensurate with their intellectual, sensory-motor and physical development.

b. Inability to establish and maintain adequate social relationships.

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c. Inability to respond appropriately in day-to-day situations.

d. Excessive behavior, ranging from hyperactive, impulsive responses to depression and withdrawal.

A. For purposes of educational planning and programming, certain types of handicaps displayed by children need to be handled in other educational programs. Children with the following characteristics should, therefore, be excluded as candidates for the Emotionally Handicapped Program:

a. Those whose emotional disturbances are caused by reaction to immediate situations rather than prolonged disturbances.

b. Those who have primary physical handicaps of blindness or deafness and/or manifest conditions directly associated with organic brain impairment.

c. Those with below-average learning potential.

d. Those whose disturbance is so severe that they require intensive psychiatric services with a recommendation for a treatment center.

e. Those whose learning disabilities should be helped through tutorial or remedial services.

4. Personal Criteria and/or Informal Methods for Identifying this Disabled child

Looking at test batteries;
Personal observations and interviews with: regular school staff, ancillary personnel, the child, the child's family, other "significant others" in his life;
Looking at data from latest physical examination, including recent vision and hearing tests;
Looking at work samples obtained during any school attendance.

5. Characteristics

(1) Behavioral and Functional

A. Basic prerequisites for formal schooling are often found to be defective in the repertoires of learning handicapped children. These may include: failure to read consistently from left to right, exceedingly short attention span, poor recall of previously

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learned material, erratic academic performance, knowledge of a process one day and failure to use the same skill subsequently, failure to obey simple directions, aberrant behavior, over-reactions to stimuli, difficulty in counting objects, poor discrimination of likenesses and differences among objects and sounds. Unwillingness to attempt tasks, failure to participate appropriately in group activities (Stephens).

B.  In addition to the poor qualitative aspects of achievement, resistence to conventional instruction is often observed (Stephens).

C.  Two main areas of problems in adjustment in school are: (a) children whose rate of behavior interferes with learning, and (b) those whose weak control of behavior interferes with learning. Characteristics of such children are: restlessness, attention-seeking, disruptiveness, boisterousness, hyperactivity, disobedience, over aggressiveness, and unruliness; or on the other end of the spectrum: quiet, shy, withdrawn, phobic, and autistic. Observable characteristics of children with poor control of behavior include: bizarre thinking as reflected in peculiar behavior, problems of attending behavior, impaired social behavior, and unwarranted emotional responses (Stephens).

D.  Characteristics of a psychological nature would include:

     a.   Motor performance
     b.   Visual discrimination
     c.   Auditory discrimination
     d.   Memory

(2) Academic

A.  Underachievement

B.  Poor quality of achievement

C.  Resistence to conventional instruction

D.  Receptive-expressive modes

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BIBLIOGRAPHY

Ackerman, N. W., M.D. The psychodynamics of family life: Diagno-
    nosis and treatment of family relationships. New York:
    Basic Books, 1958.

Alvin, J.  Music for the handicapped child. London: Oxford
    University Press, 1965.

Aspy, D.  Toward a technology for humanizing education. Campaign,
    Illinois: Research Press Company, 1972.

Becker, W. C.  Parents are teachers: A child management pro-
    gram. Campaign, Illinois: Research, 1971.

Benyon, S. D.  Intensive programming for slow learners. Columbus,
    Ohio: Charles E. Merrill Publishing Company, 1968.

Bereiter, C. & Engleman, S.  Teaching disadvantaged children
    in the preschool.  Englewood Cliffs, New Jersey: Prentice-
    Hall, Inc., 1966.

Berkowitz, P.  Music for life adjustment. Clearing House 29,
    1955.

Berkowitz, P. & Rothman, E. P., The disturbed child recognition
    and psychoeducational therapy in the classroom. New York:
    New York University Press, 1960.

Board of Education, Unified School District 259, Wichita,
    Kansas, Special education diagnostic and resource center
    project. Wichita, Kansas: Unified School District 259,
    1969.

Board of Education of the City of New York, The emotionally
    disturbed child: A bibliography, New York: Board of
    Education, 1964.

Buckley, N. K. & Walker, H. M., Modifying classroom behavior:
    A manual of procedure for classroom teachers. Campaign,
    Illinois, Research Press Company, 1970.

Bushell, D., Jr. The behavior analysis classroom. Lawrence,
    Kansas: Department of Human Development, University of
    Kansas, 1970.

Carter, R. D., Help!  These kids are driving me crazy. Campaign,
    Illinois: Research Press Company, 1972.

Chaney, C. M. & Kephart, N. C., Motoric aids to perceptual
    training, Columbus, Ohio: Charles E. Merrill Publishing
    Company, 1968.

196

Cohen, J. S., Confrontation and change: Community problems of mental retardation and developmental disabilities. Ann Arbor, Michigan: The University of Michigan, 1971.

Cratty, B. J., Active learning: Games to enhance academic abilities. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1971.

Diebart, A. N. & Harmon, A. J., New tools for changing behavior. Champaign, Illinois: Research Press Company, 1970.

Dillman, C. M. & Rahmlow, H. F., Writing instructional objectives, Belmont, California: Fearon Publishers, 1972.

Dillon, E. J., Heath, E. J., & Biggs, C. W., Comprehensive programming for success in learning. Columbus, Ohio: Charles E. Merrill Publishing Company, 1970.

Dinklage, H., Thereapeutic charms of music. Music Educators Journal, 1965, 51:129-131.

Duerksen, G., Some similarities between music education and music therapy. Journal of Music Therapy, 1968, 4(3):95-99.

Early, G. H., Perceptual training in the curriculum. Columbus, Ohio: Charles E. Merrill Publishing Company, 1969.

Emery, L. S., Use of standard materials with young disturbed children. Exceptional Children, 1966, 33(4):265-268.

Engelmann, S., Previnting failure in the primary grades. Chicago, Illinois: Science Research Associates, 1970.

Flender, Harold, We were hooked, New York: Random House, 1972.

Gallagher, P. A., Positive classroom performance: Techniques for changing behavior. Denver, Colorado: Love Publishing Company, 1971.

Gaston, E. T. (Ed.), Music in therapy, New York: MacMillan Company, 1968.

Gerwitz, H., Music therapy as a form of supportive psycho-therapy with children. Journal of Music Therapy, 1964, 1(2):61-65.

Greeley, A. M., Why can't they be like us? New York: Institute of Human Relations Press, 1969.

Green, D. D., Music as an aid to the city. Music Journal, 1966, 24:44.

197

Hamilton, A. E., _Psychology and the great god fun_. New York:
    Julian Press, 1955.

Haywood, D. M., Bibliotherapy for emotionally disturbed
    and/or socially maladjusted children. Unpublished MED
    seminar report. Utah State University Library, Logan,
    Utah, 1968.

Helling, Barbara, Pub. music in the curriculum. _Newsletter of_
    _the Council for Children with Behavioral Disorders_, 1967,
    _4_(3):9-10.

Holt, J. _How children learn_. New York: Dell Publishing Company,
    Inc., 1964.

Holt, J. _What do I do Monday?_ New York: E. P. Dutton & Company,
    1970.

Homme, L., _How to use contingency contracting in the classroom_.
    Champaign, Illinois: Research Press Company, 1970.

Johnson, J., Evaluating patients in music therapy. _Journal of_
    _Music Therapy_, 1968, _5_(4):108-110.

Kessler, J. W., _Psychopathology of childhood_. Englewood Cliffs,
    New Jersey, 1966.

Kessler, J. W., Therapeutic methods for exceptional children.
    _Journal of Music Therapy_, 1967, 4(1):1-2.

Kirk, D. A. & Weiner, B. B., _Behavior research on exceptional_
    _children_. Washington, D.C.: The Council for Exceptional
    Children, 1963.

Kordoroscy, E. J., Let their music speak for the handicapped.
    _Music Educators Journal_, 1966, 52:115-116.

Lewis, W. W., Project Re-Ed: A new program for emotionally
    disturbed children. _Teachers College Record_, 1966,
    _67_:188-200.

Limbacher, W. J., Ph.D., _Dimensions of personality:  I'm not_
    _alone_. Dayton, Ohio, George A. Pflaum Co., 1970.

Long, N. J., Morse, W. C., & Newman, R. G. (Eds.), _Conflict_
    _in the classroom_. Belmont, California: Wadsworth Pub-
    lishing Company, Inc., 1965, 1st Edition.

Long  N. J., Morse, W. C. & Newman, R. G. _Conflict in the_
    _Classroom_, Belmont, California: Wadsworth Publishing
    Company, 1971. 2nd Edition.

198

Madsen, C. H., Becker, W. C. & Thomas, D. R., Rules, praise, and ignoring: Elements of elementary classroom control. Journal of Applied Behaivoral Analysis. 1968, 2:139-150.

Madsen, C. K., Madsen, C. H., Jr., & Cotter, V., A behavioral approach to music therapy. Journal of Music Therapy, 1968, 5(3):69-71.

Madsen, C. K., & Madsen, C. H., Music as a behavior modification technique with a juvenile delinquent. Journal of Music Therapy, 1968, 5(3):72-76.

Mager, R. F., Goal analysis. Belmont, California: Fearon Publishers, 1972.

Masserman, J. H., Music and the child in society (p. 55) in Margaret Sears and William Sears, Abstracts of research in music therapy, Journal of Music Therapy, 1964, 1(20: 1-60.

Miller, M. D., Music and tension. The Psychoanalytical Review, 1967, 54(1):141-156.

Morris, T., Better than you. New York: Institute of Human Relations Press, 1971.

Morse, W. C., Classroom disturbance: The principal's dilemma. Arlington, Virginia: Council for Exceptional Children, 1971.

Morse, C., Cutler, R. L., & Fink, A. H., Public school classes for the emotionally handicapped: A research analysis. Washington, D.C.: Council for Exceptional Children, NEA., 1964.

Neill, A. S. Summerhill: A radical approach to child rearing. New York: Hart Publishing, 1960.

Nelson, V. F., Musicals as therapy. Music Journal, 1965, 23:38.

Newman, R. G., Ph.D. & Keith, M. M., The school-centered life space interview: School research program. Washington, D.C., Washington School of Psychiatry, 1964.

Nicosia, D., Teaching the culturally disadvantaged pupil. In John M. Beck and Richard W. Saxe (Eds.), Teaching the culturally disadvantaged pupil. Springfield, Illinois: Charles C. Thomas, 1965.

Nordoff, P. & Robbins, C., Improvised music for autistic children, Music Journal, 1965, 23:39.

199

Nordoff, P. & Robbins, C., Music therapy in special education. New York: John Day Company, 1971.

Patterson, G. R., Families: Applications of social learning to family life. Champaign, Illinois: Research Press Company, 1971.

Patterson, G. R. & Gullion, M. E., Living with children: New methods for parents and teachers. Champaign, Illinois: Research Press Company, 1968, 1971.

Peter, L. J., Prescriptive teaching. New York: McGraw-Hill Book Company, 1965.

Podolsky, E., Moderating anger with music. Music Journal, 1965, 23:41.

Radin, S., The teacher and the rehabilitation of the emotionally disturbed child. Journal of School Health, 1965, 35: 97-100.

Redl, F. & Wineman, D., Children who hate. New York: The Free Press, 1951.

Semb, G. (Ed.), Behavior analysis and education. Lawrence, Kansas: University of Kansas, 1972.

Sheppard, W. C., Shank, S. B. & Wilson, D., How to be a good teacher: Training social behavior in young children. Champaign, Illinois: Research Press Company, 1972.

Sherwin, C., Reactions to music of autistic (schizophrenic) children, (p. 43) In Margaret Sears and William Sears, Abstracts of research in music therapy, 1964, Journal of Music Therapy, 1963 1(2):1-60.

Smith, R. M. Teacher diagnosis of educational difficulties. Columbus, Ohio: Charles E. Merrill Publishing Company, 1969.

Steele, A. L., Programmed use of music to alter uncooperative problem behavior. Journal of Music Therapy, 1968, 5(4):103-107.

Stein, J., The music therapist's role in work with severely disturbed patients. Journal of Music Therapy, 1965, 2(2):53-55.

Stephens, T. M., Directive teaching of children with learning and behavioral handicaps. Columbus, Ohio: Charles E. Merrill Publishing Company, 1970.

200

Thomas, D. R., Armstrong, M., & Becker, W. C., Production and
    elimination of disruptive classroom behavior by systemati-
    cally varying teacher's behaviors. Journal of Applied
    Behavioral Analysis, 1968, 1:35-45.

Tyson, F., Music therapy as a community service. Music Journal
    1965, 24:34.

Utah State Department of Public Instruction, Guidelines for
    programs for emotionally handicapped, Salt Lake City,
    Utah, 1968.

Valett, R. E., Effective teaching: A guide to diagnostic-
    prescriptive task analysis, Belmont, California: Fearon
    Publishers, 1970.

Valett, R. E., Programming learning disabilities, Belmont,
    California: Fearon Publishers, 1969.

Wang, P., Psychoanalytic theories and music therapy practice,
    Journal of Music Therapy, 1968, 5(4):114-116.

Waugh, K. W. & Bush, W. J., Diagnosing learning disorders,
    1971, Columbus, Ohio: Charles E. Merrill Publishing
    Company, 1971.

Weber, R., Teaching unteachables through instrumental music.
    Music Journal, 1965, 23:34.

Wedemeyer, A. & Cejka, J., Creative ideas for teaching
    exceptional children. Denver, Colorado: Love Publishing
    Company, 1970.

Wedemeyer, A. & Cejka, J., Learning games for exceptional
    children: Arithmetic and language development activities.
    Denver, Colorado: Love Publishing Company, 1971.

Wender, P. H., M.D., Minimal brain dysfunction in children,
    New York: Wiley-Interscience, Division of John Wiley &
    Sons, Inc., 1971.

Wilderson, F. B., Jr., A concept of the "ideal" relationship
    in classes for emotionally disturbed children. Journal
    of Special Education, 1968, 1(1):91-97.

Wilson, A. Special education for the emotionally disturbed
    child. Journal of Music Therapy, 1964, 1(1):16-18.

Wilson, M.  A pilot study of the effect of oral reading of
    literature, chosen to arouse pity and fear for cathartic
    effect, on the inappropriate behavior of a group of emo-
    tionally handicapped children. Unpublished MA thesis.
    University of Utah Library, Salt Lake City, Utah, 1968.

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EDUCABLE MENTALLY RETARDED

by Philip Chinn, Ed.D.

I.   Legal Definitions

Educable mental retardation has often been simply defined
as a low intelligence quotient.  For instance, to qualify for
special education services, the State of Utah requires an I.Q.
of 55 to 75 and an achievement profile commensurate with the
low I.Q.

One of the most widely accepted definitions of mental re-
tardation which provides a clearer interpretation of the pro-
blem is that of the American Association on Mental Deficiency
(AAMD).  This definition states that "mental retardation refers
to sub-average general intellectual functioning originating
during the developmental period and associated with impairment
in adaptive behavior" (Heber, 1961).

The AAMD definition has several important implications for
professional workers who deal with the mentally retarded and
their families.  First, AAMD defines "subaverage" as those
individuals falling below one standard deviation of the mean.
Since the mean I.Q. is generally recognized as 100, those falling
below one standard deviation on the two most widely used in-
dividual tests of intelligence would include those with scores
below 84 on the Weschsler scales, and below 83 on the Stanford-
Binet scale.  While a cut-off score of 70 represents a pre-
valence of about two to three percent, the higher cut-off score
of the AAMD definition includes nearly 16 percent of the total
population.  This definition provides for recognition of the
need for special eduational services of the large and often
neglected group of children whose I.Q. scores fall within the
70 to 84 range.  These children generally lack the ability to
compete academically with their intellectually average or above-
average peers.  Yet their I.Q. score often precludes special
educat'onal services which are needed for these borderline
retarded children.

The second implication of the definition of mental retard-
ation provided by the AAMD is related to the fact that the three
criteria used in the definition do not refer to etiology of
the retardazion.  The child must 1) demonstrate subaverage
intellect and function, 2) this **type of** function must originate
during the period of childhood development, or from conception
to age 16, and 3) must be associated with impairment in adaptive
behavior.  In the past, when retardation was identified in
terms of organic etiology, children with uncertain etiology,
such as mental or sensory deprivation, were simply referred to as

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"pseudo-retardates." Likewise, disturbed individuals with
emotional overlays which caused lower functioning levels were
also treated as "pseudo-retardates." In the AAMD definition,
the individual is considered retarded if he meets the stated
criteria. If through environmental or sensory enrichment,
or psychotherapy, his level of functioning rises above the
criteria for retardation, the child is no longer considered
retarded.

With the AAMD definition, children are classified accor'ing
to symptom severity. Classification is made according to the
standard deviations from the mean I.Q. of 100.

| Standard Deviation | Classification | Corresponding I.Q.* |
|---|---|---|
| -1.01 to -2.00 | Borderline | 70-84 |
| -2.01 to -3.00 | Mild | 55-69 |
| -3.01 to -4.00 | Moderate | 40-54 |
| -4.01 to -5.00 | Severe | 25-39 |
| below -5.00 | Profound | under 25 |

* Wechsler scale with S.D. of 15.

Accordingly, educable mentally retarded children would
fall in the mildly retarded range with a few children over-
lapping into the lower levels of the borderline range.

2.   Other Definitions

Mentally retarded children are usually classified by
symptom etiology, symptom severity, or by clical types. Clini-
cians in the health sciences are often interested in all three
systems of classification. Clinicians in the behavioral
sciences and education, while interested in all three systems,
tend to place a greater emphasis on symptom severity, as
their primary service is to provide programs meeting the
individual needs of each child regardless of etiology or
clinical type.

Symptom etiology. Classification based on symptom etiology
is provided by the AAMD manual on terminology and classification.

Briefly summarized, the eight categories are:

(1)   Mental retardation associated with diseases and con-
      ditions due to infection (e.g., congenital rubella,
      post-natal encephalitis, syphilis).

(2)   Mental retardation associated with diseases and con-
      ditions due to toxicity (e.g., Ph incompatability causii
      bilirubin encephalopathy, congenit d maternal
      toxicity).

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(3) Mental retardation associated with diseases and conditions due to trauma or physical agents (e.g., prenatal, perinatal or postnatal physical injuries, anoxia at birth).

(4) Mental retardation associated with diseases and conditions due to disorders to metabolism, growth, or nutrition (e.g., phenylketonuria).

(5) Mental retardation associated with diseases and conditions due to new growths (e.g., neurofibromatosis).

(6) Mental retardation associated with diseases and conditions due to unknown prenatal influence (e.g., hydrocephalus, Down's Syndrome).

(7) Mental retardation associated with diseases and conditions due to unknown and uncertain causes with central nervous system deviation present (e.g., spinal sclerosis).

(8) Mental retardation due to uncertain or presumed psychological cause with functional or behavioral reactions alone expressed (e.g., cultural-familial retardation).

As many as 75 to 85 percent of all retarded children may be identified as having an etiology of uncertain cause with functional or behavioral deviations alone expressed. The remaining percentage of children would be distributed by etiology in categories 1 through 7.

3. Characteristics

(1) Functional Capacities

The educable mentally retarded children who enter school for the first time, bring with them more of the appearance of their normal peers than distinguishing characteristics which set them aside from other children. They have the same basic likes, dislikes, and needs of all children.

Unfortunately, when they enter school, academic pressures are levied on them and their intellectual differences become magnified. Often their academic problems are compounded by social development commensurate with their mental age, but not with their chronological age. Thus, they often find rejection on two fronts, from the teacher frustrated with their academic limitations and from their normal peers frustrated by their social inadequacies. Failing in their efforts and rejected, the emotional problems begin.

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There appears to be little disagreement with the
notion that there is a higher incidence of behavioral
disturbances among the retarded population as compared
to the general population. Studies have indicated
that as many as forty percent of the retarded popu-
lation may have emotional or personality deviations
as compared to about one-half that percentage for
the non-retarded population (Dewan, 1948; Weaver,
1946; Craft, 1959).

(2) Behavioral - Mental Age Discrepancies

As previously stated, educable retarded children
may closely resemble their normal peers physically
and at times behaviorally. As the child grows
older, however, the discrepancy between mental age
and chronological age becomes more acute. The six-
year old retarded child with an I.Q. of 75 will have
an approximate mental age of four and one-half years,
or only one and one-half years behind his normal
peers. When he reaches the age of 16, however, the
mental age discrepancy may be as great as four years.
If the I.Q. is lower than 75, the discrepancy will be
proportionately larger.

(3) Physical Deviations

While the majority of the retarded population
have few observable deficiencies in their physical
characteristics, there appears to be a direct corre-
lation to the degree of retardation and the degree of
physical defect. Researchers have found that re-
tarded children compared to normal children are gen-
erally deficient in physical characteristics of height
and weight (Abernathy, 1936; Flory, 1936; Paterson,
1930). Flory's study indicates that not only in the
growth level deficient, but the period of growth
is also extended.

Researchers have also found a greater preponder-
ance of sensory defects such as auditory and visual
acuity among the retarded (Mathew, 1951; Kempf &
Collins, 1929). Likewise, the retarded are deficient
compared to their normal counterparts with respect
to motor proficiency. Francis and Rarrick (1960)
suggest that mental retardation need not cause motor
retardation. Rather, motor deficiencies among the
retarded may be more of a function of deprivation in
learning and practice opportunities than the re-
tardation itself.

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(4)   Learning

       The literature regarding the learning character-
istics of the retarded has increased considerably in
the past decade.   A detailed discussion of all the
basic learning characteristics of the retarded would
be too extensive for the limitations of this section.
However, a few of the primary distinguishing
characteristics follow:

A.   Distribution of Practice

       While many individuals appear to function
well by utilizing mass practice, such as cramming
for examinations, the literature suggests that
distributed practice enhances the learning per-
formance of retarded individuals in contrast to
mass practice (Madsen, 1963).   Thus, it would be
advisable for the clinician to provide the
retardate with short but frequent practice
sessions on his day-to-day tasks.

B.   Learning of Concrete vs. Abstract Concepts

       The retardate has been observed to be less
able to grasp abstract concepts as opposed to
concrete concepts when compared to individuals
of normal intelligence (Werner, 1948).   There-
fore, the more meaningful and concrete the material,
the more apt the retarded child is likely to
learn.

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# BIBLIOGRAPHY

Abernathy, E. M.   Relationships between mental and physical
     growth, Monogr. Soc. Res. Child Development, 1, No. 7.

Craft, M.   Mental disorders in the defective:   A psychiatric
     survey among inpatients, American Journal of Mental
     Deficiency, 1967, 63:829-834.

Dewan, J. G.   Intelligence and emotional stability, American
     Journal of Psychiatry, 1948, 704:548-555.

Flory, D. D.   The physical growth of mentally deficient boys,
     Monogr. Soc. Res. Child Devel., 1936, 1, No: 6.

Francis, R. J. & Rarick, G. L., Motor characteristics of the
     mentally retarded, Cooperative Research Monograph, No. 1,
     Washington,  U.S. Dept. of H.E.W., 1960.

Heber, R.   A manual on terminology and classification in mental
     retardation, American Journal of Mental Deficiency,
     Monograph Supplement, Second Edition, 1961.

Kempf, G. A. & Collins, S. S.   A study of the relation between
     mental and physical status

Madsen, M. C.   Distribution of practice and level of intelli-
     gence, Psychological Reports, 1963, 13:39.

Matthews, J.   Speech problems of the mentally retarded.   In Hand-
     book of speech pathology, L. E. Travis (Ed.), New York:
     Appleton, Century-Crofts, 1951.

Paterson, G. H. J.   The physique and intellect, 1930, New York:
     Century.

Weaver, T. R.   The incidence of maladjustment among mental
     defectives in military environment, American Journal of
     Mental Deficiency, 1946, 51:238-246.

Werner, J.   Comparative psychology of mental development,
     New York: International University Press, 1948.

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EDUCABLE MENTALLY RETARDED

by Robert L. Erdman, Ed.D.

1. Personal Criteria and/or Informal Methods
   for Identifying this Disabled Child

   Most of the informal methods employed for identifying
educable mentally retarded children are similar in nature to
general informational child study techniques.

   School activities include a wide variety of informal and
formal situations which provide excellent opportunities for
observing individual differences within a given child and
between children in a given group. These situations for the
most part are represented in the typical schedule of school
activities and do not require any special materials or situations.
What is required is an awareness on the part of the teacher
for observing differences that interfere or disrupt learning
patterns in children.

   When observing specific behavior, caution must be
exercised not to assume the underlying causes without more
formal child study. This principle becomes particularly
critical in the case of educable mentally retarded children
because so many of the observable behaviors may be similar
in nature to other disability patterns. The critical
factor is to be able to describe as accurately as possible
these behaviors so that they may be used as a basis for
more formal assessment techniques.

   The primary distinguishing characteristic of educable
mentally retarded children is the discrepancy between their
rate of mental development and chronological age. For example,
an EMR child with a chronological age of six will be function-
ing at a three to four year mental level and will probably
maintain this slowness in mental development throughout his
school years. Thus, a teacher may observe the following:

   (1)   A general lack of readiness for traditional school
         subjects (reading, writing, arithmetic, spelling,
         etc.); the EMR child will not be ready to perform
         at an achievement level commensurate with his
         chronological age.

   (2)   His rate of academic progress will be about one-half
         to three-fourths the rate of the average child in the
         classroom; he cannot be expected to achieve in
         one year what the average child does.

(3)  A general slowness in specific intellectual functions
     requi. i for school performance such as low in
     memory auditory and visual materials, poor per-
     formance on verbal and nonverbal type activities,
     difficulties in generalizing, and disturbances
     in perceptual and conceptual abilities.

(4)  His play interests will correspond more closely to
     his mental level than to his chronological age;
     thus, he frequently selects younger playmates and
     engages in play activities appropriate for younger
     children.

     In addition to the observable slower rate of mental devel-
opment and poorer performance in intellectual functions, a
teacher may observe the following:

(1)  A short attention span and lack of concentration when
     material is not appropriate for his mental level; a
     teacher could expect that attention and concentration
     will improve as material is presented that is
     commensurate with mental level.

(2)  A low frustration tolerance (e.g., excessive aggres-
     sive or withdrawal type behavior) when the expectation
     to achieve is matched with chronological age; the
     frustration tolerance can be increased as level of
     material is more closely matched with mental level.

BIBLIOGRAPHY

Baumgartner, B., Guiding the retarded child: An approach to a total educational program. New York: The John Day Company, 1965.

Pernstein, B., Readiness and reading for the retarded child. New York: The John Day Company, 1965.

Cawley, J. F. & Rankin, I. N., Spelling characteristics of mentally handicapped children, Mental Retardation, October 1965, 21-24.

Erickson, M. J., The mentally retarded child in the classroom. New York: The MacMillan Company, 1965.

Heidmann, M. A., The slow learner in the primary grades. Columbus, Ohio: Charles E. Merrill Publishing Company, 1973.

Kirk, S. A., Educating exceptional children. Boston: Houghton Mifflin, Chapter VI, 1972.

Kirk, S. A. Johnson, G. O., Educating the retarded child. New York: Houghton Mifflin, 1951.

Kolstoe, O. P., Teaching educable mentally retarded children. New York: Holt, Rinehart, and Winston, Inc., 1970.

Meyen, E. L., Developing units of instruction: For the mentally retarded and others. Children with Learning Problems. Dubuque, Iowa: Wm. C. Brown Company, 1972.

Meyen, E. L., Vergason, G. A., & Whelan, R. J., Strategies for teaching exceptional children. Denver: Love Publishing Company, 1972.

Neisworth, J. T. & Smith, R., Modifying retarded behavior. Boston, Mass.: Houghton Mifflin Company, 1973.

Peterson, D., Functional mathematics for the mentally retarded. Columbus, Ohio: Charles E. Merrill Company, 1973.

Siegel, E., Special education in the regular classroom. New York: The John Day Company, 1969.

Smith, R. M., Clinical teaching: Methods of instruction for the retarded. New York: McGraw-Hill Book Company, 1968.

Stein, J., A practical guide to adapted physical education for the educable mentally retarded, Journal of Health, Physical Education, Recreation, December 1962, 20-21, 50-51.

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Stephens, B. (Ed.), <u>Training the developmentally young</u>. New
York: The John Day Company, 1971.

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THE TRAINABLE MENTALLY RETARDED

by Mabel Eide, B.A.

1.  Legal Definition of Mental Retardation

    The basic definition of mental retardation adopted by the
American Association on Mental Deficiency in May, 1960 is:

>       Mental retardation refers to subaverage general
>    intellectual functioning which originated during the
>    developmental period and is associated with impairment
>    in adaptive behavior.   (Heber, 1961)

To quote from the AAMD manual:

>       The subaverage general intellectual functioning
>    group includes all individuals whose performance on
>    suitable objective tests of general intellectual
>    ability is more than one standard deviation below
>    the population mean.  The upper limit of the develop-
>    mental period is considered to be approximately sixteen
>    years.

    Adaptive behavior is manifested in three principal manners:
1) maturation; 2) learning and 3) social adjustment.  Each of
these three factors assumes primary importance during a certain
stage of the developmental period.  Thus, maturation, which
refers to the rate of development of sensory motor skills such
as crawling, walking, talking, etc. is the important criterion
of adaptive behavior during the pre-school years.

    Learning ability refers to the facility with which know-
ledge is acquired as a function of experience.  Impaired learn-
ing ability, then, is of particular importance in mental retard-
ation during the school years.

    Social adjustment is particularly important as a quali-
ing condition of mental retardation at the adult level.  At
this life stage social adjustment is assessed in terms of t
degree to which the individual is able to maintain himself
independently in the community and in gainful employment as
well as by his ability to meet and conform to other personal
and social responsibilities and standards set by the communi.ty

2.  Practical Definition

    (1)  Layman Information

The following are characteristics listed by laymen
when asked how they would describe a trainable mental-
ly retarded person:

A.  low mental ability
B.  not capable of performing school tasks
    successfully
C.  capable of learning self-care habits
D.  has visual and/or auditory weaknesses
E.  has difficulty in remembering what he sees
    or hears
F.  likely troubled with poor motor coordination
G.  not able to work in competitive society
H.  needs to work under supervision in a shelter-
    ed workshop
I.  requires economic support throughout his
    life
J.  able to learn to get along with people

On the basis of a study of definitions of mental
retardation found in legislative statutes and in
various states' regulations governing implementation
of these statutes, Kirk (1957) suggested the follow-
ing characteristics of mentally deficient children:
For school purposes a trainable or severely retarded
child is one who:

A.  is of school age;
B.  is developing at the rate of one-third to
    one-half that of the normal child (IQ's on
    individual examinations roughly between 30
    and 50);
C.  is ineligible for classes for the educable
    mentally retarded but will probably not be
    custodial, totally dependent or require
    nursing care throughout his life;
D.  has potentialities for social adjustment
    in the home or neighborhood and can learn
    to share, respect property rights, cooperate
    in a family unit and with neighbors;
E.  has potentialities for self-care tasks (such
    as dressing, eating, toileting) and can
    learn to protect himself in the home,
    school, or neighborhood;
F.  has potentialities for economic usefulness
    in the home and neighborhood by assisting
    in chores around the house or in doing
    routine tasks for remuneration in a sheltered
    environment under supervision, even though
    he will require some care, supervision, and
    economic support throughout his life.

(2) Etiology

> The causes of mental retardation can be discussed
> under three main categories: 1) organic (before,
> during, and after birth), 2) genetic or inherited,
> and 3) cultural or environmental.

Acquired Organic Causes

Organically caused mental retardation is characterized
by definite central nervous system pathology which is not
hereditary. The defect in the brain or central nervous system
may arise before birth (prenatal) or after birth (postnatal),
as a result of injury, disease, and toxic conditons.

The health of the mother during pregnancy may affect not
only the physical but the mental health and development of
her child. Maldevelopment of the embryo or fetus can be the
result of infection. A classi example is the case of German
measles (rubella) if contracted during the first trimester of
pregnancy. Toxemia, syphilis, influenza, encephalitis and
other diseases are likely to produce a defect in the embryo.

Investigation has disclosed a connection between mental
retardation and incompatible Rh factors in the parents and the
child. When obstetricians know that the parents are Rh incom-
patible, they can prevent mental retardation or cerebral palsy
by transfusing the baby's blood at birth.

It is also known that kidney disease with consequent h n
blood pressure in the mother may cause neurological disturbances
in the infant. High blood pressure is often responsible for
prematurity, and prematurity predisposes the newborn baby to
disorders of the nervous system. Disorders of the nervous
system go hand-in-hand with subnormality.

Some investigators claim that repeated X-ray or radium
treatment of the mother during pregnancy may result in some
trauma to the brain of the child. However, it is felt by most
workers in the field that X-ray radiation causes damage only
if administered very early in the pregnancy.

The U. S. Government at present is conducting a research
project in 11 large maternity cente throughout the country
in order to determine what effect conditions of the pregnancy
have on the fetus; over 40,00 pregnancies are being carefully
followed and evaluated for disorders. The emotional status
of the mother is one of the most important factors being
studied.

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## Birth Abnormalities

An insufficient amount of oxygen in the brain right after birth is known as cerebral anoxia. If this condition lasts more than a few minutes, some brain cells may die and some symptoms of brain disorders may manifest themselves.

Difficult labor, prolonged labor, or premature separation of the placenta may cause neurological disturbances in the newborn by producing cerebral anoxia.

Injuries to the baby's head during birth resulting in hemorrhages in the brain or its covering may result in mental deficiency.

## Postnatal Causes

Mental retardation can be caused by disease and injury after birth and during the period of infancy or early childhood. Encephalitis or inflammation of the brain may be followed by various degrees of mental retardation. The inflammation is usually due to bacteria or to a viral infection.

Another type of inflammation of the brain is a forerunner of impaired mentality; it is caused by a parasite and is known as toxoplasmosis.

Meningitis is an inflammation of the covering of the brain; the infection may spread to the brain proper under the meninges. When the damage extends to the brain, mental retardation usually follows. Sometimes the retardation is due to pressure on the brain due to increased amounts of cerebrospinal fluid as a result of meningitis.

Practically all lead poisoning in children affects the nervous system and is invariably followed by mental retardation.

## Metabolic, Immunologic and Glandular Disorders

Phenylketonuria results from a genetic error or metabolism and is associated with mental retardation. In phenylketonuria the central nervous system is damaged by the improper metabolism of particular foodstuffs after birth when the aid of the mother's metabolic, excretory, or hormonal systems is no longer available. This inherited condition is easily detected by simple tests that can be routinely administered to infants for the presence of phenylpyruvic acid in the urine. Treatment consists of a phenylalanine-free diet. Dietary treatment should begin within the first few weeks of life. The majority of affected individuals without treatment show severe retardation.

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Galactosemia is a congenital disorder in which there is an absence of the enzyme required to metabolize a carbohydrate constituent in milk. Unless the diet is corrected severe mental deterioration or death result.

Idiopathic Hypoglycemia results from an unidentified error in carbohydrate metabolism, the first signs appearing before age two. Speech and visual disturbances are noted along with other neurological manifestations.

Lipoidosis or fat disorders, also known as Tay Sach's disease, is transmitted by a single autosomal recessive gene and is characterized by very early onset and rapid progression of the disease. Severe mental retardation and death, usually before age 5, results.

Cretinism results from insufficiency or total lack of thyroid hormone. Cretinism is a disorder of endocrine function resulting in stunted growth, underdevelopment of bone structure and mental retardation.

## Unknown Prenatal Causes

Microcephaly refers to a reduced circumference of the cranium with accompanying distortion of the cranium to a conical shape.

Hydrocephaly is a comparatively common syndrome characterized by an increased volume of cerebrospinal fluid within the sk'll that ordinarily produces an enlargement of the cranium. It may occur as the result of prenatal factors, birth trauma, or postnatal injury, tumor, or infection which affects the amount of fluid within the skull.

Mongolism (Down's Syndrome) constitutes the largest incidence of a single syndrome accompanied by severe retardation. It is caused by an extra or deviant chromosome. The majority of mongoloid children have a total chromosome count of forty-seven instead of the normal forty-six. The presence of a third chromosome matching one of the small pair, number twenty-one, has been discovered to be causal.

The risk of having a mongoloid child varies greatly with the age of the mother. Three-fourths of mongoloid births occur in pregnancies of mothers over age 40. The mother who is 40 to 44 years-old runs a risk of giving birth to a mongoloid child in about 1 in 70 births; the mother over 45, 1 in 38. Young mothers account for a sizable percentage of mongoloid children; about one-fourth of mongoloid children are born to mothers under 30 years of age. In classes for trainable children, one-third of the enrollment usually consists of mongoloid children.

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## Cultural Environmental Causes

A number of studies consistently report that a substantial majority of the mentally handicapped live in the lower socio-economic cultural areas of the community where the education of the parents is somewhat less than average and the health and nutritional standards do not reach national average.

Often children coming from "substandard" homes have one or both parents or sisters and brothers who are mildly retarded. In contrast there are students who come from predominantly average or higher educational and economic status homes, yet are considered to be severely retarded. These children are usually suffering from the effects of defective genes belonging to the clinical syndrome categories such as mongolism, etc.

Among severely and profoundly retarded children there appears to be an especially high incidence of psychotic-like behavior as in childhood schizophrenia or loss of reality contact and preoccupation with an inner imaginary world.

Unfortunately, behavior and delinquency problems stem from the discrepancy between the retardate's capacity and the requirements of his social behavior.

## Relation, If Any, To Other Exceptionalities

An important syndrome in so far as mental retardation is concerned is the convulsive disorder known as epilepsy. Epilepsy is not always associated with mental retardation, although intellectual impairment often is its companion, either as a result of the damage which precipitated the epilepsy, as the result of damage caused by the epileptic attacks, or as the indirect result of the social-psychological patterns of living into which the epileptic child is sometimes forced.

Epileptic seizures are quite common among mentally retarded children. The grand mal seizure is a major attack and consists of sudden loss of consciousness and of generalized muscle movement. The seizure may be preceded by an aura--a warning which actually comprises part of the attack.

While in a petit mal seizure (minor attack) the child does not fall, but assumes a fixed, staring appearance for a few moments, resumes activity. Other children exhibit epileptic equ   .ents, such as inappropriate laughing or giggling, irrati...al, often violent behavior, dizziness, and headaches.

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Retarded children are especially vulnerable to emotional problems because of their intellectual handicaps. Their deficiencies in judgment, in understanding of their environment, and in anticipation of the results of their behavior lead them to experience failure and punishment. When the retarded child fails to excel in such intellectual activities, early economic self-sufficiency, popularity, physical attractiveness or athletic ability, he often faces open rejection from parents and siblings. With few exceptions emotional problems retard or inhibit intellectual growth. Psychoanalysts interpret many instances of mental retardation as defective ego development, resulting primarily from anxiety and other psychogenic factors.

Defective speech is a problem among the mentally deficient; such a youngster is no different in his speech development pattern than the normal child except that with him these processes are slower to develop. Only the most severely retarded are unable to lea n to speak. The diagnosis, degree of retardation, factors involved in speech delay, and the home routine are important considerations in recommending speech therapy with a child. Clinically it is found that many mentally deficient children with good social awareness respond well to speech therapy at approximately five to six years of age, or older. However, children with serious hearing defects, aphasic difficulties, dysarthria and other special disorders should receive earlier special training.

3. Personal Criteria and/or Informal Methods For Identifying This Child

In identifying this special child one may notice on various occasions that a baby is in some respects "different" from other babies. Perhaps he lies in his crib indifferently; he does not smile; he does not try to grasp things that are offered to him; he does not kick his legs. Perhaps, he does not notice things that should interest a baby; things like colors, sounds, movements. Maybe he is ill tempered, always whining. Perhaps he moves in an odd, jerky manner. Maybe he does not try to sit up at an age when other children manage to sit. Perhaps he is finding it difficult to learn to walk or maybe he walks unlike other children: he may hav a rolling gait or other strange manners. He may not be making progress in his speech: he may stutter or speak a few words that are barely understandable. A child may not smile at you because he does not see you. A young child may appear inattentive to normal conversation because he does not hear you.

Mongoloid children usually constitute one-third of the enrollment in classes for trainable mentally retarded. The mongoloid child can be recognized by physical features such

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as epicanthic folds about the eyes; stubbed neck; short fingers, with curving of the little finger; small c' n and ears; short, broad hands and feet; sparse, fine straight hair; speech disorders and a course low-pitched voice. He is usually an affectionate, happy, friendly child, although the opposite personality traits--aggressive, hostile, and uncooperative --may be evident in a child whose home situations is lacking in affection and approval.

The child who is a potential candidate for the trainable class can usually be identified by visible discrepancies in his physical development in terms of height, weight, and motor coordination. He may be extremely overweight or very thin and underdeveloped; he may have grown much taller than other children of the same age, but more often he tends to be below normal in height. His lack of self-concept and self-awareness may be caused by parental rejection, over-protection, rigidity or pressure.

4. Characteristics

(1) Behavioral

The trainable mentally handicapped child grows mentally at about one-half or less the rate of the average child. Thus we see a TMR child of ten years with an IQ of 35-50 and a mental age of three to four years. He is usually below his chronological age in all areas of development such as height, weight, motor coordination, language development, vision, hearing and social maturity.

As stated above, there is often a wide range of differences between the TMR child and the average child. Also there may be discrepancies within each TMR child. In testing some will show a consistent level of abilities across the functions tested while others may be especially high in verbal skills while testing low in manipulative tasks or vice versa.

Studied observations of characteristics of those classified as TMR disclose a wide range of mental abilities, physical conditions, behavior patterns and social competencies. Differences within the group may vary from hyperactivity to apathetic inactivity; from serious disruptive behavior to amiable conformity; from an essentially normal physical appearance to one of gross deformity. Intellectually all are severely handicapped; however, the heterogeneity of the group is also evident.

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Other observable characteristics are that the
TMR child will be slower in learning tasks, and will
have a limited attention span. Through experience
one finds that his learning is based on structure
and progression. His tasks must be sequential, from
the very simple to the more complex, and his learning
by repetition of the task and activities at which he
can succeed.

(2)  Academic

There are varying degrees of learning potential
and range among trainable students. Since no two
children are alike, the maximum growth limit is dif-
ferent for each. Generally, academic skills are
minimal. A few of those students having more ability
than others may master second and possibly third-
grade reading skills and be capable of developing
number concepts on a limited basis.

The TMR training should consist of experiences
that do not involve insight or mastery of basic
academic skills, but will primarily be habit forma-
tion. For example (there are expected limits, but
the establishment of desirable habits is possible
and necessary) a six-year-old child with an IQ of
50 or less cannot be expected to do the things that
are usual for a three or four-year-old. The estab-
lishment of such behavior habits as elimination con-
trol, talking, feeding, dressing, cleanliness,
politeness, etc., cannot be established as early as
in normal children and will understandably take
longer to establish, but it is possible.

The younger TMR children, during the first few
years, pursue a curriculum which includes developing
the ability to play, developing speech, encouraging
initiative, learning to work and play in a group,
modification of undesirable personal traits through
various techniques of behavior modification, instill-
ing a sense of acceptance and achievement, and
learning those skills necessary for the students'
self-help, health and safety.

The trainable student will not attain personal,
social, or economic security without supervision
and will require a longer period of education and
training than normal students. The academic education
as well as training in self-care, social adjustment,
work habits, manual and vocational training and

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usable diversional activities should extend to the age of 21 if possible.

The trainable student learns best through the use of a very consistent approach. His training requires that the same thing be done in the same way, many times. In training the student, attention is paid to the performance of the task at hand or the skill being mastered. The tasks must be simple --simple enough for him to <u>succeed</u>.

The emphasis must be on <u>doing</u> with pupil involvment in whatever is being taught. The activities must be relevant to the child's social, intellectual, and physical maturity. These students respond to rewards (stars, candy, etc.) and to praise and encouragement. The procedure used with the TMR must be based on an awareness of their uneven, poorly integrated levels of development; their rate; amount, and ways of learning.

School problems are expected with TMR students because of their emotional handicaps. Handicaps such as hyperactivity, failing to anticipate the consequences of their own actions, instability and poor group acceptance only add to their already established physical and mental difficulties.

(3)   Functional

The younger TMR student is capable of learning to share, take turns, and follow directions carefully and willingly and know the rudiments of social participation. As he grows older his social potential would consist of establishing cooperative behavior by being able to get along with other adolescents and adults, learning self-control in work and play situations, and respecting the rights and property of others. Very few TMR students are capable of social or economic independence. However, cooperation with family, neighbors, and school peers are all within his potential.

In TMR's of all ages, one of the most easily observed social behaviors connected with play interests and companions, is characterized by enjoyment and contentment with play materials and companions many years below the student's chronological age.

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Inability to build or maintain satisfactory
interpersonal relationships with peer groups, teachers,
adult groups, and later, on the job, is often charac-
teristic of the trainable student; therefore, prior
to and during adolescence, he should learn to be
cooperative, well-behaved, and well-mannered, do his
work cheerfully, stay with his job and be willing to
do what he is asked to do. These qualities will be
of great value to the TMR students who will work and
mingle with other adults.

The TMR's earning capacity is limited by the
very nature of the kind of work he is capable of do-
ing; thus, he will always need additional economic
support.

He needs supervision and will not be capable of
establishing completely independent living quarters,
but will be able to function in the cooperative
community homes now available in many areas for older
retardates.

5.  Recommended Resources for Additional Information

The following is a list of schools, hospitals and agencies
available for further understanding and information of the
trainable mentally retarded:

Granite Habilitation Center
3605 South 380 East
Salt Lake City, Utah

Garfield School
1838 South 1500 East
Salt Lake City, Utah

Columbus School
2530 South 500 East
Salt Lake City, Utah

American Fork Training School
American Fork, Utah

Salt Lake Association for Retarded Citizens
2953 South 7th East
Salt Lake City, Utah  84106

Council for Exceptional Children
1920 Association Drive
Reston, Virginia  22091

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Utah Division of Mental Health
119 East 2100 South
Salt Lake City, Utah   84601

Utah State Board of Education
Special Education
University Club Building
Salt Lake City, Utah

Primary Children's Hospital
320 12th Avenue
Salt Lake City, Utah

Children's Center
1865 Medical Drive
Salt Lake City, Utah   84112

Easter Seal Workshop
4868 South State
Salt Lake City, Utah

Utah Speech and Hearing Center
705 South 900 East
Salt Lake City, Utah

Utah Association for the Prevention of Blindness, Inc.
2033 South State
Salt Lake City, Utah

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BIBLIOGRAPHY

Chaney & Kephart, Motoric aids to perceptual training, Columbus,
    Ohio: Charles E. Merrill Publishing Co., 1968.

Kephart, N. C.  The slow learner in the classroom, Columbus,
    Ohio:  Charles E. Merrill Publishing Co., 1971.

Kilbourne, L. L.  Effective education for the mentally retarded,
    New York: Vantage Press, Inc., 1965.

Kirk, S. A.  Educating exceptional children, Boston: Houghton
    Mifflin, 1962.

Malloy, J. S.  Teaching the retarded to talk, New York.
    The John Day Co., 1961.

Peter, Laurence J. Prescriptive teaching, New York: McGraw
    Hill Publishing, 1965.

Young, M. A.  Teaching children with special learning needs,
    New York: The John Day Co., 1967.

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LEARNING DISABLED

by C. W. Preston, Ph.D.


DEFINITION

Traditionally, school programs for handicapped children have identified and classified the children according to major handicaps leading to placement into programs for the deaf, mentally retarded, blind or partially sighted. One result of the thrust toward a qualitative increase in services for the educationally handicapped has been the identification of a heterogenous population who do not fit into any of these categories, yet are unable to learn within the ordinary class-room. A mnemonic definition of this population states that these children "are not blind, yet they can't see (perceive), are not deaf, yet they can't hear (comprehend)."

The commonality inherent in this population resides in a significant intra-individual difference; thus a discrepancy in ability serves as the primary distinguishing characteristic of children labeled as learning disabled. The emphasis on discrepant abilities within the individual precludes a clear-cut, universally accepted definition. Emerging from the plethora of definitions are certain commonalities which help to establish the parameters of this population. Each includes a statement of who these children are not (the exclusion clause). Each is also talking about specific deficits in learning processes which result in developmental discrepancies or uneven development patterns (the disparity clause). Some definitions get at possible causes (e.g., central nervous system dysfunction). What is not explicitly stated in most definitions but has nonetheless been accepted is that these children require individual diagnosis and specific methods of remediation geared to their areas of deficit.

One of the more recent definitions of learning disabilities occurs in Federal legislation, Public Law 91-230 (dated April 13, 1970) which states: "The term 'children with specific learning disabilities' means those children who have a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such disorders include such conditions as per-ceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include children who have learning problems which are primarily the

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result of visual, hearing or motor handicaps, of mental retarda-
tion, of emotional disturbance, or of environmental disadvan-
tage."

Making a differential diagnosis of learning disability and
thus eliminating inclusion into other categories of exceptional-
ity is done on the basis of two fundamental presumptions regard-
ing this population: generalized integrity and a deficiency in
learning (Johnson and Myklebust, 1967). Historically there has
been a population of children labeled mentally retarded who have
been reclassified as learning disabled. In-depth analysis of
their abilities (as opposed to consideration of a global IQ
score) has revealed that they did not possess the overall intel-
lectual inferiority characteristic of the retardate; rather,
they exhibited a pattern of disabilities which, with proper
remediation, allowed them to function at a near normal level.
Children with learning disorders in the perceptual, conceptual,
language or academic subject areas tend many times to have
correlated behavior disorders of hyperactivity, lack of atten-
tion and general maladaptive behavior. However, not all chil-
dren with behavior disorders can be classified as having
learning disabilities which require specific remediation.
It should also be noted that there is  an overlapping of
handicapping conditions of multiple involvement. In such
cases, the children benefit most if their learning disability
is treated directly while classroom adjustment is provided
for their other handicapping conditions (Kirk and Kirk, 1972).


## ETIOLOGY

The causes of learning problems are not clear cut and
easily identified. In this area there is a dichotomy between
the medical profession, which is concerned with psychoneuro-
logical etiology, and the educational profession, which is
concerned with the behavioral correlates pertinent to class-
room learning. The term "learning disabled" is primarily an
educational concept. According to Kephart (1967) the causes
of learning disabilities seem to cluster into three major
categories: brain injury (central nervous system dysfunction),
emotional disturbance, and experience.

Causes of brain-injury are the most well-documented. They
are usually divided into those occurring prior to birth (pre-
natal) and after birth (post-natal). Maternal illness (e.g.,
German measles) during pregnancy, and the age of the parents
(over 35) are examples of prenatal causes. The most signifi-
cant perinatal birth injury is due to lack of oxygen (anoxia).
Some causes of anoxia are a difficult labor, congenital defects
and the attendant exigencies of premature birth (e.g., oxygen

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control in an incubator).  Nervous system damage can occur after birth from head injuries, meningitis and toxic conditions such as lead poisoning.

Emotional disturbance as the cause of a learning problem is likely to be the result of an emotional trauma which has been prolonged over a period of time, at least to the degree where there is interference with the functional relationships of the central nervous system.  Behavior in such cases approximates that resulting from brain injury (e.g., hyperactivity, explosivity, etc., including disruption of the learning process.

Experience as a cause includes factors such as developmental lag and lack of environmental experience.  A child who has not experience manipulating toys and writing materials will probably be lacking in the fine motor coordination expected of children entering kindergarten and first grade.  Deprivation of auditory experience, that is using the tools (words) which culminate in logic and reasoning powers, can cause a developmental lag in language use.  Visual deprivation results from lack of exposure to such visual aids as picture books, Experiential deficits are not confined to any socio-economic group or nationality.

Identification of the causes of learning problems can be useful in the proper selection of remedial programs.  Developmental information, ascertained from the parents, provides important clues to the etiology of the learning disability.

## INFORMAL METHODS OF IDENTIFICATION

A broad knowledge of normal child development and an understanding of the processes involved in learning are essential prerequisites to informal identification of learning disabled children.  Inconsistencies within an individual's overall rate of development and level of abilities are the crucial clues in identification.  Sensitivity to the concerns expressed by those in daily contact with the child (specifically parents and teachers) yields important details directly leading to informal identification.  For example, children with auditory problems are often characterized as "never paying attention" and "never following directions."  Or a child who is hyperactive may be characterized as one who "won't concentrate for more than a few minutes."  Perhaps most disturbing to teachers are the children who don't respond to their teaching techniques, despite modifications, and can't learn to read although they appear normal otherwise.

Use of an informal questionnaire can be of utmost help in distinguishing the learning disabled child from his peer group.

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Broad categories used to elicit such information are:

(1) Auditory Comprehension and Listening, e.g., ability to follow directions and comprehension of classroom instruction;

(2) The Spoken Language, e.g., functional vocabulary and ability to recall words;

(3) Orientation, e.g., utilization of time concepts and spatial orientation;

(4) Motor Development, e.g., gross motor and ability to manipulate tools and objects;

(5) Behavioral Characteristics, e.g., social acceptance, and reaction to responsibility.


## CHARACTERISTICS

Characteristics of learning disabled children can be most easily considered by arbitrarily grouping them into six categories: 1) motor activity, 2) emotionality, 3) perception, 4) symbolization, 5) attention and 6) memory. The categories are not mutually exclusive; in reality, learning disabled children tend to display behavior associated with several (and sometimes all) categories. Each of the characteristics will be considered as a separate entity although in practice there is no clear-cut distinction. For example, a hyperactive child usually has emotional involvements such as explosive behaviors as well as difficulties in attending. The following discussion is adapted from Myers and Hammill (1967); suggestions for further reading are given under Recommended Resources.

(1) Disorders of Motor Activity.

There are four motor activity disorders associated with learning disabilities: hyperactivity, hypoactivity, incoordination, and perseveration. Hyperactivity, defined as excessive mobility, is the most common form of motor disability. In general such children are restless, inattentive, and have erratic behavior. This is perhaps one of the teacher's most consistent complaints about learning disabled children. Hypoactivity is defined as a lack of sufficient motor activity. The child is apt to be quiet and lethargic. Because of the lack of obtrusive classroom behavior, this disorder is seldom identified.

Incoordination has two primary characteristics: physical awkwardness and/or poor motor integration. It is commonly found in learning disabled children. Children who have this problem exhibit such behaviors as:

A. poor performance on tasks requiring a high
   degree of coordination such as running and
   skipping;
B. walking gaits which appear rigid and stiff;
C. poor performance on tasks requiring fine
   motor skills such as drawing and writing;
D. difficulties in balance and clumsy behavior
   in general.

Perseveration is defined as the automatic and
involuntary continuation of behavior. It can occur
in almost any expressive motor behavior such as
speaking, writing or drawing. In speech, a child may
have difficulty shifting from one topic to another.
In writing, a child may make an error, erase it,
then make the same error again. In drawing, he may
cover an entire page with one color.

(2) Disorders of Emotionality.

Emotional instability is a frequently mentioned
characteristic in the literature concerning brain
dysfunction in children. The emotional ability
associated with this syndrome often results in lack
of self-control, impulsive behavior and temper tant-
rums or outbursts having no apparent cause.

(3) Disorders of Perception.

Perceptual disturbances are characteristic of
learning disabled children and can be defined as
the inability to identify, discriminate and interpret
sensations. The terms "decoding problem" and "recep-
tive difficulty" are used interchangeably to describe
this problem. Behavioral correlates are inadequate
reproduction of geometric forms, figure-ground con-
fusion or letter reversals or inversions. Children
exhibit symptoms in several areas of perceptual dis-
orders at one time.

There is a quantity of literature indicating
the importance of perceptual adequacy in concept
formation, abstraction ability, and cognitive symbolic
behavior. Early remediation is of prime importance
to minimize later academic failure.

(4) Disorders of Symbolization.

Symbolization is one of the highest forms of
mental ability and involves both concrete and

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·abstract reasoning. In the process of symbolization the brain integrates perceptions and memories and produces thought processes or chains. This process can be divided into receptive (decoding) and expressive (encoding) activities. Poor performance in four subdivisions of symbolization are most frequently found:

A. Receptive-Auditory. This disorder results in poor understanding of spoken symbols, requests to repeat and confusion of commands or directions.
B. Receptive-Visual. Children with this problem are unable to comprehend what they read and often subvocalize.
C. Expressive-Vocal. This problem results in a difficulty in formulating thoughts for speech.
D. Expressive-Motor. This is concerned with the inability to write (dysgraphia) as well as produce nonvocal communication.

Disorders in any of these areas can prevent attainment of success in academic pursuits.

(5) Disorders of Attention.

School success demands that a child be able to focus his attention at the appropriate time as well as move on to a new task when directed to do so. The problem of insufficient attention is labeled distractibility, hyperawareness, or short attention span. The child may be unable to block out stimuli such as noise from outside the roc  or the buzzing of the neon lights.

(6) Disorders of Memory.

Memory is a postulated process which is not directly observable. Disorders of memory involve difficulty in the assimilation, storage and retrieval of information. They may be associated with visual, auditory or other learning processes. Memory has a commanding influence on learning and disorders of memory frequently occur in conjunction with the other disorders mentioned above.

The purpose of the delineation of the characteristics of learning disabled children is to give an idea of what this heterogenous population is like. Now that this has been

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accomplished it is necessary to reiterate the basic fact about these children--each one has a different pattern of abilities and disabilities.  Dr. Jeanne McCarthy, now at the University of Arizona, underscored this problem beautifully in her "Fifteen-Ten Commandments of Learning Disabilities."  Number 10 states:

> Thou shalt never again list a set of characteristics of children with learning disabilities.  Thee are now acutely aware of the fact that each child with a severe learning disability is idiosyncratic unto himself.

This is a fitting note on which to end a discussion of this complex and challenging field.

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BIBLIOGRAPHY

Kephart, N. C., The slow learner in the classroom. Columbus,
     Ohio: Charles E. Merrill, 1971.

Kirk, S. A., & Kirk, W. R. Psycholinguistic learning dis-
     abilities: Diagnosis and remediation. Urbana, Ill.:
     University of Illinois Press, 1972.

Johnson, D. J. & Myklebust, H. R. Learning disabilities,
     New York: Grune and Stratton, 1967.

McCarthy, J. M. Toward dispelling the mystique of learning
     disabilities--the mystique is a mistake. Association
     for Children with Learning Disabilities, Inc.

Myers, P. R. & Hammill, D. D. Methods for learning disorders,
     New York: John Wiley and Sons, 1969.

# LEARNING DISABILITIES

## By Betty D. Harrison, Ph.D.

### 1. Legal Definition

Children with a special learning disability exhibit a
disorder in one or more of the basic psychological processes
involved in understanding or in using spoken or written
languages. These may be manifested in disorders of listening,
thinking, talking, reading, writing, spelling, or arithmetic.
They include conditions which have been referred to as percep-
tual disorders, 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 distur-
bance, or to environmental disadvantage (first annual report,
National Advisory Committee of Handicapped Children, January
31, 1968, p. 34, U. S. Department of Health, Education and
Welfare, Office of Education).

### 2. Practical Definition

Children with learning disabilities have a difficult time
learning even when they want to, as contrasted with motivational
or emotional problems wherein the child can learn if he will
just put forth the effort. The pattern of performance may be
very erratic with fluctuations from day-to-day, subject-to-
subject, or word-to-word on a single printed page. Reading is
usually the most noticeable deficiency area. A normal child
may need up to 600 exposures to a single sight word in order
to master that word to the immediate recognition level; a
learning disabled child may need 1200, 1900, or possibly more
exposures before he has mastered the word. And he is less
likely to receive the practice and exposures than the normal
child. The learning disabled child's problem may show up
only in a few, readily identifiable situations, such as reading,
or the problem may be so pervasive that it extends into all
areas of his life and disrupts his social, physical, and
emotional as well as intellectual activities.

The exact etiology of a child's learning disability may
never be known. Tests may reflect the erratic pattern of the
child without really telling us why he is having the learning
problem. Not even the EEG can detect all learning disabled
children. While it is well to have as much medical, psychologi-
cal, academic, and social information as possible on the child
with suspected learning disabilities, treatment should not be

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delayed until this information is gathered in its entirety. It is assumed that special learning disability children have some type of impairment to the central nervous system. When the behavior of the child indicates that such an impairment may exist, the child should be placed in an appropriate treatment program as soon as possible as the learning disability is likely to become more severe with age due to the emotional overlay which may develop as a result of repeated exposure to experiences of failure in the classroom as well as in the home situation.

Learning disabled children, by legal definition, are assumed to have average or better intelligence. However, test results may reflect the disability rather than the actual IQ and should be interpreted by profile of performance rather than by global IQ scores. It is also possible for a mentally retarded or blind child to have a learning disability as a secondary handicap. In many cases, the lack of progress shown by mentally retarded children in special classes may be due to failure to treat the secondary learning disability. In general, it is better to assume that a child has a learning disability and give him the careful programming recommended in a treatment program for learning disabilities children. In summary, a learning disability may occur as a secondary handicap to a mentally retarded, blind, hard-or-hearing, etc. type of child or it may occur as a primary handicap to a child with average or better intelligence determined by a profile of performance on tests such as the WISC, ITPA, etc.

3.   Descriptors

The ten characteristics most often attributed to the learning disabilities child are 1) hyperactivity; 2) perceptual-motor impairments; 3) emotional liability; 4) general coordination deficits; 5) disorders of attention; 6) impulsivity; 7) disorders of memory and thinking; 8) specific academic disabilities; 9) disorders of speech and hearing; 10) equivocal neurological indicators such as soft neurological signs and electroencephalographic irregularities such as an abnormal EEG.

4.   Personal Criteria and/or Informal Methods for Identifying This Disabled Child

Observational checklists may be used by teachers and observers. The merit in behavioral checklists is in comparison with expectations for the child's age group. Inasmuch as the goal for most learning disabilities children is to return them to a regular classroom setting or to keep them in a regular classroom setting, a knowledge of the child's strengths

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and weaknesses in classroom and social behavior is very help-
ful.  The more specific the checklist, the more likely it will
be helpful in planning the treatment program for the child.

5.  Characteristics

(1)  Behavioral--profiles on tests such as the WISC or
the ITPA which show extreme highs and lows and par-
ticularly reflect average or better performance in
some areas are extremely useful in identifying and
planning for the child.  A flat profile, particularly
below the chronological age of the child very seldom
indicates a learning disabled child.  The same is
true with regard to measurement on standardized
tests, whcih frequently shqw a wide range of scatter
from basal to ceiling and variable performance in
different tasks at the same age level for the learn-
ing disabled child.

(2)  Academic--the only common characteristic learning
disability children have is discrepancy between what
they should be able to do and what they are doing.
This may be specific to the subject matter area--
some can do math but not reading while others show
the reverse.  But almost all learning disability
children have difficulty with spelling and an in-
ability to relate sound symbol to printed symbol.

(3)  Functional Capacities--the same perceptual problems
which interfere with academic achievement may also
interfere with a child's social relationships.
Sequencing problems make it difficult to participate
in game situations; an accidental bump into somebody
in the hall may be interpreted as an act of aggres-
sion; a perseverative child may repeat all day his
frustrations and teasing on the bus on the way to
school in the morning.  Social problems must be
treated the same as academic problems with specific
programming.

6.  Recommended Resources for Additional Information

(1)  For further understanding

A.  State Guides such as the Handbook for Parents
and Teachers on Learning Disabilities by Polk
County Board of Education, 112-116 Eleventh
St., Des Moines, Iowa, 1970 of the Utah State
Handbook for Learning Disabilities available
from Special Education Services.

B.  The Slow Learner Series from Charles E. Merrill
Publishing Company, 1300 Alum Creek Drive,
Columbus. Ohio, 43216.

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C. The extensive publication list available from
   Academic Therapy Publications, San Rafael,
   California 94901. (Example: Building Spelling
   Skills in Dyslexic Children by John I. Arena)
D. The Dimensions in Early Learning Series from
   Dimensions Publishing Co., San Rafael, California
   94903. (Example: Arithmetic and Mathematics
   by Carl Bereiter)
E. The Developmental Learning Materials, 3505 N.
   Ashland Avenue, Chicago, Illinois 60657 (Example:
   Helping Children with Reading Disability by Ruth
   Edgington)
F. The Children's House Magazine, P. O. Box 111,
   Caldwell, N.J. 07006.
G. The pamphlet for parents by Margaret Golick
   (referenced through Association for Children with
   Learning Disabilities)
H. Psycholinguistic Learning Disabilities: Diagnosis
   and Remediation by Samuel and Winifred Kirk,
   University of Illinois Press, 1971.
I. Children with Learning Disabilities by Janet W.
   Lerner, Houghton Mifflin Company, 1971.
J. The Remediation of Learning Disabilities by
   Robert E. Valett, Fearon Publishers, 1967.


CHECKLIST FOR CHILDREN WITH PERCEPTUAL OR
PSYCHOMOTOR PROBLEMS

1. Behavioral Description, general symptoms.

| Symptom | Manifestation |
| --- | --- |
| HYPERACTIVITY | This child shows restlessness, inability to sit still or to stand without wiggling or squirming. |
| HYPERKINESIS | He shows involuntary muscle movement; he cannot control muscular over-activity. |
| INCOORDINATION | He has awkward, jerky movements, poor balance, difficulty with grasping, manipulation, small muscle coordination and clumsiness. This is often due to the concommitant fault of slow maturation. |
| CRIPPLING OF EXTREMITIES | He shows limping, limb favoritism, arm or leg weakness, withering of limbs. |

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| Symptom (cont.) | Manifestation (cont.) |
|---|---|
| CONVULSIONS | These may be short (petit mal) or pro-longed (grand mal) sever muscular spasms, sometimes unconsciousness occurs. |
| TALKATIVENESS | He is guilty of consistent chattering and irrelevant conversation. Disorganiza-tion of sentences is often seen because he may lose sight of goals while talking. |
| FLIGHTINESS | Lack of steadiness is found in these children. |
| EXPLOSIVE LAUGHTER | Sudden, loud and uncontrollable laughter is frequently seen. |
| ANNOYING, TEASING | The disturbing of others to gain atten-tion to himself frequently occurs. He may also do it to distract others from his deficiencies in academic areas. |
| BLANKNESS | Black-out spells of a few seconds dura-tion are not uncommon with the child who has psycho-motor disturbances. |

2. Emotional Activity

| | |
|---|---|
| IMPULSIVITY | Often he reacts without thinking and demands immediate attention. He must be helped to develop inner controls on his behavior. |
| EXCESSIVE REACTION | He responds too quickly and too much to stimuli. |
| ANXIETY | He is overly worried, upset by failures, clinging. |
| INSECURITY | He is in constant need of attention and encouragement. |
| EXCITABILITY | This is another type of over-response to stimuli or extreme over-reaction to normal stimulations. |
| RAGE REACTION | Sudden, explosive anger with apparently little provocation. |
| DAY DREAMING | He withdraws from reality and problem situations. |

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| Symptom (cont.) | Manifestation (cont.) |
|---|---|
| IRRITABILITY | He is touchy, cross and out of sorts. |

3. Learning and Language

| | |
|---|---|
| DISTRACTABILITY | To these children, all items have equal value and they cannot concentrate on any one thing. |
| SHORT ATTENTION SPAN | The child cannot work at anything for a very long time and often does not finish tasks asked of him. |
| CONFUSION | This child misses the total concept (Gestalt): he often cannot figure out what is needed or wanted or what is going on. |
| RETENTION | This child's ability to retain information is poor, even for short items or bits of information. |
| PRESERVATION | This is a tendency to repeat an activity or phrase after the meaning and the purpose have ceased. |
| PERCEPTION- AUDITORY | He cannot distinguish isolated sounds against background noises. |
| PERCEPTION- VISUAL | The child cannot see a whole or Gestalt against a distracting background. |
| SPEECH | Stuttering, substitution of gestures and signs for speech, hesitant and slow speech. |
| PENMANSHIP | With these children, writing is poor because of defective muscular coordination. It is cramped because of psychological and physical restrictions and is irregular because he himself perceives the world about him in an inconsistent manner. |
| ARITHMETIC | Difficulties with number concepts, number retention and abstract figures are common with these children. |

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| Symptom (cont.) | Manifestation (cont.) |
|---|---|
| COLORING | Usually the child cannot stay within lines due to the fact that he is unable to distinguish them from background material. |
| READING AND WRITING | Reversal of letters and words. He must be taught to look at letters and words. |

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IDENTIFICATION OF HEARING IMPAIRMENT

by Grant B. Bitter, Ed.D.


Although hearing impairment is considered to be an "invisible handicap," which interrupts the learning process through deficiencies in language growth and development, severe educational, social, intellectual, emotional, and psychological deficits can be prevented and/or minimized through early detection, adequate and accurate diagnosis, treatment, are, and education. Indeed, if the various dimensions of the child's environment--the family, school, community, and church--are dynamic and supportive, hearing impairment of any magnitude need not deter him from becoming functional, productive, and a full participating citizen with the culture.

Therefore, to better understand what hearing impairment is, and to be able to more adequately cope with the implications thereof, the following information is provided.

1. General Knowledge About Hearing

The Hearing Process: Sound waves pass through the ear canal, beat against the eardrum, causing vibrations in the chain (ossicles) of three tiny bones in the middle ear. The third bone, the stapes or stirrup, is the smallest bone in the human body. It fits into a tiny window between the middle and inner ear. As the stapes moves, fluid in the inner ear carries vibrations into the canal of a delicate spiral structure, the cochlea, where thousands of tiny sensory cells may be activated. Movement of tiny hairs stimulate nerve fibers to generate electrical impulses which are carried through the auditory nerve to the brain for interpretation. The whole middle ear is about as big as a green bean or pea seed; these three tiny bones could be placed on the tip of the little finger; the inner ear is even much smaller than the middle ear. Listening and talking are such an integral function of everyday living, through the process just described, that most people take hearing for granted and do not, therefore, always exercise wisdom in preserving it.

2. Conservation of Human Hearing and Need for Services

It is estimated that 15 million Americans have some degree of hearing impairment including 3 million children. From 250,000 to 300,000 persons in America are considered to be deaf--those for whom the auditory mechanism is extremely limited. In the United States and those areas of the world for

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which we have data, some 3.5 ⸳    ⸳c of school-age chil-
dren have some degree of h⸳     ⸳s.  Therefore, disease,
accident, noise preventio⸳      ⸳iation are obviously
important parameters of h⸳      ⸳rvation.

## Specialists

-    The professionals who are concerned with the conservation
and utilization of hearing include:  the otologist, an M.D. who
specializes in the diagnosis and treatment of the ear; the
otolaryngologist, an M.D. who specializes in care of the ear,
nose, and throat; the audiologist who specializes in hearing
testing and hearing aid evaluations in regard to the nonmedical
aspects of hearing disorders.  The trained educator of the deaf
and the regular classroom teacher with the supportive help of
the interdisciplinary team, including the educational audiolo-
gist, the stratistician, speech or hearing clinician, the
academic tutor, the social worker, the nurse, the doctor,
school counselor, psychologist, and parents are important
team members who participate in the organization and implement-
ation of diagnostic and educational programs and evaluations.

## Definitions

Hearing Impairment is a generic term which refers to
children who have any degree of hearing loss (slight, mild,
moderate, severe, profound).  The audiometric assessment is
identified by a unit called the decibel (db) which is defined
as the intensity of sound as determined by the pressure of
sound waves--based on the measurements as approved by the
International Standards Organization (ISO).

Thus, hearing impaired children refer to those who have
been diagnosed by a specialist as having a slight hearing loss
of 27 db or more, ISO Standard; to those who have been diagnosed
as having a profound hearing loss of 91 db or more (ISO refer-
ence).

Hard of Hearing children refer to those whose primary
source for the development of speech and language comes through
the auditory channel and whose sense of hearing is functional
with or without the hearing aid.  However, the use of amplifica-
tion may be very beneficial.

Deaf children are those whose primary source for the
development of speech and language proficiency is received
through the sense of vision; however, the sense of vision is
complemented by competent use of tactile, kinesthetic and most
important, the auditory sense, which enhance listening and
talking skills.  Recent advances in prescriptive hearing aid

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fitting along with refinements in audiometric equipment are offering much greater advantages to the deaf in utilizing residual hearing.

Those who serve on the interdisciplinary team in the diagnosis of hearing impairment must be very cautious in delimiting definitions of hearing impairment to avoid the tyranny of rigid classification and stereotype. (quantitative measurements in decibels or percentages, or by the qualitative terms of type of hearing loss, site of lesion, speech discrimination scores, and so on, must be considered only as important parameters in the diagnostic and educational process). Each child's potential must be assessed individually on the basis of not only degree of loss or type of loss but age of onset, intelligence, personality, age when education begins, quality of teaching, attitudes of family, church, school, community;--indeed, a multitude of physiological and environmental conditions must be considered. All aspects of the "functional child" must be weighed carefully.

Principal types of Hearing Impairment

Conductive: loss of hearing resulting from any dysfunction of the outer and/or through to the middle ear. The primary effect is a loss of loudness. Perception of sound is restored with an increase of loudness. Loss of hearing may vary from mild (27 to 40 db, ISO Standard) to moderate (56 to 70 db, ISO Standard) and rarely exceeds 70 db (ISO) through the speech frequency range. Medical treatment including surgery may often restore or significantly reduce this kind of hearing loss. Hearing aids are generally very useful.

Sensori-neural (perceptive or nerve impairment): loss of hearing resulting from a dysfunction of the inner ear. Speech frequencies affecting the clarity and intelligibility of speech are affected. This loss may vary from slight to profound (91 db or more, ISO Standard). There is no satisfactory response to medical treatment at present. The use of the hearing aid may be very helpful; early identification, diagnosis and education are of prime significance. Sensori-neural and conductive losses frequently occur together.

Central Impairment: results from a dysfunction along the pathways of the brain from the brain stem to and including the cerebral cortex. This impairment may be highly complex and frequently involves the symbolic processes of the mind in terms of receptive and expressive language.

Mental retardation, learning disabilities, behavioral disorders, epilepsy, cerebral palsy, visual impairment and other

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disorders may also be found in combination with hearing impairment.

Etiology (causal factors): Common diseases including virus infections, such as measles, German measles (rubella), scarlet fever, mumps, whooping cough, meningitis frequently cause hearing impairment of the sensori-neural type. Inflammation of the middle ear known as otitis media is also a very common cause of hearing loss. In addition, otoscler (a spongy-like mass that grows around the stapes, locate n the middle ear) causes hearing problems. Foreign objects (peas, insects, excessive wax, etc.) that get into the outer ear canal may cause temporary loss. Injury and accidents such as blows to the ear, skull fractures, and conditions which cause intense pressure may also do damage. Certain medicines and antibiotics (aspirin and quinine t persons sensitive to them, and kanamycin, dihydrostreptomcyin ) may cause loss of hearing. Sustained sound of 80-85 decibels and above over a long period of time may induce hearing impairment, particularly in the higher frequency areas. Radiation exposure, and Meniere's disease (dizziness, nausea, ringing in the ears), as well as presbycusis (which is hearing loss due to aging) are other factors which affect hearing.

If hearing impairment of any degree is suspected because of any causal factors, prompt medical, audiological, and educational assessments are imperative in determining the immediate and long-range needs of the hearing impaired child.

## Description of the Hearing Impaired Child

The behavior of the hearing impaired child is frequently described as follows: "Won't listen. Hears when he wants to. Can't talk plainly. Shy; backward; withdrawn; timid; a bully; talks loud; day dreams; seems to favor one ear over another; slow; never finishes work; non-cooperative on the schoolgrounds. Can see if he watches me work; is careless; lazy, poor reader; mixed up, incomplete sentences in written composition and oral expression, unusually attentive, or unusually bored. It should be remembered that these descriptions are only symptomatic indicators of behavioral differences. If hearing loss is suspected, referrals should be made to the appropriate specialist.

## Informal Criteria for Identifying Hearing Problems

Any of the following symptoms may result from other kinds of deficits singularly or in combination with hearing impairment. Their presence, however, ought to be considered as sufficient cause for an auditory assessment:

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(1) If the child has a history of respiratory infections, including ear trouble.
(2) If he favors one ear over another in locating the source of sound.
(3) If he begins to slur and/or omit consonant sounds
(4) If he is constantly watching the face of the speaker.
(5) If he does not pay attention to the activities of the class.
(6) If his oral and writ n communication becomes disconnected, confused, mixed up.
(7) If there is a noticeable change in voice quality; if the child ceases to talk very much and increases in unusual use of gestures in communication.

Characteristics

The hearing impaired child is generally more like his hearing peers than unlike them. If an auditory deficit is the only disorder, the child may be average or normal in height, weight, neural-motor functions, and intelligence. His potential capacity and ability--intelligence, language fluency, psychological, social and emotional stability--when compared with his actual functioning may range from age-level expectancy and performance and above, to a 2-to-7 year deficit, depending on his physiological condition and the adequacy of his environment.

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Implications of Hearing Impairment and Educational Needs

| Classification of Hearing Loss (ISO Reference) | Effect of Hearing Loss on Speech and Language | Prognosis of Educational Needs |
|---|---|---|
| SLIGHT LOSS (27-40 db) | May have difficulty hearing faint sounds. Will experience no inconvenience generally in school situations. Will probably have no defective speech as a result of hearing loss. | Regular class involvement; favorable seating and lighting desirable. May benefit from hearing aid. Vocabulary building highly desirable in meaningful context of school subjects. |
| MILD LOSS (Marginal) (41-55 db) | Understands conversational speech at a distance of 3-5 feet (face to face). May miss as much as 50% of class discussions if voices are faint or speaker's face is not visible. May show limited vocabulary and some speech differences if loss is in high frequencies. | Careful educational planning implementation and follow-up is essential in the regular classroom. Speech-reading helpful; use individual hearing aid. Speech training and vocabulary development helpful; speech assistance and conversation needed. |
| MODERATE LOSS (marked) (56070 db) | Conversation must be loud (understanding at a distance of 3 feet). May not understand what is said in group discussions. May have defective speech if child has high frequency loss (s, z, sh, ch, j, substitution of t and d for k & g, etc.). May have difficulty in language expression. Limited vocabulary. | Needs meaningful social experience with peers and teachers. Needs hearing aid, auditory training, special assistance in language and speech, vocabulary development, speech-reading, reading, writing, etc. Favorable seating; may need special class assignment if hearing clinicians, academic tutors and/or other support personnel are not available. |

| SEVERE LOSS (71-90 db) | May hear voice at several inches from the ear. Hears loud noises at some distance horns, airplanes, dogs barking. Speech and language does not develop spontaneously. Voice may or may not have good quality. May discriminate between vowels but not consonants at close range. Without constant language and speech experience, there may be deterioration. Voice may sound different. | Speech, language, auditory training; use of hearing aid. Speech reading, reading, writing, speaking are essential. Constant stimulation by peers and family in educational and social settings; may need special educational experience with trained teacher of the deaf if not well integrated in public school. Selection must be made carefully at all levels to assure the best educational opportunity. Family education and support essential and with help of resource personnel. |
| PROFOUND LOSS (extreme) (91 db or greater) | May hear loud shout one inch from ear. Responds to vibrations--loud noises. Speech and language does not develop spontaneously. Relies on vision rather than hearing for communication; without constant usage, speech and language may deteriorate. Voice may sound different. With new developments in the refinement of the hearing aid, and audiometric equipment, and meaningful use of residual hearing, many of these children are developing listening, thinking, and talking skills which are greatly expanding their intellectual, educational, and social horizons. | Child should have best educational, social opportunities available. Emphasis is on all language skills, auditory training concept development, speechreading, speech, reading, and writing. Qualified teachers of the deaf are needed either in special class settings of as resource persons (sometimes called speech and hearing clinicians, academic tutors) to the regular classroom teacher. Continues appraisal of educational needs in regard to the most appropriate methods of communication must be made. Constant association with hearing peers and family in social and community settings are invaluable. |

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References: State of Utah

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846 20th Street
Ogden, Utah 84401
Phone: (Ogden) 399-563. (Salt Lake) 364-6181

Utah State Board of Education
Special Education
136 University Club Building
Salt Lake City, Utah
Phone: 328-5982

Utah State Board of Health
Speech and Audiology
44 Medical Drive
Salt Lake City, Utah
Phone: 328-6175

Utah State University
Department of Communication Disorders
Logan, Utah
Phone: 752-4100

Brigham Young University
Department of Communication Disorders
Provo, Utah 84601
Phone: 374-1211

Special Projects

Project NEED (Facilitating the Integration of Hearing Impaired
    Children into Regular Public School Classes)
Department of Special Education
RM 218A MBH
University of Utah
Salt Lake City, Utah 84112
Phone: 581-8442 or 581-8460

Project NEED (Facilitating the Integration of Hearing Impaired
Children into Regular Classrooms) is entering its third and
final year (funded by BEH). During this year (1973-74), the
major concentration of the project staff is the production of
the intervention material to be in the form of sound filmstrips

and pamphlets. This material is to be aimed at helping the
regular classroom teacher prepare for the hearing impaired child
in the regular classroom. This training package, or Systems
O.N.E., (orientation to the normal environment) will first be
produced in prototype form, field-tested, revised, and produced
in its final form. In addition to producing this package for
use, Project NEED is revising A Review of the Literature Per-
taining to the Integration of Exceptional Children into Regular
School Classrooms for dissemination. An additional printing
of Integration of the Hearing Impaired: Educational Issues
made this report available to interested persons throughout the
United States.

Project SKI-HI (Early Identification, Parent Home Project)
Utah School for the Deaf
846 20th Street
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# THE VISUALLY HANDICAPPED CHILD

by Ruth H. Craig, M.A.

## Legal Definition

The term "visually handicapped" is applied to individuals with a wide range of visual disability, from total blindness to a much less severe limitation. A person is "legally blind" (sufficiently disabled to be entitled to certain legal allowances) if his visual acuity as measured on the Snellen chart is 20/200 or less in the better eye, with the best possible corrective lenses. This means that, at best, he can see from a distance of twenty feet what the person with "normal" vision can see from two hundred feet. An individual also qualifies as legally blind if his field of vision is severely restricted, even though what vision he has is better than 20/200. With "pinhole" or "tunnel" vision, for example, an individual can see objects only when they are directly in front of him, and may be able to read only a word or two with each fixation of his eyes.

A person is usually considered "partially seeing" if his vision is between 20/70 and 20/200. Children have traditionally been assigned to special classes or to the case load of the itinerant or resource vision specialist if their vision falls within this range. If vision is known to be deteriorating, or if there are other complicating factors such as chronic illness--diabetes, for example--a child may be included in a special education program for the partially seeing when his vision is still 20/60.

## Practical Definition

For many years ophthalmologists felt that all children who were legally blind should learn to read braille, for fear of damaging the residual vision if print reading were attempted. Research into the effects of the use of the eyes in cases of very low vision has completely reversed medical opinion on this point. Doctors now feel strongly that no damage is done to eyes with low vision by using them for reading or any other near vision tasks, and that legally blind children who can possibly learn to read print should do so. Near vision tasks may cause fatigue more quickly in such cases than when vision is normal, and periods of rest from close work should be encouraged, but use of the eyes should not be restricted except under doctor's orders in rare cases, even if the individual must hold a book at the end of his nose in order to read it.

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When this advice is followed, many legally blind children become print readers, sometimes with the aid of large print books or with magnifiers    different types prescribed for them by a Low Vision Aid Cli      uch as the one operated in connection with Utah State Sei    s for the Visually Handicapped in Salt Lake City. These children then fit the educational definition of the partially seeing child: one who has a visual limitation severe enough that he needs some special materials and some special teaching procedures, but whose chief avenue of learning is vision. For educational purposes, only the child who must use braille as his reading medium is considered "blind."

Over a period of years the pattern of causes of blindness changes. Medical control of infectious diseases has greatly reduced the incidence of visual impairment caused by them, but they must still be included in any listing of etiology. Accidents, many of them preventable, continue to be an important cause of visual disability at all age levels. Many cases of impairment, especially in infants, must still be listed "cause unknown." Hereditary conditions are responsible for an appreciable number of cases of blindness. One of these is retinitis pigmentosa, which, while inherited, usually only begins to affect vision in the teen or young-adult years, and then progressively robs the individual of his sight, leaving him ultimately with little or none. (Adjustment problems of a high school  udent with this condition can be severe.)

Congenital cataract is another cause of blindness in school children, and also congenital glaucoma, both less responsive to medical intervention in children than when they develop in middleaged or elderly adults.

Diabetes plays an increasingly significant role among the causes of visual disability, and is expected to be the greatest single cause in this country within a very short time. It occurs primarily among adults and the  d, however.

Birth defects, including those caused by maternal rubella (German measles during the early months of pregnancy) account for most of the cases in infants of multiple defects including blindness. The development of a rubella vaccine will certainly reduce the incidence of visual impairment from this disease.

Informal Methods for Identifying the
Visually Impaired Child

It is important for the teacher of a visually handicapped child who has some useful vision to realize that there are many different types, as well as degrees, of residual vision,

and that these will effect the child's reading of books and the chalkboard, and his response to all visual tasks. Some children have the "pinhole" vision already mentioned. Some have no central vision and register visual sensations only on the periphery of the visual field, which never provides clear images. Some have general dimness of vision from cataracts, others have patches of more or less clear vision among irregular blind spots. If a child tilts and turns his head when looking at objects, he may be trying to find a clear spot on which to focus the image. The observant teacher may notice such mannerisms and realize that a child has a visual problem even before his disability has been detected through formal vision screening.

Other behaviors and symptoms which might lead parents or teachers to suspect poor vision include habitual swollen, red-rimmed or crusted eyelids, bloodshot or watery eyes, frequent sties; headache, dizziness or nausea following close visual work; complaints of double vision or burning eyes. It must be remembered that the partially seeing young child does not know how other individuals see and may have no idea that his own vision is subnormal. Frequent stumbling over low objects, difficulty in estimating distances as shown in game situations, or inability to distinguish colors may alert adults to such a child's visual limitation. The myopic (near-sighted) child often avoids ball games because he cannot see the ball coming in time to catch or hit it, and prefers quiet, perhaps solitary activities, often reading. The severely hyperopic (far-sighted) child, fortunately relatively rare, may become restless after periods of close eye work, and is sometimes identified by this characteristic.

## Formal Vision Screening

Every school district should provide a careful vision screening of all school children every year, and should encourage the screening of pre-school children so that correctable visual defects are discovered and remedied before children enter school. Instructions for accurate administration of screening tests and assistance with establishing a screening program may be obtained from the National Society for Prevention of Blindness or a state affiliate such as the Utah Society for Prevention of Blindness. After screening, good follow-up procedures must be implemented.

## Characteristics

There are no specific behavioral, physical or intellectual characteristics that may be said to be inherently associated with blindness or visual disability. Social problems, delayed

physical development, emotional difficulties and even apparent
mental retardation may arise from lack of stimulation in the
home environment, from restrictions placed on activity by fear-
ful parents, from the attitude of sighted neighbors, peers and
associates toward the blind child; but none of these, in the
absence of discrete additional impairments, should be conside
essential characteristics of a blind child. The range of
intelligence in blind children has been found to be very clos
to the normal curve, perhaps a little heavy on the low end of
the scale. Early support and assistance to parents, and educa
tion to change the attitude of the general public toward blind-
ness can greatly reduce the incidence of most of the undesir-
able traits sometimes associated with blindness or low vision.

The true limitations which poor vision imposes lie in the
reduction of sensory input to the cerebral cortex and the result-
ing difficulty in forming accurate mental concepts, and in
interference with freedom of mobility. Parents and educators
must help the child to learn through senses other than vision,
or, in the case of the partially seeing child, in addition to
vision, providing auditory, tactile, kinesthetic, olfactory and
gustatory experiences in the home and school. Independence in
moving about, if encouraged early, will lead in later years to
effective travel with a cane or guide dog or one of the elec-
tronic devices now being developed.

The intelligent visually handicapped child does not need
changes in his school curriculum so much as changes in the
materials with which he works: braille or large print books
and writing materials, supplementary lighting where needed,
tactile maps and diagrams, records and tapes for auditory work.
Many of these special materials are supplied without cost
through the federally funded quota system of the American
Printing House for the Blind or through the regional branch
of the Library of Congress, Division for the Blind and Physic-
ally Handicapped. The library which serves all of the inter-
mountain states is located in Salt Lake City at 2150 South 300
West, Suite #16.

The functional potential of a blind individual without
additional handicaps is usually limited primarily by the atti-
tudes of society toward him rather than by his impairment. Job
opportunities are often restricted because of lack of adequate
vocational training centers and refusal of employers to con-
sider hiring a blind worker. There are many vocational and
professional fields in which a blind individual can function
successfully, and his interpersonal relations and social poten-
tial are not necessarily limited because his vision is. If
other impairments do exist, the individual's functional capaci-
ties must be assessed after careful diagnosis of all handicapping
conditions and consideration of all remaining capabilities.

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Recommended Resources for Additional Information

A book and two pamphlets which should be helpful to the regular classroom teacher who has a visually handicapped child in her class are:

Teaching the Visually Limited Child, by Virginia E. Bishop, published by Charles C. Thomas, Springfield, Illinois.

"The Visually Handicapped Child at Home and School," by John Walker Jones, Bureau of Education for the Handicapped, published by the U.S. Department of Health, Education and Welfare, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

"Handbook for Teachers of the Visually Handicapped," by Grace D. Napier and Mel W. Weishahn, second printing provided and distributed by the Instructional Materials Reference Center for Visually Handicapped Children, American Printing House for the Blind, 1839 Frankfort Avenue, Louisville, Kentucky.

In Utah, assistance to parents and educators of visually impaired children may be obtained by writing:

Consultant for Programs for the Visually Impaired, State Department of Public Instruction, 1050 Univsersity Club Building, 136 East South Temple, Salt Lake City, Utah.

This source will refer the client to other resources--state, regional, national and private--for all types of services and additional information.

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# BIBLIOGRAPHY

Berry, M. F., Language disorders of chi__ren, Appleton-Century-
     Crofts, 1969.

Davis, H. & Silverman, S. R., Hearing and deafness (3rd Edition)
     Holt, Rinehart and Winston, 1970.

Eisenson, J. & Ogilvie, M. Speech correction in the schools,
     (3rd Edition), Macmillan, 1971.

Johnson, D. & Myklebust. H., Learning disabilities, educational
     principles and practices, Grune and Stratton, 1967.

Johnson, W., Darley, F    Spriesterbach, D. C., Diagnostic
     methods in speech p.   ology, Harper and Row, 1963.

Jones, M. V. (Ed.), Language development, the key to learning.
     Charles C. Thomas, 1971.

Kirk, S. A., Educating exceptional children (2nd Edition),
     Houghton-Mifflin, 1972.

Kirk, S. A. & Kirk, W. D.. Psycholinguistic learning disabilities
     diagnosis and remed    on, University of Illinois Press,
     1971.

Lerner, J. W., Children with learning disabi    es, Houghton-
     Mifflin, 1971.

McDonald, E. T., Articulation testing and treatment, Stanwix
     House, 1964.

Scott, L. & Thompson, J. J., Talking time, Webster Publishing
     Co., 1951.

Sloane, H. N., Jr., & MacAulay, B., Operant procedures in
     remedial speech and language training, Houghton-Mifflin,
     1968.

Travis, L. E. (Ed.), Handbook of speech pathology and audiology,
     Appleton-Century-Crofts, 1971.

Van Hattum, R. J. (Ed.), Clinical speech in the schools, Charles
     C. Thomas, 1969.

Van Riper, C. The nature of stuttering, Prentice-Hall, 1971.

Wallace, D. O., Improving skills in speech therapy, Charles C.
     Thomas, 1967.

Winitz, H.  Articulatory acquisition and behavior, Appleton-
Century-Crofts, 1969.

Wyatt, G.  Language learning and communication disorders in
children. New York: Free Press, 1969.

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SPEECH AND HARD OF HEARING

by Mae Taylor


Speech and language rehabilitation is provided for those
students in the public schools whose speech or language is so
far below standard or is so far from acceptable normal speech
or language that it calls undersirable attention to itself or
impedes educational or social efficiency.

Rehabilitative help is provided those students whose hear-
ing loss is not severe enough to require program placement in
a class for the deaf but who need the additional help of an
itinerant or resource teacher to help them succeed in a regular
classroom. Except for a moderate to a sometimes severe hearing
loss, the child is otherwise generally mentally and physically
adequate.

Speech and hearing handicaps may take the form of various
behavioral manifestations:

1.   Articulation Difficulty:   the defective pronunciation
of specific sounds within the language (example:   R, L. S, TH
sounds).   Such defective articulation may have a variety of
causes:

> (1)   Poor speech model for the child to imitate
>       either in the home, play, or school setting.
> (2)   Reduced motor control of the tongue due to
>       motor damage (cerebral palsy and other congenital
>       motor problems or to a partial paralysis caused
>       by accident or surgery).
> (3)   A hearing problem, either perceptive or recep-
>       tive, which may cause the child to hear the
>       sounds of speech inaccurately and therefore
>       he reproduces them inaccurately.
> (4)   Delayed physical, social, mental, or emotional
>       development associated with the child's overall
>       growth pattern.
> (5)   Poor discrimination ability, thereby resulting
>       in the child's inability to be aware of articula-
>       tory inaccuracies.   This, therefore, hinders his
>       ability to monitor his own speech with accuracy.
> (6)   Poor auditory memory.   Inability to retain audi-
>       torially the sounds of speech which results in
>       inability to reproduce them correctly with con-
>       sistency.

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(7)   Other physical abnormalities.  Such physical
      problems as tongue-tie wherein the tip of the
      tongue is tightly attached to the bottom of the
      mouth.  Although rarely a severely handicapping
      condition, it can cause articulatory deficiency.
(8)   Dental malocclusions may cause articulation de-
      ficiency since these cause a misplacement of the
      articulators required in the accurate production
      of a specific sound.  "Articulators" refers
      primarily to tongue, teeth, palate and lips.

   2.  Speech and language problems associated with hearing
loss:  Since the correct production of sounds of our speech is
a learned ability, and is primarily dependent upon imitation,
it can be seen that the child who is deaf or severely hard of
hearing will likely have severe speech and language deviations.
Each separate sound of speech must be taught individually and
the grammer, syntax, vocabulary, and muliple definitions within
our language must be taught separately and individually.  Usual-
ly speech is more severely impaired as the severity of hearing
loss increases.  The hearing impaired child needs consistent
help from a hearing person acting as a monitor, so that he may
continually maintain the quality of speech production as well as
upgrade the quality of articulation.

   3.  Language deficiency:  A deficiency in the communica-
tion process, which may involve speaking, writing, listening
and/or thinking.  Such deficiencies may reflect 1) an inability
to understand or handle the grammatic structure of our
language; 2) a reduced vocabulary understanding and/or output;
3) association of auditory symbols, or the inability to relate
spoken words in a meaningful way so that a spoken message is
understood; 4) deficiency in verbal expression or an inability
to express ideas verbally.

   4.  Speech problems associated with emotional problems:
The most notable speech problem with a primary emotional base
is that of stuttering.  Stuttering consists of repetitions,
hesitations, and prolongations in speech.  If the child does
not seem to be aware of his speech and exhibits no anxiety or
physical struggle, then his stuttering is said to be "primary"
and treatment is not generally recommended, especially at an
early age.  However, stuttering becomes "secondary" when the
speaker evidences awareness of his nonfluencies and reacts to
them by attempting to modify, avoid, or "hide" them.  Theories
as to the cause of stuttering vary.  Generally, it is considered
to have an emotional base which might be related to problems
in relationships with family, peers, or others.  Other theories
offer various "causes."  Stuttering is usually considered to
be a symptom of a problem rather than a problem in and of itself.

There is a higher correlation between speech and language difficulties occurring in children who have other exceptionalities than is generally found in the "normal" school population. Children with physical handicaps, mental handicaps, or emotional handicaps will show a higher percentage of communication disorders. Many educable mentally retarded children need special speech and/or language help and most trainable mentally retarded children will need a great deal of help particularly in developing language skills.

The learning disability child shows a higher than average percentage of speech and hearing deficiencies. Ofttimes the speech-language difficulty is related to a specific learning disability as may well be the case with the specific disabilities of auditory association, auditory reception, verbal expression, grammatic closure, auditory memory, auditory closure and sound blending.

Within the public school setting the speech, language, or hearing handicapped child is often identified and referred for treatment by the classroom teacher--primarily when his communicative ability with the classroom teacher or peers is either unintelligible, unpleasant, or interferes with educational efficiency. The classroom teacher may notice that the child's classmates tease him about his communication deficiency, or he may simply be difficult to understand. Upon referral of the child for evaluation by a qualified communication disorders specialist, the nature of the child's disorder, recommendations for treatment, placement in a special educational service pattern, or specific activities for the classroom teacher to use with the child, will be recommended by the communication disorders specialist. Occasionally a different kind of specialist in the education of the handicapped will be asked to diagnose the child to determine the existence of multiple handicaps, such as a co-existing learning disability, intellectual handicap, physical disability or emotional disturbance.

APPENDIX C

Formal Screening Instruments

The screening instruments briefly described in this section
are those used in the basic work with children and teachers
which underlies the information contained in this document.
The list is not comprehensive, and no attempt was made to
rank the instruments nor to pass judgment on their merit.

The instruments are listed under major headings for ease in
quickly locating the information:

        Section A.    Comprehensive Battery
        Section B.    Language
        Section C.    Mental Ability
        Section D.    Performance
        Section E.    Physical
        Section F.    Social and Behavioral
        Section G.    Speech and Hearing
        Section H.    Vision

## Section A:   Comprehensive Battery

### Communicative Evaluation Chart

> R. Anderson, M. Miles, and P. Matheny
> Educators Publishing Services, Inc.
> 75 Moulton, Cambridge, Mass.
>
> For ea: `` detection of childhood communicative disabilities,
> for in: cy to 5 years.  Norms not established.

### Early Detection Inventory

> F.E. McGahan and C. McGahan
> Follett Publishing Corp.
> 1010 W. Washington Blvd.
> Chicago, Illinois
>
> Individual screening device for pre-school childien--social,
> emotional, physical, intellectual.  The readiness section
> must be administered by a professional.

### Pupil Rating Scale:   Screening for Learning Disabilities

> Helmer Myklebust
> Grune & Stratton, Ir.
> 757 3rd Ave.
> New York, N.Y. 10017
>
> This is a screening and diagnosis for auditory comprehension
> of spoken language, non-verbal orientation, motor coordi-
> nation, personal-social behavior.  Designed for children
> between 4 and 8 and retarded children of all ages.

## Section B:   Language

### Screening Test for Identifying Children with Specific Language Disability, Revised Edition

> Beth H. Sli: , rland
> Educators Publishing Service, Inc.
> 75 Moulton
> Cambridge, Mass.
>
> Tests visual copying from far point, visual copying from
> near point, visual perception-memory discrimination with
> kinesthetic memory, auditory recall, auditory perception
> of beginning and ending sounds, auditory associations.  This
> test is complex in organization; therefore, administration
> and scoring require considerable study by the examiner before
> it can be used successfully.  Norms should be set by exami-
> ner according to the locale it is administered in.
> Time:   6 minutes in 2 or 3 sessions.

Utah Test of Language Development

    Jex and Jones
    Communication Research Associates
    Salt Lake City, Utah

    Developmental expectancies are given up to age eight.

## Section C:  Mental Ability

### Otis-Lennon Mental Ability Test

    Arthur S. Otis, Roger T. Lennon
    Harcourt Brace Jovanovich, Inc.
    757 3rd Ave.
    New York, N.Y.  10017

    Provides for the assessment of general mental ability or
    scholastic aptitude, by sampling a broad range of cognitive
    abilities.  Forms: Primary I (last half of kindergarten) 30
    minutes; Primary II (first half of grade 1) 30 minutes;
    Elementary I (1.6-3.9) 45 minutes; Elementary II (4.0-6.9)
    40 minutes; Intermediate (7.0-9.9) 40 minutes; advanced
    (10.0-12.9) 40 minutes.  Hand scored or machine scored.

### Slosson Intelligence Test for Children and Adults

    Richard L. Slosson
    Slosson Educational Publications, Inc.
    140 Pine St.
    East Aurora, N.Y. 14052

    This is an individual test requiring no specific training
    for the administrator.  It is a series of questions involv-
    ing general intelligence.  Administration and scoring in-
    structions are in the test booklet.  Time: 10-15 minutes.

## Section D:  Performance

### ABC Inventory

    N. Adair and G. Blesch
    Research Concepts, a Division of Test Maker, Inc.
    1368 E. Airport Rd.
    Muskegon, Michigan 49444

    The ABC Inventory is designed to identify children aged four
    to six who are likely to fail in kindergarten or who are not
    likely to be ready for grade one.  Items relate to drawing,
    copying, folding, counting, memory, general information,
    colors, size concepts, time concepts, and the like.  The

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Inventory is individually administered, paced, and takes
about 9 minutes time.  No special training is needed to
administer the questionnaire.  Raw scores are related to
"ready ages," which are highly correlated with mental ages
(Stanford-Binet).

Assessment Program of Early Learning Levels (Apell)

E.V. Cochran and J.L. Shannon
Edcodyne Corporation
I City Blvd. West Suite 935
Orange, California 92668

The APELL indicates deficiencies in the areas of language
skills, pre-reading, and pre-mathematics in children from
four and one-half to seven years old.  It may be used with
younger children if it is individually administered.  Visual
discrimination, auditory association, letter names, dis-
crimination of attributes, number concepts, number facts,
nouns, pronouns, verbs, adjectives, plurals, and preposi-
tions are included.  The test is paced, requires about 40
minutes to administer and should be given in two 20-minute
sessions on consecutive days.  No training is necessary to
administer the test.  Examinees answer questions by select-
ing one of three pictures.  The test is machine scored.

Basic Concept Inventory

S.E. Engleman
Follett Education Corporation
Follett Publishing Corporation
1010 W. Washington Blvd.
Chicago, Illinois  60611

The Basic Concept Inventory provides a broad checklist of
basic concepts that are involved in new learning situations
and are used in explanations and instructions in the first
grade.  It is primarily intended for culturally disadvanta-
ged pre-school and kindergarten children, slow learners,
emotionally disturbed and mentally retarded children.  The
Inventory may be given to children aged three to ten.  The
Inventory is criterion-referenced and uses basic concepts,
sentence repetition and comprehension, and pattern-aware-
ness tasks.  It is individually administered, paced, and
requires about 20 minutes.  If the Inventory is to be used
as a basis for remedial instruction, it may be given by the
classroom teacher.  If, however,  it is to be used diag-
nostically as the basis for special treatment of special
placement, a trained examiner should administer the in-
strument.

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## Bayley Scales of Infant Development

N. Bayley
The Psychological Corporation
304 E. 45th St.
New York, N.Y.  10017

The Bayley Scales of Infant Development assess develop-
mental status in infants from birth to thirty months of age.
The Mental Scale (163 items) measures sensory-perceptual
acuities and discriminations; early acquisition of object
constancy and memory, learning, and problem-solving ability;
vocalizations and the beginning of verbal communication;
and early evidence of the ability for form generalizations
and classifications.  The Motor Scale (81 items) measures
the degree of control of the body, coordination of the large
muscles, and finer manipulatory skills of the hands and
fingers.  Each of the items has an age-placement to the
nearest one-tenth of a month and an age-range.  The last part
of the test is an Infant Behavior Record, consisting of 30
ratings, which is completed by the examiner after the Scales
have been administered on the basis of his observations.
It deals with social orientation, emotional variables, ob-
ject relations, motivational variables, activity, reactivity,
sensory areas of interest displayed, and general evaluations.
Some props are needed.  A kit of the materials used for
norming groups is available.  The test is untimed (although
certain items are timed) and individually administered.  Train-
ing is needed.  The mother (or mother substitute) is present
during the test.  Average testing time for the Mental and
Motor Scales is 45 minutes with about ten percent of the
cases requiring 75 minutes or more.  Raw scores may be con-
verted to Mental Development and Motor Development indices,
scores standardized by age with a mean of 100 and standard
deviation of 16, or to mental ages.  Split-half, test retest,
tester-observer reliabilities, and correlations with Stan-
ford-Binet I.Qs for sample members aged 24 months, 27 months
and 30 months are reported.

## Boehm Test of Basic Concepts (BTBC)

A.E. Boehm
The Psychological Corporation
304 East 45th St.
New York, New York  10017

The Boehm Test of Basic Concepts measures master of concepts
considered necessary for achievement in the first years of
school.  It is appropriate for Grades K-2.  Pictorial, multiple
choice items check concepts of quantity of number, space
(location, direction, orientation, dimension), time, and

miscellaneous. BTBC is group-administ ed and paced. Administration time is 15-20 minutes fc ach of two test booklets. The test may be given in one or wo sessions depending upon age and attention span. Testing in small groups (eight-twelve) or using assistants is helpful with younger children. No special training is needed to give the test. Percentile norms by grade and by socioeconomic level are available.

## Communicative Evaluation Chart

R. Anderson, M. Miles, and P. Matheny
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mass.

The Communicative Evaluation Chart for children from infancy to five-years old, is a screening device that gives an impression of the child's overall abilities. From 12 to 25 items are given for the ages three months, six months, nine months, and one year. Half the items deal with the development and comprehension of language as a communicative tool, while the other half deal with physical growth and development, motor coordination, and visual-motor responses; some items can be reported while others require a response of the child. This is essentially a checklist of items categorized by age. Norms are based on other tests.

## Denver Developmental Screening Test

W. Frankenburg and J.B. Dodds
Ladoca Project and Publishing Foundation, Inc.
E. 51st Ave. & Lincoln St.
Denver, Colorado 80216

The Denver Developmental Screening Test is a simple, clinically useful tool designed to assist in the early detection of children with serious developmental delays. It may be used with children from age two weeks to six years. The purpose is screening, not diagnosis. Although the test contains 105 tasks, a child of any given age will usually be tested on about 20 items. The DDST evaluates the following areas: gross motor, fine-motor-adaptive (use of hands, ability to solve nonverbal problems), language (ability to hear and talk), and personal-social (tasks of self-care, ability to relate to others). The test is individually administered and paced. No special training is needed. Testing materials include a rattle, pencil, box of raisins, bell, tennis ball, glass bottle, some blocks, some yarn. Task norms which indicate the age at which 25%, 50%, 75%, and 90% of boys, girls, and all children successfully complete each item are available.

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Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Publishing Corp.
1010 W. Washington Blvd.
Chicago, Illinois 60601

For information see Section A.

Evanston Early Identification Scale

M. Landsman and H. Dillard
Follett Educational Corp.
1010 W. Washington Blvd.
Chicago, Illinois  60601

The Evanston Early Identification Scale is a simple screen-
ing device for identifying children who can be expected to
have difficulty in school.  It consists of one task, that
of drawing a person.  It was conceptualized from observa-
tions that children in the upper elementary grades who were
having serious learning problems had performed poorly on
kindergarten figure drawings.  A 25 point scale was developed,
based on the absence of figure drawing details and on correct
position of body parts.  The test is suitable for children
aged five years, zero months to six years, three months.
The children should previously have had a chance to become
familiar with drawing materials.

Gilmore Oral Reading Test

John V. Gilmore
Harcourt, Brace & Jovanovich
757 3rd Ave.
New York, N.Y. 10017

An individual test that measures three aspects of oral read-
ing ability: accuracy, comprehension, and rate.  Administra-
tion and scoring are included in the Manual of Directions.
Grade equivalents are given for accuracy and comprehension.
Time: 15-20 minutes.

Keystone Ready-to-Read Test

Keystone View Company
Meadville, Pennsylvania 16335

This test is for school-entrance-aged children.  It tests
visual readiness to read books at the usual distance.  Near-
point fusion, lateral and vertical posture and usable vision
are tested.  Pass-fail scores are the only options for scoring.

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## Kindergarten Evaluation of Learning Potential

Wilson, J.A.R., and Roebeck, M.C.
Webster Division, McGraw Book Company
8171 Redwood Highway
Novato, California  94947

The Kindergarten Evaluation of Learning Potential predicts
school success in the early grades based on the child's
actual learning in kindergarten.  It is designed as both a
teaching and evaluation instrument.  KELP items include skip-
ping, color identification, bead design, bolt board, block
design, calendar, number boards, safety signs, writing a
name, auditory perception, and social interaction.  The lat-
ter nine items are rated at three levels:  association, con-
cept formation, and creative self-expression.  The items are
taught by the teacher, who observes and records the accom-
plishment of the tasks over the entire kindergarten year.
Classroom materials, teaching tips, and a summary retention
test are available.  The authors report that stanine norms
can be obtained on request.

## Metropolitan Achievement Tests

W.N. Durost, H.H. Bixler, J.W. Wrighthouse, G.A. Prescott,
 I.H. Balow
Harcourt, Brace & Jovanovich
757 3rd Ave.
New York, N.Y. 10017

a)  Primer-(grades k-1.4)

   Tests listening for sounds, reading, numbers.  Scoring
   and administration instructions included in manual.
   Time: 120 minutes in 8 sessions.

b)  Primary I (grades 1.5-2.4)

   Tests reading (word knowledge, reading, total) word analy-
   sis, mathematics.  Scoring and administration same as
   above.  Time:  115-125 minutes in 3 or 4 sessions.

c)  Primary 2 (2.5-3.4)

   Tests reading (word knowledge, reading, total) analysis,
   spelling, mathematics (computation, concepts, problem-
   solving, total).  Administration and scoring same as
   above.  Time:  160-170 minutes in 5 sessions.

d)  Elementary (3.5-4.9)

   Tests reading (word knowledge, reading, total), language,
   spelling, mathematics (computation, concepts, problem-

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solving, total).  Time:  225-235 minutes in 7 sessions.

e)  Intermediate (5.0-6.0)

Tests reading (word knowledge, reading, oral), language, spelling, mathematics (computation, concepts, problem-solving and total), science, social studies.  Administra-tion and scoring same as above.  Time:  310-320 minutes in 6 sessions.

)  Advanced (7.0-9.5)

Tests same areas as Intermediate.  Scoring and administra-tion same as above.  Time:  305-315 minutes in 6 sessions.

Peabody Picture Vocabulary Test

L.M. Dunn
American Guidance Service, Inc.
Publish r's Building
Circle Pines, Minn. 55014

The PPVT is assumed to measure recognition (hearing) voca-bulary by having a child identify correct pictorial representa-tions (from among four alternatives) in a series as the ex-aminer speaks a word corresponding to each picture.  It was originally designed to predict school success and results obtained from its use are often taken to roughly estimate a child's "verbal intelligence."  Items are arranged from simple to complex.  This test is suitable for use with child-ren of pre-school age and beyond and is easily administered. Further, the PPVT requires little in the way of special train-ing for scoring and interpretation.  It appears that the test is more effective with children beyond age seven than with those of nursery and kindergarten age.  Extensive use has been made of the PPVT for the study of mentally retarded children.

Screening Tests for Identifying Children with Specific Language Disability, Revised Edition

Beth H. Slingerland
Educators Publishing Service, Inc.
75 Moulton
Cambridge, Mas .

For information see Section B.

Silveroli Reading Inventory

Nicholas J. Silveroli
William C. Brown Company
135 South Locust Street
Dubuque, Iowa  52001

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This [test] [i]s administered informally on a one-to-one basis.
There [are] [3] forms: Form A and B go to grade 6 reading level,
Form C goes to grade 8. The test consists of graded word
list and oral paragraph with comprehension questions. Scores
give independant, instructional and frustration reading levels.
A graded Spelling Survey is also included. Time: 15-20
minutes.

Stanford Achievement Test

* T.L. Kelly, R. Madden, E.F. Gardner H.S. Reedman
Harcourt, Brace & Jovanovich
757 3rd Avenue
New York, N.Y. 10017

a) Primary I Battery (grades 1.5-2.4)

Tests word reading paragraph meaning, vocabulary, spelling,
word study skills, and arithmetic. Administration and
scoring instructions included in the manual. Time: 2
hours, 40 minutes.

b) Primary II Battery (grades 2.5-3.9)

Tests word meaning, science, and social studies concepts,
spelling, word study skills, language, arithmetic computa-
tion, and arithmetic concepts, administration and scoring
same as above. Time: 3 hours, 50 minutes.

c) Intermediate I Battery (grades 4.0-5.4)

Tests word meaning, paragraph meaning, spelling, word
study skills, language, arithmetic\computation, arith-
metic concepts, arithmetic applications, social studies,
and science. Administration and scoring same as above.
Time: 5 hours.

d) Intermediate II Battery (grades 5.5-6.9)

Tests word meaning, paragraph meaning, spelling, language,
arithmetic computation, arithmetic concepts. Administra-
tion and scoring same as above.

e) Advanced Battery (grades 7.0-9.9)

Tests paragraph meaning, spelling, language, arithmetic
computation, arithmetic concepts, arithmetic application,
social studies and science. Administration and scoring
same as above. Time: 4 hours, 45 minutes.

f) High School Battery (grades 9-12)

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Tests English, numerical competence, mathematics, reading, science, social studies, and spelling. Supplementary tests available are: Arts and Humanities, Business and Economics, and Technical Comprehension. Administration and scoring same as above. Time for Basic Battery: 5 hours, 20 minutes.

Many subtests listed above are also available separately.

Wide Range Achievement Test

Jastak, J.F. and Jastak, S.R.
The Psychological Corporation
304 E. 45th St.
New York, N.Y. 10017

The Wide Range Achievement Test measures achievement in reading, spelling, and arithmetic from preschool through adulthood. Age norms are given for ages five and up. Scores are given in grade equivalents, standard scores, and percentiles. The reading subtest consists of recognizing and naming letters and naming words. The spelling subtest consists of copying marks resembling letters, writing the name, and writing words to dictation. The arithmetic subtest involves counting, reading, number symbols, solving oral problems, and performing written computations. The three subtests take twenty to thirty minutes.

Section E: Physical

ABC Inventory

N. Adair and Blesch
Research Concepts, A Division of Test Makers, Inc.
1368 E. Airport Rd.
Muskegon, Michigan 49444

For information see Section D.

A Movigenic Curriculum

Ray Barsch
State Department of Public Instruction
Madison, Wisconsin

This is a very informal test based on Barsch 12 dimensions of motor-task analysis. Several tasks are to be done for each dimension; each successive task dependent upon the one before. The general areas covered are: Postural-Transport Orientation, Percepto-cognitive modes, and degrees in freedom. Scoring is by teacher observation. Time: 1 hour.

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Communication Evaluation Chart

        R. Anderson, M. Miles, and P. Mathery
        Educators Publishing Service, Inc.
        75 Moulton
        Cambridge, Mass.

        For information see Section B.

Denver Developmental Screening Test

        W. Frankenburg and J.B. Dodds
        Ladoca Project and Publishing Foundations, Inc.
        E. 51st Ave. and Lincoln St.
        Denver, Colorado  80216

        For information see Section B.

Early Detection Inventory

        F.E. McGahan and C. McGahan
        Follett Educational Corp.
        Follett Publishing Corp.
        1010 W. Washington Blvd.
        Chicago, Illinois

        For information see Section A.

Valett Developmental Survey of Basic Learning Abilities

        R.E. Valett
        Consulting Psychologists Press
        Palo Alto, California

        The Valett Developmental Survey evaluates various develop-
        mental abilities of children between the ages of two and
        seven, to aid in planning individualized learning programs.
        It consists of 233 tasks in the areas of motor integration
        and physical development (seventeen items), tactile
        discrimination (eleven items), auditory discrimination
        (thirty-six items), visual-motor coordination (nineteen
        items), visual discrimination (fifty-three items), language
        development and verbal fluency (thirty items), and con-
        ceptual development (sixty-seven items).  The Survey is
        individually administered and paced.  Some practice is needed
        to give the test.  Many props, all inexpensive and readily
        available, are needed.  The author considers the Survey in-
        complete by itself and recommends that it be supplemented
        with measures of family background, prior learning experiences,
        and subjective estimates of the child's motivation for learn-
        ing, social judgment, interests, general adaptivity, and com-
        mon sense.  Age norms for each of the tasks are included.

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Devereux Child Behavior Rating Scale

George Spivack and Jules Spotts
Devereux Foundation Press
Devon, Pa. 19333

This scale is a comparative instrument that considers the
child's behavior over a two-week period. Seventeen behavior
factors are evaluated. Raw scores and standard score units
are calculated.

Early Detection Inventory

W.H. McGahan and C. McGahan
Follett Educational Corporation
Follett Publishing Corp.
1010 W. Washington Blvd.
Chicago, Illinois 60607

The Early Detection Inventory measures general school readi-
ness in preschool children. Areas of assessment are: social
emotional behavior responses, readiness tasks (verbal self-
awareness, concept development, awareness of left/right,
awareness of body image), motor performance, vision, hearing,
dental health, speech, medical history, and family and social
history. Both the child and one of his parents are needed to
complete the instrument. The Inventory is individually admin-
istered and paced. Administration time depends on the number
of personnel assigned to the testing session. At least the
following are needed: an experienced educational tester, a
vision examiner, a hearing examiner, a dentist, and a speech
therapist. Several readily available props are needed.

Levine-Elzey Pre-school Social Competency Scale

Stanford University Press
Stanford,
California 94305

This is a rating scale on 34 social competencies including
relations with peers, communication skills, and emotional
independence.

The Piers-Harris Children's Self Concept Scale (The Way I Feel
About Myself)

Ellen V. Piers, Dale B. Harris
Counselor Recordings and Tests
Box 6184
Acklen Station
Nashville, Tenn. 37212

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For grade levels 3-12. The test consists of 80 first-person declarative statements, i.e., "I am a happy person." The child answers yes or no. One half are worded positively. Half are worded negatively. It can be administered to children below grade three if the examiner reads the statements. Administration and scoring procedures are included in the manual. Time: 15-20 minutes.

## Vineland Social Maturity Scale

Edgar A. Doll
American Guidance Service, Inc.
Publishers Bldg.
Circle Pines, Minn. 55014

This test measures social competence in areas of: self-help general, self-help dressing, self-help eating, communication, self direction. Socialization, locomotion and occupation. Age level is 0-30. Items are scored after interviewing some-one well-acquainted with the subject or the subject himself. A social age is then obtained; this is divided by the chrono-logical age, yielding a social quotient.

## Section G:   Speech and Hearing

### Auditory Discrimination Test (Wepman)

J. Wepman
Language Research Associates
17 E. Delaware Place
Chicago, Illinois  60611

The Auditory Discrimination Test requires about five minutes to administer and presents matched words which the child is asked to indicate as being the same or different. Test results are interpreted in terms of either adequate or in-adequate development of auditory discrimination, with cut-off points given, starting at age five. The test lacks the sophistication of the Goldman-Fristoe-Woodcock, but appears to be a simple and efficient instrument for limited purposes.

### Early Detection Inventory

F.E. McGahan and C. McGahan
Follett Educational Corporation
Follett Publications Corp.
1010 W. Washington Blvd.
Chicago, Illinois

For information see Section A.

Peabody Picture Vocabulary Test

 L.M. Dunn
 American Guidance Service, Inc.
 Publishers Bldg.
 Circle Pines, Minn. 55014

 For information see Section D.

Predictive Screening Test of Articulation

 C. VanRiper and R.L. Erickson
 Continuing Education Office
 Western Michigan University
 Kalamazoo, Michigan 49001

 For grade 1 aged children. Used for identification of child-
 ren unlikely to master normal articulation by the end of
 grade 2 without speech therapy. Individually administered.
 Scoring instructions included in manual. Time: 8 minutes.

Screening Test for Auditory Perception: Experimental Edition

 Geraldine M. Kimmel and Jack Wahl
 Academic Therapy Publications
 1539 4th St.
 San Rafael, Calif. 94901

 For grade levels 2-6. Tests vowels, consonants, ryhyming
 words, sound patterns, word differences, total. No reading
 by examinees. Administered individually or to a group.
 Scored in percentile rankings - national norms. Scoring
 instructions included in manual. Time: 45 minutes.

Section II: Vision

Communicative Evaluation Chart

 P. Anderson, M. Miles, and P. Matheny
 Educators Publishing Service, Inc.
 75 Moulton
 Cambridge, Mass.

 For information see Section E.

Early Detection Inventory

 F.E. McGahan and C. McGahan
 Follett Educational Corporation
 Follett Publishing Company
 1010 W. Washington Blvd.
 Chicago, Illinois

 For information see Section A.

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Peabody Picture Vocabulary Test

L.M. Dunn
American Guidance Service
Publishers Building
Circle Pines, Minn.   55014

For information see Section C.

Screening Test for Identifying Children with Specific Language Disabilities, Revised Edition

Beth H. Slingerland
Educators Publishing Service, Inc.
75 Moulton St.
Cambridge, Mass.

For information see Section E.

Snellen Chart

Dr. Herman Snellen
(Available in physician supply firms)

This is used for measuring the visual acuity of children,
by having them stand at a distance of 20 feet and read the
successively smaller printed lines of Es.   Scores give the
visual efficiency of the student.   Time:   5 minutes.

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APPENDIX D

Formal Diagnostic Tests


Brief descriptions of a few formal diagnostic tests used
(or requested) by the contributors are described here.
Included is brief, general information about the types of
scores obtained and their use in programming activities
for identified children.


Durrell Analysis of Reading Difficulty
Gates-MacGinitie Reading Tests
Illinois Test of Psycholinguistic Abilities
Metropolitan Achievement Test
Slingerland Screening Tests for Identifying
   Children with Specific Language Disability
Slosson Intelligence Test
Weschler Intelligence Scale for Children
Wide Range Achievement Test

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DURRELL  ANALYSIS OF READING DIFFICULTY

Population:  Grades 1 through 6; nonreaders to intermediate readers.

Administration:  The Durrell is an individual diagnostic reading test.  No special training is required but it is beneficial to study the test carefully and administer practice tests before using it with students.  The timing and marking of errors are complex and require precision for the norms to be reliable.  The Durrell takes 30 to 90 minutes to give, depending on the child's ability level.  The manual, reading paragraphs booklet, individual record booklet, tachistoscope and a stop watch are necessary.

When to use:  If screening measures or observations have indicated that a child has a reading problem, the Durrell can pinpoint where the problem lies.  It is a diagnostic tool which can be the basis for prescriptive teaching.

General Description:  The Durrell is divided into seven sections, each of which tests a specific reading skill.  In addition, six optional tests are in the protocol but are not recorded on the profile.  They are:  letters, visual memory of words, hearing sounds in words, learning to hear sounds in words, sounds of letters and phonetic spelling.  These six offer specific information about lack of skills in phonics.

In oral reading, the child reads paragraphs aloud while the examiner notes errors, according to a code.  The reading is also timed.  In silent reading, the examiner times the reading and asks questions after it is completed.  Listening is used to indicate a child's potential reading level.  The examiner reads a paragraph on the child's actual grade level, aloud, and asks the child questions about it.  If the child can answer the questions about it.  If the child can answer the questions, it is assumed that he is capable of reading on or above grade level.

Flashwords test sight vocabulary level, and word analysis checks phonetic skills.  When giving the word analysis section, it is important to write the word as the child pronounced it rather than recording a print.  This facilitates analysis of error patterns.

Spelling and handwriting are not related directly to the reading process although the spelling test may offer some insight into each child's phonetic skills.

Types of Scores and Interpretation:  A profile is completed on the front of the test booklet; it shows grade-level scores for each of the seven areas.  This profile clearly shows deficits

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and strengths. A child may be strong in oral reading and very slow in silent reading, etc.

The Durrell lends itself to in-depth analysis. The oral reading errors can be tallied to show what the specific problems are (word-by-word reading, substitutions, ommissions, etc.). Silent reading comprehension and speed may be compared to see whether or not they are in proportion to one another. Of great importance is the word analysis test. Error patterns such as short vowels, blends, or blends can be picked out. The six supplementary tests also offer specific information about which skills are present and which are lacking. Further testing may be necessary to make sure these error patterns are consistent, but the examiner should know about where to start instruction after giving the Durrell. (It should be kept in mind that the oral reading and silent reading grade scores are based on reading speed; they do not indicate error rates.)

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GATES-MacGINITIE READING TESTS

Population: Grades K-12 not necessarily accurate for emotionally disturbed or slow but accurate workers.

Administration: The Gates-MacGinitie is a group test of silent reading ability. It may be administered by classroom teachers. No special training is required. Approximately 45-50 minutes are needed for administration but any number of students can take it at the same time. Scoring is quick and simple. Materials needed to administer the test include a test package for the appropriate grade level, and a stop watch or clock. The test package contains the technical manual, teacher's manual, scoring key, and class record sheet and test booklets. The examiner gives directions to the group and the children work silently until time is called.

When to Use: This test can be used for screening to pick up silent reading problems, in grouping for instruction, for determining approximate level for instruction, for determining approximate reading level of a class and for checking progress after instruction. It must be kept in mind, however, that the scores offer an estimate of silent reading level only. For more complete analysis, more testing is necessary after general problems are picked up in the Gates-MacGinitie.

General Description: The kindergarten level tests reading readiness skills. Vocabulary and comprehension sections are included for grades 1-12. The vocabulary section shows a picture and offers four possible labels for that picture. The child selects the best word. In comprehension, four pictures are provided for each question or statement and the child circles the best one. The questions become increasingly more difficult. Each child begins

with item 1 and working as far as he can before time is called. In grades 1-12 there are two forms available for speed and accuracy.

Types of Scoring and Interpretation: For each section, a standard score, percentile rank, and grade level are determined. These are global scores. It is difficult to specifically determine error patterns except to identify children who work rapidly with many errors and those who work more slowly but accurately. Care must be taken not to try to interpret how well the child should read from this test; it provides only an indication of where the child is reading. Also, scores cannot be added to obtain averages nor subtracted to get different scores. Grade scores are not very useful for assessing a child's reading relative to others in his class in terms of high and low grades.

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ITPA (TEST OF PSYCHOLINGUISTIC ABILITY)

Population: 2.5 to 9 years. Some subtests will not be valid for children with visual problems, hearing problems, mental retardation, etc.

Administration: Examiners must be thoroughly trained before administering the ITPA. Scoring and administration require expertise. Forty minutes to more than an hour is required for completion of the test; a kit containing needed materials must be obtained.

When to Use: When a child is having trouble with school work, it may be valuable to give him an ITPA, which provides a diagnostic evaluation of communication disorders. Deficits in learning channels may be identified, thus giving clues for remedial programs or for ascertaining the most efficient ways to teach a particular child. For instance, it may be found that the child learns best by auditory methods. Many remedial programs have been published for use in conjunction with the ITPA. The ITPA does not claim to offer information about etiology; evaluation will show what problems exist but not why they exist.

General Description:

The test kit includes the materials needed for administering 12 subtests, each of which tests a specific area within three dimensions of psycholinguistic abilities:

  1. Channels of communication: auditory, visual, manual motor and verbal channels;

  2. Psycholinguistic processes: receptive (input), expressive (output) and integration (memory and meaning);

3. Levels of organization: representational level (ability to use symbols in a meaningful way) and automatic level (ability to use non-symbolic tasks in an "automatic" way).

Subtests

1. Auditory reception: auditory input and discrimination;

2. Visual reception: visual input and discrimination, visual meaning;

3. Visual sequential memory;

4. Auditory association: abstract verbal ability;

5. Auditory sequential memory: digit span;

6. Visual association: ability to comprehend relationship between ideas presented visually;

7. Visual closure: ability to recognize whole objects from visually presented parts of those objects;

8. Verbal expression expressive conceptual: verbal ability;

9. Grammatic closure: automatic grammar habits;

10. Manual expression: nonverbal language;

11. Auditory closure: ability to supply missing sounds in words;

12. Sound blending: ability to blend sounds.

Types of Scores and Interpretation: The ITPA's scoring concepts are somewhat different from many tests. An age score is derived from each raw score; this represents a subject's psycholinguistic age for each subtest and is expressed, like chronological age, in years and months. It is the score which pinpoints ITPA-based learning and problem-solving strengths and weaknesses. Each age score should equal the subject's chronological age.

The scaled scores show how far a child strays from "average" by checking the child's scaled score against an "average" scaled score of 36. One can see which subtests are "abnormal" irrespective of chronological age.

A composite psycholinguistic age is also derived. This score represents the integration of the first ten subtest age scores and offers an overall psycholinguistic age. This age should also correspond to chronological age.

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The mean scaled score is the average of the scaled scores on the first ten subtests. This critical score shows which subtest areas are weak and which are strong with respect to the individual's mean scaled score. A line is drawn straight across the profile even with the mean scaled score, then each subtest scaled score is plotted above or below this line. If the difference is five or less, the skill is in the normal range. A difference of six to nine indicates borderline ability or disability and ten or more indicates a marked strength or weakness. In the case of weaknesses, a score of ten or more defines an area in which remediation is necessary.

In addition to checking a child's deficits and strengths with the above scoring procedure, patterns of weakness and strengths can be picked up. Subtest scaled scores are checked against the mean scaled score. If, in each of the following cases, all the representative subtest scaled scores (and no others) are six or more points lower than the mean, certain disorders are suggested:

1. Reception: Decoding or input disorder;

2. Expression: Encoding or output disorder;

3. Memory: memory disorder;

4. Association: disorder in the "meaning" system;

5. Representational level (first 6 subtests): the subject is unable to use symbols in a meaningful way;

6. Automatic level (last six subtests): the subject is unable to automatically and correctly use learned language patterns;

7. Auditory channel (input, memory, association, output) or visual channel: auditory or visual learning channel deficiency;

8. No specific pattern to subtest strengths and weaknesses: in problem-solving difficulty with particular low subtests.

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METROPOLITAN ACHIEVEMENT TEST

Population: Grades 1-12

Administration. Depending on the level administered, the test may take 1½ hours to 4 hours. Testing is divided into several sittings to avoid fatigue. No special training is required to administer the test but the manual should be reviewed carefully before the test is given. Any number of students can be tested

at one time. The tests can be hand-scored or machine-scored.

When to Use: The Metropolitan measures the skills of mathematics, language, reading, science and social studies at five different levels. The test can be given to check a group's achievement level, to identify children who are having difficulty, and for ability grouping. The Metropolitan may be re-administered to check for progress or new deficits.

General Description: The emphasis is on factual knowledge, with a format of multiple choice and tests. The reading section includes paragraphs followed by questions to answer. In spelling, the child marks words "correct," "incorrect," or "don't know." Language skills, reading charts and graphs, arithmetic, social studies and science are also assessed in separate subtests. Each subtest is timed by the examiner; the children complete as many items as possible before time is called.

Types of Scores and Interpretation: The Metropolitan yields a standard score, percentile rank, stanine and grade equivalent. By studying the scores, the teacher can identify particular strengths and deficits for each student and can determine average skill levels for the group. Noting particular items missed by a class may also be advisable. In this way, specific problem areas can be identified and future programming arranged to teach the needed information.

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SLINGERLAND SCREENING TESTS FOR IDENTIFYING CHILDREN WITH SPECIFIC LANGUAGE DISABILITY

Population: Grades 1 through 4

Administration: This test can be given to small groups or to individuals. Time for administration is approximately one hour. A kit is required which contains a manual, record sheets, cards, and wall charts.

When to Use: Early identification of language problems is important; probably many of the deficits picked up by the Slingerland would be discovered by careful observation of a child over a period of time. However, the Slingerland gives a complete overview of a child's difficulties with language so that remediation can begin immediately.

General Description: Many language-related skills are tested. Handwriting, spatial organization, and directionality are measured by having the children copy words and letters both from a distance and at close range. Reading and spelling levels are determined. Auditory tests are also available but would not necessarily be used with every pupil.

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Types of Scores and Interpretation: Scores are taken from the
number wrong including errors, self-corrections, and poor letter
formations. Through this type of analysis, problem areas are
pinpointed. Scoring is quite complex and often subjective, so
normative data are, not necessarily accurate. Remedial programs
for specific deficits can be selected, however, and further diag-
nosis completed as needed.

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SLOSSON INTELLIGENCE TEST

Population: Ages 1 month to adult.

Administration: This individual IQ test takes about 20 minutes
to administer and score. A test protocol and testing manual are
the only materials needed. No special training is necessary to
be able to administer the test as instructions in the manual are
explicit.

When to Use: The Slosson is widely used as a screening device
for placement in special programs. It has been shown to correlate
highly with the Stanford Binet. A low IQ score on this test is
a signal for further testing to pinpoint specific difficulties.

General Description: A series of questions is asked by the test
administrator. These range from observations of behavior expected
to content and concepts appropriate to an adult. Generally, test-
ing begins with a question about one-year below the subject's
chronological age; a basal and ceiling item are established ac-
cording to the number of errors. The test protocol is arranged
to make scoring quite simple. It is possible to break the questions
down into general categories such as analogies, definitions,
arithmetic, thought problems, and factual knowledge, even though
there are no specific subtests.

Types of Scores and Interpretation: Mental age and IQ scores are
derived. These are global scores and cannot be separated into
performance and verbal intelligence. It is possible, however, to
informally analyze specific areas of weakness and strength by check-
ing for specific patterns of error on certain types of questions.

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WESCHLER INTELLIGENCE SCALE FOR CHILDREN

Population: Ages 5 through 15.

Administration: The WISC is an individual IQ test which may be
administered only by a qualified psychologist. It usually takes
at least one hour to administer and scoring and interpretation are

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quite complex.

When to Use:  When in-depth analysis of a child's intelligence is needed, the WISC is very valuable.  Because of the subtests, a great deal can be learned about how a child thinks; indications of mental retardation,  learning disability and emotional disturbance can also be picked up in interpretation of scores.  The WISC is often used in placement of children in special education programs.

General Description:  The WISC is divided into 12 subtests, six performance.

### Verbal

Information:  general facts, usually dependent on formal education

Comprehension:  judgment and common sense dependent on wide variety of practical experiences

Arithmetic:  number and arithmetic ability

Similarities:  an abstract verbal problem-solving ability

Vocabulary:  a word and verbal knowledge

Digit Span:  short term auditory sequential memory

### Performance

Picture Completion:  ability to visually identify details, and ability to separate essential from nonessential visual details

Picture Arrangement:  social awareness, ability to think sequentially, ability to see human cause-and-effect relationships and ability to fit parts into a whole

Block Design:  nonverbal, abstract, problem-solving ability, visual motor coordination and spatial relationships

Object Assembly:  visual motor coordination, spatial relationships and ability to fit parts into a whole

Coding:  visual motor coordination, manual dexterity and flexibility, and visual memory

Mazes:  planning and anticipation ability and visual motor coordination.

For each of the subtests, the examiner presents problems of increasing difficulty until a ceiling is reached; the basal and ceiling scores are used in the scoring.

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Types of Scores and Interpretation: Verbal IQ, performance IQ and full scale IQ scores are calculated. Interpretation is complex but offers a great deal of information. By studying high and low subtest scores, strengths and weaknesses can be pinpointed. Discrepancies between verbal and performance scores are significant. In addition, the examiner is encouraged to note personal observations during the testing situation, which may offer clues about personality and learning traits of the student. Although caution should be used in interpreting individual subtest scores alone, the relationships between subtest scores provide information on the child's deficiencies, how he may learn best, and his strengths.

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WIDE RANGE ACHIEVEMENT TEST

Population:  5 to 11 years (Level 1); 12 to adult (Level 2)

Administration:  No training is needed to give the WRAT. It is simple to administer and the training manual is explicit. The test takes 15-30 minutes to administer and score. An instructional manual, clock or stop watch, and test protocol are the only materials needed. The arithmetic section can be given to groups, but the reading and spelling must be administered individually.

When to Use:  Screening for group placement is the main value of the WRAT. It serves as a signal for further testing in weak areas. The scores are very broad and the skills areas are limited. Reading tests only reading recognition, and arithmetic tests computation only.

General Description:  There are three subtests: reading, spelling and arithmetic. The Level 1 test also includes reading and arithmetic readiness measures. The reading section consists of a list of words ranging from very simple to difficult. The child reads every word until he makes a certain number of consecutive errors. For spelling, the teacher dictates words for the child to write. These, too, increase in difficulty and the testing stops when the ceiling item is reached.

The arithmetic readiness section provides simple questions for the teacher to ask the child. This test is given to all children under seven and to those older children who are suspected of being severely retarded in math. The arithmetic computation is a timed test in which the child completes as many items as he can in 15 minutes.

Scores and Interpretation:  Scores are in terms of grade equivalents in each of the areas, standard score and percentile scores.

Other than a general outlook as to where the child is function-
ing, there is little diagnostic value to the WRAT other than to
alert the teacher that further testing is needed in weak areas.

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APPENDIX E

Instructional Materials and
Techniques

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BEHAVIOR MODIFICATION

Behavior modification refers to a systematic arrangement of
events in the environment which leads to a change in observable
behavior.  Its principles have always been effective, but are
often used inconsistently or in a trial-and-error fashion.
Eliminating some of the guesswork through systematic observation
of behavior and application of consistent consequences can lead
to a classroom that runs more smoothly with improved academic
progress.

Many basic concepts have been given specific labels in behavior
modification theory.

Reinforcement:  Behavior is influenced by what happens immediately
after it occurs.  Behavior that is rewarded tends to increase;
that which is not rewarded tends to decrease.  The consequence
of a specific behavior is termed reinforcement.  It is the rein-
forcer that controls behavior.

Positive Reinforcement:  Anything that tends to increase a cer-
tain behavior by making a person feel good or motivating him to
do something is a positive reinforcer.  A teacher establishing
a behavior modification program must be alert to what reinforces
a particular person as many individual differences will be found.
One child may be thrilled with the teacher's praise while another
may feel quite uneasy or even unconcerned when he hears he is
doing well.  Positive reinforcers for maladaptive behavior often
are not discovered because inappropriate assumptions are made
about what should be reinforcing.  Since positive reinforcers
for a particular child may not always be obvious, the following
(Figure 1) may aid the teacher.  After the child has completed
the survey either orally or in written form, the teacher will
probably find several ways to reinforce that child's behavior.

Punishment:  Punishment refers to any consequence that reduces
or weakens a behavior.  Traditionally punishment has been used
to put a stop to inappropriate behavior.  Spankings, witholding
of privileges, and so on, are well known to all.  The behavior
modification approach is positive rather than punishment-oriented.
Except in cases where health and safety are threatened, other
methods should be used to change maladaptive behavior.  Although
punishment often appears to be a quick method for stopping a
problem, its effects cannot accurately be measured.  It is
impossible to determine the degree of emotional impact punish-
ment may have on an individual.  Since punishment tells a person
what not to do but gives no clue as to what he should be doing,
it has little instructional value.

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Have student complete the following sentences.

1. My favorite thing to do at home is_____.
2. During the summer, the thing I like to do best is_____.
3. My favorite subject in school is_____.
4. My favorite kind of candy is_____.
5. I would work real hard at school if my teacher would let me_____.
6. If I had three wishes of special activities I could do at school they
   would be_____.
7. My favorite TV program is_____.
8. The thing I like to do best with my mother is_____.
9. The thing I like to do best with my father is_____.
10. The one gift I would like the most from my parent is_____.
11. My favorite food is_____.
12. On weekends I like to_____.
13. The thing I like to do best with my friends is_____.
14. The games I like to play best with my friends is_____.
15. I would make my teacher happier if I_____.

List the reinforcers given above and have the student indicate the order of
preference. Put a number beside each reinforcer which tells student's rank
order. (Say, "Of all these things, which would you like most?)

_____          _____

_____          _____

_____          _____

_____          _____

_____          _____

Fig. 1

Survey of Possible Effective Reinforcers

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Time Out: A child's behavior may become so disruptive that he must be removed from the situation for a short while. This removal represents a time when no reinforcement is available on any terms. If a room or area is available where the child will receive no stimulation for a specified amount of time, this may be used. It is of no value to place a child in the hall or principal's office where there may be activity which could actually reinforce the child's problem behavior. If it's fun to go to the office, the child's problem behavior will increase. If a time-out room is not available, the child may be totally ignored for a few minutes. If he is engaged in a pleasurable activity when he misbehaves, he may be asked to sit out for awhile. The child should know why he is being removed and under what circumstances he will be allowed to return. (Passage of time or return to appropriate behavior)

Extinction: A behavior which receives no reinforcement at all will diminish until, after a time, it is no longer a part of the person's repertoire. Extinction is the process of altering consequences so reinforcement is not provided. For a behavior to be effectively extinguished, the true reinforcer must be discovered. If, for example, a child is acting out to receive attention from his classmates, the teacher's ignoring his behavior will not have an effect. Arrangements must be made to eliminate the peer attention the child is receiving.

Incompatible Behavior: Another effective way of reducing inappropriate behavior is to reinforce incompatible behavior. If a child gets out of his seat too often, rather than punishing him for being up, he may be rewarded for staying in his seat. It is obvious that he cannot stand and sit at the same time; so if the reinforcer is strong, his in-seat behavior will increase.

Premack Principle: Often, a behavior which is occurring infrequently can be increased by pairing it with a high frequency or pleasurable activity. For instance, if a child would rather draw on the board than go out to recess, it may be arranged for the child to draw on the board only after he has been out to recess.

Satiation: For many reasons, what has been reinforcing a child may become ineffective over time. If candy is being used, the child may have had all he wants or he may get tired of receiving the same treat. Verbal praise, too, can lose its effect if it is overused. To prevent satiation, reinforcers should be changed frequently and phrases used in verbal praise should be varied.

Target Behavior: This refers to the behavior to be increased or decreased. It is the observable subject of the behavior modification program.

Modeling: Children tend to copy or imitate those people they admire. A good model serves as an example cf appropriate behavior which the child can emulate. Teachers, parents, peers, and others serve as examples after which children model their own behavior.

Shaping: It cannot be expected that a behavior will appear in its final form in the early stages of training. For instance, when a child learns his times tables, he will learn a few at a time until he masters the entire skill. If reinforcement is not given until all the times tables are mastered, the child may lose interest or feel the task is impossible. Shaping, then, refers to the process of reinforcing small steps in the direction of the goal. Once the goal has been selected, the teacher must break it down into orderly steps from most simple to most complex. Each step that is accomplished, starting with what the child can already do, is reinforced until the behavior is shaped to its final form.

Cueing: Cues can be arranged to alert a child before correct performance is expected. This arrangement avoids reprimands for incorrect performance because the child knows what is expected and when he should perform. The teacher may discuss a plan with a child which will aid him in remembering to write his name on his pa er. As paper is passed out, the teacher may tap the chalkboard or do some other simple act to alert the child. As the child begins to write his name on his paper more consistently, the cues may be lessened and gradually omitted.

## Setting Up a Behavior Modification Program

Selecting Behaviors to be Changed: Before a teacher can set up any kind of behavior modification program, she must carefully study what is already happening and what she wants for outcomes. Goals for each situation may be different, but they must be reasonable and ethical. If a behavior is to be changed merely for the teacher's benefit without concern for the child's development, the change is not justified.

Often we say, "Johnny is a problem child" or "I wish Susan would settle down." These statements are global cues that something is wrong, but offer no direction for a solution. Johnny needs to be observed to see what he does that causes a problem. Once the problem behaviors are pinpointed, they are stated in observable, countable and repeatable terms. It has been said that anything that can be observed can be counted. When a target behavior is stated in terms such as "out of his seat too often" or "talking out in class," it is then possible to find out how often this happens and to do something about decreasing the occurrence. In order to be repeatable, the phrase, "destroys property" is more effective than "tore Patty's dress."

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In selecting target behaviors, the following should be kept in mind:

1. The more frequently a behavior already occurs, the easier it will be to change because there are more opportunities for reinforcement.
2. Only a few behaviors should be worked on at a time. It is an impossible job to mold all aspects of a child's behavior at one time. Select a few behaviors which are most in need of change and as the changes take place, others may be substituted.
3. Each target behavior must be broken into small steps of increasing difficulty. During training, behavior is shaped by reinforcing these small steps as they occur.
4. Behavioral objectives or statements of behavioral goals should, when possible, be written in positive terms. This helps keep the emphasis on positive reinforcement. "Bill will stay in his seat during study time" is a better statement than "Bill will not wander around the room."

Schedules of Reinforcement: Once the target behaviors have been selected and defined, the type of reinforcement is determined. A schedule for giving reinforcement is also planned. The type of positive reinforcement or punishment that works will vary from child to child. No matter how well defined a program may be, it will surely fail if ineffective reinforcers are selected. By observing the child, one can determine many things which that individual enjoys. An interview with the child and/or his parents can also bring about suggestions for reinforcers. Teachers using behavior modification must be prepared to be flexible in adapting reinforcers to meet individual needs.

To be most effective, reinforcement should closely follow the occurrence of appropriate behavior. A "100%" on completion of a paper is more effective than an "A" on a report card six weeks later. When tasks have been broken into small steps, each step should be reinforced as soon as possible after completion.

If, after careful application, positive methods do not appear to be working, and punishment is decided upon, it is important to remember that highly emotional or physically painful consequences are not necessary. Many things can be punishing to a child without involving argument, lecturing or loss of self control by the teacher. It must also be remembered that, as with positive reinforcers, blanket statements cannot be made as to what will punish a particular child. The teacher may become quite frustrated if she takes a child's candy away as punishment only to find the child did not want the candy anyway.

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There are several schedules which can be followed in reinforcing behavior.

Continuous reinforcement. When a new task is being learned, acquisition is more rapid if reinforcement is given after each occurrence of the behavior. For example, a child who is being reinforced for coming to school on time will improve more quickly if he gets a checkmark every day that he is on time. Daily report cards may be more effective than semester reports.

Intermittent reinforcement. Once a behavior is mastered, continuous reinforcement becomes less effective. If reinforcement is discontinued at this time, it is very probable that the child will feel the game is over and the new behavior will be lost. For this reason, it is essential to switch to a program of intermittent reinforcement. Now the behavior is reinforced only part of the time and the frequency of reinforcement can be decreased gradually, until the program is phased out. This transition is a step that is often overlooked in classrooms. When the child begins to function well, either the program is dropped completely, or continuous reinforcement is continued too long. Teachers often cling to a program "because it is working," rather than allowing the student to become independent and self-controlling.

Intermittent reinforcement may take one, two, or a combination of three forms. Ratio. For every ten problems completed, reinforcement is given. Interval. Every fifteen minutes, those children who are working on their assignments will be reinforced. Variable. The child cannot predict when he will be reinforced. Reinforcement still immediately follows the specified behavior, but in a random pattern.

Alternative Programs: The principles of behavior modification can be applied in a variety of programs. Following are three ways of developing behavior modification programs.

Tangible Reinforcers: Often, criticism is leveled at behavior modification because of the use of candy, toys, etc. It is felt that children should learn for praise or for pure love of learning. For most children, these are effective motivators, but some children need more than praise to get them going. If a program of tangible reinforcement is decided upon, two pitfalls can be avoided. First, as previously stated, tangible reinforcers are not necessary for everyone. Application of an "M & M" program for a whole class may appear to work, but other, more traditional, reinforcers would probably also work. Second, tangible reinforcers should not be used in isolation. Pairing them with more traditional types of reinforcement can and should lead to less dependence on candy, etc. and more acceptance of

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praise or grades. If a child hears, "good work" as he receives
his candy, soon "good work" will have a pleasing effect and the
candy will not be as necessary.

Contingency Contracting: Negotiating a contingency contract
involves an agreement between teacher and student as to what the
child is expected to do in return for something he wants. To be
effective, the contract must be fair to both parties, clearly
stated, and agreed upon and adhered to by teacher and student
alike. This type of agreement can be highly individualized.
It offers the child a chance to say what he feels he can do and
gives him a part of the planning.

Group contingencies may also be devised. It may be advantageous
to make a privilege available to a whole group after each member
has acted appropriately. (The class may go to recess when every-
one is quiet.) The whole group may receive a reward when a par-
ticular member completes an act within his capability. (When
Jan answers a question, everyone gets a point.) Or, a contin-
gency may be arranged which each group member can receive in-
dividually. (Those who complete their math may have free time.)

Token Economy: Sometimes, reinforcement immediately after a
behavior is not possible or practical. Yet, if the reinforcing
event does not follow appropriate behavior immediately, its
effectiveness is likely to be lost. When reinforcement must be
delayed, a form of token reinforcement may be implemented. Points,
poker chips, or other forms of tally are given immediately after
an appropriate behavior occurs and exchanged during a specific
time period for other things. Tangible objects, free time, or
special privileges can be "bought" with tokens. If carefully
administered, these programs can be quite effective. Here, as
with all other types of behavior modification, the teacher must
be flexible and alert to changing needs. A program which does
not change to allow for satiation and does not move in the direc-
tion of self-control and independence is of little value.

Observing Behavior in Behavior Modification Programs

In order to determine whether or not progress is being made,
some type of record-keeping device should be developed. This can
be minimal or complex depending on the time available and the
needs of the teacher. While record keeping is important, one
need not become so involved with charting that time with children
is sacrificed.

The teacher may devise a graph or tally sheet to mark when be-
havior occurs. Often the child himself can be involved in his
own record keeping. This has added reinforcing value itself.
The child feels responsible for his progress and is motivated to
improve. In situations where aides or volunteers are available,

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they may be trained to observe and chart occurrence of behavior. "" is approach may be superior when the effect of a reinforcement program is being examined without the child's awareness.

Strategies for counting and charting behavior are numerous depending on the needs and creativity of the teacher. A simple tally of how many times a behavior occurs, marked on a 3x5 card may be sufficient. Certain periods of the day may be selected for observation (seat-work time, recess, etc.), or a spot check every half hour (15 minutes, 20 minutes, etc.) to see whether the child is engaged in a specified activity may be employed. Sometimes, the criterion is not how often a behavior occurs, but how long it lasts. In this case, the number of seconds, or minutes the child spends in a given activity may be recorded.

If it is felt to be too time consuming to record a child's or class' target behavior while class is in session, tasks such as "number of math problems completed," "number of pages read," etc., can be counted after the children have left the room. It is of little value, however, to rely on memory when charting behaviors for which no concrete record is available. For example, the number of times a child talks out during a lesson cannot be tallied while the children are out to recess.

If it is decided that the strength of a certain reinforcer needs to be examined empirically, four stages of recording are compared.

1. Baseline. The frequency of the behavior is determined before any change is made in dealing with the child.
2. Treatment 1. When this frequency is fairly stable, the treatment or intervention is applied and again behavior is counted. If the treatment works, the frequency should change and then stabilize again.
3. Reversal. To determine **whether** the reinforcement is actually maintaining the new behavior, a return to conditions prior to intervention will show a trend toward return to baseline. If the behavior change is essential to classroom achievement, however, the reversal stage may not be practical as the child's progress would be temporarily sacrificed.
4. Treatment 2. The reinforcement condition is again applied and behavior should again improve.

A Final Note

The wise teacher will carefully study the concepts of behavior modification and plan her programs well before applying them. Difficult problems should be discussed with someone who has had experience with behavior modification; resource materials and consultants can offer specific suggestions when doubts are present.

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Behavior modification is not a panacea for all behavior problems,
but its effectiveness is supported by more scientific research
in laboratory and classroom settings than other approaches to
behavior management. It is a potentially effective tool which
may be put to good use in classroom settings.

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## FERNALD METHOD

The Fernald tracing method or Fernald-Keller kinesthetic method
was developed for use with extremely disabled readers. This
multisensory cognitive approach first teaches a child to write
words correctly, write stories using the words he learns, and
read those stories in print. Later, he begins to read material
other than his own. The program works well with older children
who have not learned to read, because in the early stages the
child selects the words to be studied. He is not limited by the
simplicity of beginning reading materials. The program is divided
into four stages.

Stage One: This stage emphasizes tracing words which the child
has chosen to learn. Each word is printed for the child in
blackboard-size print. As the child traces each word, he must
touch the paper and pronounce the word (the words are pronounced
in the way they sound without breaking them into separate letter
sounds or syllables). When the word can be written correctly
without looking at the copy, the child uses it in an original
story. The story is typed by the teacher and the child files
the new word alphabetically in his word file (this alphabetizing
helps him learn the letters of the alphabet in a meaningful way.)
If the child makes an error when attempting to write the word,
the paper is taken away, more tracing is done and the child tries
again on a clean sheet of paper. As the child learns words more
quickly, fewer and fewer tracings are necessary and soon the
activity can be eliminated.

Stage two: Stage two begins when the child no longer needs to
trace a word to learn it. He can look at it, say it to himself,
and then write it without looking at the copy. All other activ-
ities are the same as stage one--pronouncing while writing,
writing and reading stories, and filing words alphabetically.

Stage three: The child now learns directly from words in print
rather than having them written for him in large letters. In
this stage he begins to read from books. He can select any book
he wants, but may have more success if the books are not extremely
difficult. The teacher tells him any words he doesn't know and
later these words are studied in the method described.

Stage four: The child uses context clues and similarities to
words he knows to decode new words. If he cannot figure out a

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word, he is told by the teacher and again uses the word-learning method to master it. When a child is reading on his grade level, formal training is discontinued.

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SPALDING PHONICS METHOD

Ronalda Spalding developed what she called "The New Unified Phonics Method" as an alternative to sight methods which she criticizes for causing guessing and bad study habits. Her method must be followed exclusively and rigidly for best success. Spalding assumes all children can attend to group instruction, have large speaking vocabularies and have all the cognitive skills necessary to follow the program.

The method: The class is taught as a whole because Spalding feels that breaking into small groups wastes too much time. The teacher presents 70 phonograms representing the 45 basic sounds in the English language. Students repeat each sound and copy the written symbols for each in a notebook which must conform to exact standards (lower-case manuscript on 3/8 inch ruled paper, skipping every other line).

In teaching letter formation, Spalding uses a clock face. All letters follow a number sequence on the clock. For example, the pattern for S is 2-12-10-4-6-8. Spalding uses only phonetic sounds not letter names, as she feels the names confuse the young readers. Words which do not conform to the rules are taught as sight or as learned words, but there are few of these. Spalding claims that only 50 of 1,000 words on Leonard P. Ayres measuring scale for ability in spelling do not conform to her rules. She uses this list for spelling dictation.

As phonograms are learned, drills no longer include visual clues from the teacher. After all of the phonograms are mastered by at least one-half of the class, words are introduced in groups that follow phonetic rules. The teacher says each word clearly, pronouncing each phonogram in it, and uses carefully prescribed hand movements. It is believed that these hand movements are a valuable cue for students. The children repeat the words and copy them carefully in their notebooks.

As the phonetic rules are learned, a primer is introduced. This book has no pictures to give "guessing" clues. The presentation of books is delayed until this stage so that children can grasp the meaning of the stories.

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GILLINGHAM-STILLMAN (ORTON) PHONICS METHOD

This method was developed by Gillingham and Betsy Stillman. They used Sam Orton's theories as their basis to build a program which

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could be used with children from ages six through high school.
The emphasis in this alphabetic system is on auditory discrimi-
nation in contrast to other group methods which stress visual
reception. The training is formal and steps must be followed
strictly. Children are not allowed to read any other material
while in early training. The auditory emphasis demands that
children have auditory skills intact or more failure may be ex-
perienced. It is, therefore, important to diagnose strengths
and weaknesses carefully before placing a child in this program.
(Gillingham feels, however, that all children should use the pro-
gram to prevent spelling difficulties as well as to learn to read.)

The instruction manual is very explicit. It defines eight
"linkages" by which phonograms are taught (beginning with short
a and several consonants). The eight linkages bring together
auditory, visual and kinesthetic stimuli.

1.  The teacher shows a phonogram and pronounces it. The students
    repeat the sound to associate it with the letter.
2.  The children practice tracing, copying and writing the phono-
    gram from memory.
3.  The children name the phonogram when they see it. Each child's
    hand is moved to form the letter (this associates the look
    and feel of the letter).
4.  The children write the phonogram from dictation.
5.  The phonogram is shown and the children make the sound.
    Their hands are moved to form the letter, and again the
    children make the sound.
6.  Children produce the sound when the phonogram's name is given.
7.  The teacher makes the sound and the children give the phono-
    gram name.
8.  The teacher gives the sound; the children write the letter
    symbols and name them.

Blending is taught by placing several phonogram cards on the
table. The children pronounce the sounds rapidly in succession.
The day after blending is introduced "Simultaneous Oral Spelling"
begins. The teacher sounds a word and the children identify the
letters. They then write the letters and name them.

All work is done with purely phonetic words. Even after sound
blending is mastered, all books are screened and only those whose
vocabulary is purely phonetic are permitted. Later, after child-
ren can pronounce any combination of phonetic syllables, non-
phonetic syllables are introduced as sight words.

Gillingham seems to assume comprehension will occur because
little mention is made of word meaning practice.

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MONROE PHONETIC METHOD

The Monroe Phonetic Method has been very effective with severely
disabled readers; although it can be used with less severe prob-
lems, it is slow and laborious and other methods are more effi-
cient for children with more normal skills.  The program is highly
individualized with emphasis on phonetic drill.  The variety of
activities is intended to keep work meaningful.  The child's
problems are carefully diagnosed, and the following activities
are used as needed.

Vowel and consonant deficits are a major source of problems for
poor readers.  First, ability to discriminate sounds in speech
and match them with letter symbols is taught.  Several pictures
that begin with the same consonant or contain the same vowel are
glu·  on cards and studied by the student.  Next, cards for two
unl,.  sounds are mixed and the child says each sound to improve
his discrimination.  When the sounds have been learned, they are
associated with letters through the activity of tracing.  Sound
blending is the next step in the progressi.n.  The child is en-
couraged to pronounce each sound separately if necessary as he
traces and blends (left to right movement is stressed).  Recall
is tested with flash cards.

Specially prepared phonetic stories are used for reading practice,
and nonphonetic words are taught by sounding and tracing or are
determined from context as the child progresses.

Addition of sounds (most often l and r) may be caused by failure
to discriminate consonant blends and word forms.  Drills are
given on word lists containing words that are alike except for
the presence of l or r (tack, track, fat, flat).

Omissions may be caused by too much speed or poor visual dis-
crimination.  Often, use of the method for teaching vowels and
consonants as mentioned may eliminate the problem.  If speed is
the cause, slower reading rate is encouraged.  If repetitions
occur, due to insufficient word recognition or stalling to figure
out words, use methods described for teaching letter sounds.  If
repeating is a habit it should be pointed out continuously so the
child will attempt to correct it himself (oral reading with the
teacher and student together helps to call attention to the
repetition).

Addition of adjectives and adverbs should be ignored unless it
changes meaning.  In this case, attention should be called to
what is happening in the story.

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GATES READING METHOD

Gates feels that it is necessary to use the same methods with
severely retarded readers as are used in the best programs for
normal children. He is opposed to the more rigid programs such
as Fernald and Monroe. Enrichment, not restriction, is his
emphasis. This program is very flexible. Its success depends
on the teacher, who must diagnose carefully and choose the proper
approach for each child. The teacher must also take time to
demonstrate and explain as many times as necessary to keep the
child moving at the proper pace. If, after experience with con-
ventional programs, the child fails to make progress, it may be
necessary for the teacher to resort to tracing and writing tech-
niques for a short time only. As soon as the child demonstrates
that he can maintain left to right progression he should go back
to the other methods.

STERN ARITHMETIC METHOD

Very few attempts have been made to develop arithmetic programs
for the learning disabled, other than Katherine Stern's Instruc-
tional Arithmetic. This widely used, systematic approach is
based on the idea that arithmetic is the foundation of mathe-
matics and science study. Concrete materials are used in demon-
stration experiements and games to teach number relationships.
The child can immediately see if he is right or wrong when he
manipulates the materials. Four different level kits which in-
clude teacher's manuals, film strips, materials and pupil work-
books are available.

LEHTINEN PERCEPTUAL METHOD

Lehtinen based her work on research by Strauss, and although she
was one of the earliest to provide programs for minimally brain
damaged children, her methods are still widely used. The brain
injured child has disorders in perception and conceptual forma-
tion. He is abnormally aware of stimuli and reacts strongly.
To help him concentrate on learning, the environment must be
controlled and structured. Emphasis is placed on self-control
and remediation of weaknesses, rather than building on strengths.
Lessons are activity oriented, not drill oriented. Lehtinen feels
excessive drill may cause the child to rely on rote memorization
without comprehension. Motor activities, such as sorting, cutting,
printing or writing, and manipulating counters and gadgets are
used. The children develop their own materials for these

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activities in order to gain insight into how materials are made and used. Use of materials, not the materials themselves, is the mainstay of this method. Normal organization of parts and relatedness of parts in pattern are the underlying concepts taught.

BARRY LANGUAGE APPROACH

The Barry approach is directed to teaching receptive and expressive language to learning disabled children of normal intelligence. Barry's emphasis is on learning disabilities rather than peripheral hearing loss, mental retardation, or emotional disturbances. Her program is very valuable and useful, not only for language training, but for other related functions.

Multisensory stimuli are provided. Training begins with color words. Two-inch color blocks are used to teach the various colors. The teacher sits very close to the child to maintain visual attention and a hearing tube is used for auditory attention. After the teacher has instructed the child, she asks, "Where is red," or, "Where is the red block?" The child responds by picking up the correct block. After the child demonstrated that he knows several colors, the teacher sits behind him and asks for the colors. If this approach is too difficult, written colored words are used in place of auditory clues. The child matches colors and colored words and traces the words. Soon, the words are printed in black. In extreme cases, where the color concept proves too complex, toys may be used in place of blocks. After color words, teaching follows this progression. Nouns, verbs, prepositions, simple commands, and prepositional phrases.

When the child appears to have good command of receptive language, expressive language training begins. Nouns are taught first, then verbs, prepositions, pronouns, phrases and sentences are presented. Once the child has adequate vocabulary and knows the parts of speech, complete sentences are required. Children are encouraged to build language skill by talking about interests and experiences. Older children learn dictionary use, spelling rules and grammar.

MYKLEBUST LANGUAGE APPROACH

Helmer Myklebust has dedicated many years of study to the development of programs for learning disabled children. Although his major thrust is in auditory language, he recognizes the important relationship between visual, auditory and graphic channels in verbal and nonverbal learning.

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Myklebust identified twelve fundamental principles which were used to develop specific methods of remediation in areas of language, reading, written language, arithmetic and nonverbal learning. The principles are:

1.  Teaching must be individualized.
2.  Teaching according to readiness in a balanced program is essential.
3.  Teaching must be as close to the level of involvement as possible.
4.  Consider that input precedes output as a basis for classification or grouping.
5.  Teach to the tolerance level, avoiding overloading in particular.
6.  Use multisensory stimulation.
7.  Raise the deficits without undue stimulation or demand of the disability itself.
8.  Teaching to the integrities is necessary, but has limitations.
9.  Provide training in perception when needed.
10. Control important variables such as attention, rate, proximity and size as needed.
11. Develop both the verbal and nonverbal areas of experience.
12. Guide the approach by both behavioral criteria and psycho-neurological considerations.

Auditory language disorders: When auditory language deficits are recognized, training should begin early. Receptive language is developed before expressive. Children are taught in meaningful units to associate environmental sounds with objects and to understand the sounds of speech. Much repetition may be required. The order of presentation for the parts of speech is sounds, nouns, verbs, adjectives, prepositions. Three types of auditory-expressive language disorders are most common. Re-auditorization problems are characterized by inability to recall words or word finding difficulty. Sentence completion exercises together with picture cues and word associations, such as bread and butter, and needles and pins, aid in training spontaneous recall of words. Auditory-motor integration problems (inability to say words) is another problem. Sounds the child can make already are developed before new ones are introduced. The child is taught to voluntarily repeat words and communicate meaningfully. The third major disorder of language is syntax and organization. Two suggested activities are: Scrambled sentences wherein the child puts words in proper sequence; and incomplete sentences wherein the child supplies a suitable word to complete the sentence.

Myklebust's goal in remediation of reading problems is to integrate experience, spoken words and printed words. He identified two common forms of dyslexia—visual and auditory—for which recommendations are quite different. Visual dyslexia requires a phonetic approach as the difficulties stem from inability to

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associate printed words with meaning. Auditory dyslexia, in contrast, implies difficulty in dealing with sounds in words. Whole word methods in which printed words are matched with objects and experiences are advised.

Three major forms of written language disorders are discussed by Johnson and Myklebust. Correction of dysgraphia (problem of visual-motor integration) begins with the use of stencils, dot-to-dot, and tracing. When the child is successful with these activities he is taught manuscript letters and numbers. At the beginning of this training, each figure has arrows superimposed to show the direction to move in completing the letters.

Revisualization (visual-memory) training uses words printed in larger type and perhaps in color to strengthen the visual impression. Auditory and tactile reinforcement also help strengthen recall. Completion of partially drawn pictures from memory and making a circle into as many pictures as possible, are suggested activities. In working with disorders of formulation and syntax, the child must become aware of his errors in writing. The child can listen to the teacher read aloud sentences he has written, listening for errors. Later, he reads his own work aloud and monitors the errors.

The emphasis in remediating arithmetic disorders is on concrete experiences. Counting beads and other motor activities are used in conjunction with visual symbols and verbal cues.

The most important factor in remediating nonverbal disorders is use of realistic pictures and photographs. Nonverbal motor skills are taught in basic movement patterns. For example, in learning to skip, the child is taught how to stand first on one foot, then the other foot. He watches himself in a mirror, listens to others while skipping, and then is encouraged to try the activity.

APPENDIX F

List of Publishers

of Instructional Materials


As RMRRC staff members worked with teachers and children
in the public schools, and later as they trained general-
ists, they gathered information on many types of avail-
able instructional materials. Included here are charts
detailing types of materials available and addresses for
the publishers. Following the charts is a brief descrip-
tion of each of the Format items.

This listing is not comprehensive, and the intent is to
provide information only. Inclusion on or exclusion from
the list is not meant to imply evaluation or recommenda-
tion of any of the materials listed or not included.


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| | READINESS | | | ARTS | | | MATH | | | FORMAT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Motor | Perception | Language Dev. | Reading | Spelling | Writing | Readiness | Computational | Functional | Tutoring | Games | Paperback | Programmed | Visual | Low Vocab. | Dittos | Audio | Affective |
| Acustifone Corp. | | | | X | X | X | X | X | | X | X | | | X | X | | X | |
| Addison-Wesley Publishing Co. | | X | X | X | | | X | X | | X | X | | | | | X | X | X |
| Allied Educational Council | X | X | X | X | | | X | X | X | | | | X | | | | | |
| Allyn and Bacon, Inc. | | | X | X | X | X | | | | | | | X | X | X | X | X | |
| American Book/Van Nostrand Co. | | X | X | | | | | | | | | | | X | | | X | X |
| American Guidance Service, Inc. | | X | X | X | | | | | | | X | | | X | | | X | X |
| Academic Book Service, Inc. West | | | | X | | | | | | | | X | | | X | | | |
| Bailey Film Associates | | X | X | X | | | | X | | X | | | | X | | | X | X |
| Barnell Loft, Ltd. | | | | X | | | | | | | | | | | | X | | |
| Bell and Howell Co. | | X | X | X | | | X | X | | X | X | | | X | | | X | |
| Benefic Press | | | | X | | | | | | | | | | X | X | | X | |
| Benziger, Ing. | | | | X | X | X | | | | | | | | X | | | | |
| Bobbs-Merrill Co. | | | | X | | X | | | | | | | | X | | | | |
| Booster Educational Services | | | | X | | | | X | | X | | | | X | | X | | |
| Borg-Warner | | X | X | X | X | | X | X | X | X | X | | X | X | | X | | |
| Bowmar | X | X | X | X | | | | | | X | X | X | X | X | X | X | X | X |
| Milton Bradley Co. | X | X | X | X | X | X | X | X | X | | X | | | X | | | X | X |

| | READINESS | | | LANGUAGE ARTS | | | MATH | | | FORMAT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Motor | Perception | Language Dev. | Reading | Spelling | Writing | Readiness | Computational | Functional | Tutoring | Games | Paperback | Programmed | Visual | Low Vocab. | Ditto | Audio | Affective |
| Chandler Publishing Co. | | | | X | | X | | | | | | | | X | X | | | |
| Child's World, Inc. | | | X | | | | | | | | | | | | | X | | X |
| Continental Press, Inc. | X | X | X | X | X | X | X | X | X | | | | | X | X | X | | |
| David C. Cook Publishing Co. | | X | X | | | | | | | | | | | X | | | | |
| Coronet Instructional Films | | X | X | X | | | X | X | | X | | | | X | | | X | X |
| Cuisenaire Co. of America, Inc. | X | X | | | | | X | X | X | | X | | | X | | | | |
| DLM Developmental Learning Materials | X | X | X | X | X | X | X | X | X | X | X | | | X | X | X | X | X |
| Walt Disney | | X | X | X | | | X | X | | X | | | | X | | | X | |
| Doubleday Multimedia | | X | X | X | | | X | X | | X | | | | X | | | X | |
| The Economy Co. | | | | X | X | X | | | | | | | | | | | | |
| Edu-Cards | | X | X | X | X | | X | X | | X | X | | | X | | | | |
| Educational Activities, Inc. | X | X | X | X | | | X | X | | | | | | | | | X | X |
| Educational Development Lab. | X | X | X | X | X | | X | X | X | X | | | | X | X | X | X | |
| Educational Progress Corp. | X | X | X | X | X | | X | X | | X | | | | X | X | X | X | |
| Electronic Futures, Inc. | | | X | X | X | | X | X | | X | | | | | | | X | |
| Exceptionale Products Corp. | | | | X | | | | | | | | | | | | | | |
| Eye Gate House, Inc. | | X | X | X | | | X | X | | X | | | | X | X | | X | X |

| Company | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fearon Publishers/Lear Seigler | X | X | X | X | X | X | X | X | X | | X | | | X | | |
| Finney Co. | | | | X | X | | X | X | X | | | | | X | | |
| Follett Publishing Co. | X | X | X | X | X | X | X | X | | X | | | | X | X | |
| Garrard Publishing Co. | | X | | X | | | | | | X | X | X | | X | | |
| General Learning Corp. | X | X | X | X | X | | X | X | | X | X | | | | | |
| Ginn and Co. | X | X | X | X | X | X | X | X | | | X | | | X | | |
| Globe Book Co. | | | | X | X | | | | X | | X | | | X | | |
| Grolier Educational Corp. | | | | X | X | | | | | X | | | | X | X | |
| Guidance Associates of Pleasantville | | | | | | | | | | X | | | | | X | X |
| Hammond Reading Co. | | | | X | X | | | | | X | X | | | X | | |
| Harcourt, Brace and Jovanovich, Inc. | | | | X | X | X | | | | | | | | X | | X |
| Harper and Row | | | | X | | | | | | | | X | | | | X |
| D.C. Heath and Co. | | | | X | X | | | X | | | | | | X | X | |
| Hed, Inc. | | | | | | | X | | X | X | X | | | | | |
| Hoffman Information System, Inc. | | X | X | X | X | | X | X | X | X | | | | X | | X |
| Holt, Rinehart, and Winston, Inc. | | X | X | X | | | X | X | X | | | X | X | X | | X |
| Houghton Mifflin Co. | | | | X | | | X | X | X | X | | X | | X | X | |
| Ideal School Supply Co. | X | X | X | X | X | X | X | X | X | | | | | | | |
| Instructo Products Corp. | X | X | X | X | | | X | X | | X | X | | | X | X | |
| Judy Co. | X | X | X | X | | | X | X | | X | X | | | X | X | |

| | READINESS | | | LANGUAGE ARTS | | | MATH | | | FORMAT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Motor | Perception | Language Dev. | Reading | Spelling | Writing | Readiness | Computational | Functional | Tutoring | Games | Paperback | Programmed | Visual | Low Vocab. | Dittos | Audio | Affective |
| Kenworthy Educational Service, Inc. | X | X | X | X | X | | X | X | X | X | X | | | | X | | | |
| King Co. | | | | X | | | | | | | | X | | | X | | | |
| Knowledge Aid | | X | X | X | X | | X | X | X | X | | | | | X | | X | X |
| Laidlaw Brothers | | X | X | X | | | | | | | | | | | X | | | |
| Learning Research Associates, Inc. | | | | X | X | X | X | X | X | X | X | X | | | X | | X | |
| Lippincott, and Co. | | X | X | X | X | X | | | | X | | | X | | X | | X | |
| Mafex Associates | | X | X | X | X | X | X | X | X | | | | | | X | | | |
| McCormick Mathers Publishing Co. | | | | | | | X | X | X | | | | | | X | | | |
| McGraw-Hill Book Co., Inc. | X | X | X | X | X | | X | X | X | X | | X | X | | X | X | X | |
| Charles E. Merrill | | | | X | X | | X | X | X | X | | X | | | X | X | X | X |
| Milliken Publishing Co. | | X | X | X | X | | X | X | X | | | | X | | | X | | |
| Milton Bradley | X | X | X | X | X | X | X | X | X | X | X | | | X | | | | X |
| Noble and Noble Publishers, Inc. | | | | X | X | X | X | X | | | | | | | | X | | |
| Open Court Publishing Co. | X | X | X | X | X | | | | | | X | | | X | | | | |
| Phonovisual Products, Inc. | | | | X | | | | | | X | | | | | X | | X | |
| Playskool | X | X | X | X | | | X | | | X | X | | | | | | | |
| Portal Press, Inc. | | | | | | | | | | | | | | | | | | |

| Publisher | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prentice-Hall, Inc. | | | | X | X | | | X | X | X | | | | | X | | | X | | |
| Pruett Publishing Co. | | | | X | X | | | X | X | X | | | | | | | | X | | |
| Psychotechnics, Corp. | | X | X | X | X | | | | | | | X | | | | | X | | X | |
| Pendulum Press | | | | X | | | | | | | | | | X | | | | X | | |
| QUED Productions | X | X | X | | | | | X | | | | X | | | | | X | | X | X |
| Frank E. Richards | | | | X | | | | X | X | X | | | | | | | X | | | |
| Reader's Digest Services, Inc. | | X | X | X | | | | | | | | X | X | | | | X | | X | |
| Responsive Environments Corp. | | X | X | X | | | | | | | | X | | | | | | X | | |
| Rhythm Records | X | X | X | X | | | | X | X | X | | X | | | | | | X | | |
| Rand-McNally | | | | X | X | | | | | | X | X | X | | | | | | | X |
| Random House/Singer School Division | X | X | X | X | | | X | X | X | | | X | | | X | X | | X | X | X |
| William H. Sadlier, Inc. | | | | | | | | | | | | | | | | | X | | | |
| Scholastic Book Services | X | X | X | X | | | | X | X | | | X | X | | X | X | X | X | X | X |
| Scholastic Educational Corp. | | | | X | | | | | | | | | | | X | | X | | | |
| Scott Foresman and Co. | | X | X | X | | | | | | | | X | | | | | X | | X | |
| Scott Education Division | | | | X | | | | X | X | | | X | X | | | X | | X | | |
| Simon and Schuster | | | | X | | | | | | | | | | | X | | X | | | |
| Stanwix House, Inc. | | X | X | X | | | | | | | | | | | | | X | | | X |
| Steck-Vaughn Co. | | | | X | X | | | | X | X | | | | | | | X | | | X |
| Taylor Associates | | | | X | | | | | | | | | | | | | X | | | |

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| | READINESS | | | LANGUAGE ARTS | | | MATH | | | FORMAT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Motor | Perception | Language Dev. | Reading | Spelling | Writing | Readiness | Computational | Functional | Tutoring | Games | Paperback | Programmed | Visual | Low Vocab. | Dittos | Audio | Affective |
| Teaching Resources, Inc. | X | X | X | X | | X | X | | | X | X | | | | | | | |
| Charles C. Thomas, Publishing | | X | X | X | | | X | | X | | | | | X | | | | |
| Fern Tripp | | | | | | | | | X | | | | | | | | | |
| Troll Associates | | X | X | X | | | X | | | X | | | | X | | | | |
| VMI | | X | X | X | | | X | X | X | | | | | X | | X | | |
| Franklin Watts, Inc. | | | | X | | | | | | | | | | | | | | |
| Weston Woods | | | | X | | | | | | X | | | | X | | | X | |
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Brief Definitions of Format Items

Tutoring:                 These are structured or informal materials
                          that are self-tutoring, e.g., drills, film-
                          strips, etc.

Games:                    These include fun games and games that
                          provide instructions and drill.

Paperback:                This refers to paperback books that are
                          used primarily in reading.

Programming:              These are programmed materials, either
                          books  or machine programmed.

Visual:                   Charts and pictures used primarily for
                          visual stimuli.

Low Vocabulary:           These are high-interest, low vocabulary
                          books.  Paperbacks and hardbacks are
                          included.

Ditto/Spirit Masters:     These materials are already printed on
                          spirit masters or duplication rights
                          are already given for thermofax and spirit
                          duplicator use.

Audio:                    The primary input is audio, e.g., tapes or
                          records.

Affective:                The emphasis is on the feelings and self-
                          concept of the student.

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Addresses of Publishers Included in the List

Acustifone Corporation
20149 Sunburst Street
Chatsworth, California  91311

Addison-Wesley Publishing Co.
Sand Hill Road
Menlo Park, Calif.  94025

Allied Educational Council
Distribution Center
P.O. Box 78
Galien, Michigan 49113

Allyn and Bacon, Inc.
Ralston Park
Belmont, California 94002

American Book/Van Nostrand Co.
399 Adrian Road
Millbrae, California 94030

American Guidance Service, Inc.
Publisher's Building
Circle Pines, Minnesota  55014

Academic Book Service, Inc., West
9830 Baldwin Place
El Monte, Calif.  91731

Bailey Film Associates
5995 South Clarkson
Littleton, Colorado

Barnell Loft, Ltd.
958 Church Street
Rockville Center
Long Island, New York  11510

Bell and Howell Company
7100 North McCormick Road
Chicago, Illinois  60645

Benefic Press
Lambert Bldg., Suite 202
200 Nieto Avenue
Long Beach, Calif.  90803

Benziger, Inc.
866 Third Avenue
New York, New York  10022

Bobbs-Merrill Company
4300 West 62nd Street
Indianapolis, Indiana  46268

Booster Educational Services
Box 577
Delta, Utah  84624

Borg-Warner
7450 North Natchez Avenue
Niles, Illinois  60648

Bowman
622 Rodier Drive
Glendale, California  91201

Milton Bradley Company
443 Shaker Road
Longmeadow, Massachusetts  01028

Chandler Publishing Company
124 Spear Street
San Francisco, California  94105

Child's World
Box 681
Elgin, Illinois  60120

Continental Press, Inc.
367 South Pasadena Avenue
Pasadena, California  91109

David C. Cook Publishing Co.
School Products Division
850 North Grove Avenue.
Elgin, Illinois  60120

Coronet Instructional Films
65 East South Water Street
Chicago, Illinois  60601

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Cuisenaire Company of America, Inc.
12 Church Street
New Rochelle, New York   10805


DLM Developmental Learning Materials
3505 North Ashland Avenue
Chicago, Illinois   60657


Walt Disney
Buena Vista Distribution Co., Inc.
800 Sonora Avenue
Glendale, California   91201


Doubleday Multimedia
8348 Sheffield Road
San Gabriel, California   91775


The Economy Company
P.O. Box 25308
Oklahoma City, Oklahoma   73125


Edu-Cards
60 Austin Blvd.
Commack, New York   11725


Educational Activities, Inc.
Box 392
Freeport, New York   11520


Educational Developmental Lab.
284 Pulaski Road
Huntington, New York   11743


Educational Progress Corp.
8538 East 41 Street
Tulsa, Oklahoma   74145


Electronic Futures, Inc.
917 South York Road
Elmhurst, Illinois   60126


Exceptionale Products Corp.
P.O. Box 23014
Richfield Branch
Richfield, Minnesota   55423


Eye Gate House, Inc.
146-01 Archer Avenue
Englewood Cliffs, New Jersey 07632


Fearon Publishers/Lear Seigler
6 Davis Drive
Belmont, California   94002


Finney Company
3350 Gorham Avenue
Minnespolis, Minnesota


Follett Publishing Company
1010 West Washington Blvd.
Chicago, Illinois   60607


Garrard Publishing Company
1607 North Market Street
Champaign, Illinois


General Learning Corporation
250 James Street
Morristown, New Jersey   07960


Ginn and Company
2550 Hanover Street
Palo Alto, Calif.   94304


Globe Book Company
175 Fifth Avenue
New York, New York   10010


Grolier Educational Corporation
845 Third Avenue
New York, New York   10022


Guidance Associates of Pleasantville
Pleasantville,
New York   10570


Hammond Reading Company
4645 Holiday Blvd.
Salt Lake City, Utah   84117


Harcourt, Brace and Jovanovich, Inc.
Polk and Geary
San Francisco, California   94109


Harper and Row
P.O. Box 370
Pleasanton, California   94556


D.C. Heath and Company
2700 North Richard Avenue
Indianapolis, Indiana   46219


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Hed, Inc.
P.O. Box 1
Fort Collins, Colorado

Hoffman Information System, Inc.
5623 Peck Road
Arcadia, California   91006

Holt, Rinehart and Winston, Inc.
Crocker Park
Box 3400
San Francisco, California   94134

Houghton Mifflin Company
777 California Avenue
Palo Alto, California   94304

Ideal School Supply Company
11000 South Lavergne Avenue
Oak Lawn, Illinois   60453

Instructo Products Corp.
Paoli,
Pennsylvania   19301

Judy Company
250 James Street
Morristown, New Jersey   07960

Kenworthy Educational Service, Inc.
P.O. Box 3031
Buffalo, New York   14205

King Company
2414 West Lawrence Avenue
Chicago, Illinois   60625

Knowledge Aid
6633 West Howard St.
Niles, Illinois   60648

Laidlaw Brothers
Thatcher and Madison Avenues
River Forest, Illinois   60305

Learning Research Associates, Inc.
1501 Broadway
New York, New York   10036

Lippincott and Company
East Washington Square
Philadelphia, Pennsylvania   19105

Mafex Associates
111 Barron Avenue
Box 519
Johnstown, Pennsylvania   15907

McCormick Mathers Publishing Co.
300 Pike Street
Cincinnati, Ohio   45020

McGraw-Hill Book Company, Inc.
Webster Division
8171 Redwood Highway
Novato, California   94947

Charles E. Merrill
1300 Alum Creek Drive
Columbus, Ohio   43216

Milliken Publishing Co.
611 Olive Street
St. Louis, Missouri   63101

Milton Bradley
New England Division
P.O. Box 1581
Sp··'··field, Mass.   01101

Noble and Noble Publishers, Inc.
750 Third Avenue
New York, New York   10017

Open Court Publishing Company
P.O. Box 599
LaSalle, Illinois   61301

Phonovisual Products, Inc.
12216 Parklawn Drive
Rochville, Maryland   20852

Playskool
3720 North Kedzie Avenue
Chicago, Illinois   60618

Portal Press, Inc.
605 Third Avenue
New York, New York   10016

Prentice-Hall, Inc.
570 Price Avenue
Redwood City, California   94063

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Pruett Publishing Company
1428 Pearl
Boulder, Colorado

Psychotechnics, Inc.
1900 Pickwick Avenu
Glennview, Illinoi.    0025

Pendulum Press
9830 Baldwin Place
El Monte, California   91731

QUED Productions
2921 West Alameda Avenue
Burbank, California   91505

Frank E. Richards
324 First Street
Liverpool, New York   13088

Reader's Digest
Educational Sales Division
827 Ninth St.
Santa Monica, Calif.   90403

Responsive Environments Corp.
Englewood Cliffs,
New Jersey   07632

Rhythm Records
P.O. Box 7308
Houston, Texas   77008

Rand McNally/Lyon's Carahan
P.O. Box 7600
Chicago, Illinois

Random House/Singer School Div.
111 Main Street
Suite A
Los Altos, Calif.   94022

William H. Sadlier, Inc.
11 Park Place
New York, New York   10007

Scholastic Book Services
5674 Sunol Blvd.
Pleasanton, Calif.   94566

Scholastic Educational Corp.
900 Sylvan Avenue
Englewood Cliffs, New Jersey   07632

Scott F   esman and Company
855 California Avenue
Palo Alto, California   94304

Scott Education Division
Holyoak,
Massachusetts   01040

Simon and Schuster
630 Fifth Avenue
New York, New York   10020

Stanwix House, Inc.
3020 Chartiers Avenue
Pittsburgh, Pennsylvania   15204

Steck-Vaughn Company
P.O. Box 2028
Austin, Texas   78767

Taylor Associates
106 Morningside Drive
New York, New York   10027

Teaching Resources, Inc.
100 Boulston Street
Boston, Mass.   02116

Charles C. Thomas, Publishing
301-327 East Lawrence Avenue
Springfield, Illinois   62703

Fern Tripp
2035 East Sierra Valley
Dinuba, California   93618

Troll Associates
320 Route 17
Mahwah, New Jersey   07430

VMI
2549 Middlefield Raod
Redwood City, Calif.   94063

Franklin Watts, Inc.
845 Third Ave.
New York, New York   10022

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Weston Woods
Weston,
Connecticut  06880

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APPENDIX G

The Original Training Program

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## THE ORIGINAL TRAINING PROGRAM:   An Overview of Development

**Stratistician
Program**

During the 1970-71 school year, RMRRC personnel
met with members of the Utah State Board of
Education (USBE), district directors of special
education, and faculty members of the University
of Utah, Department of Special Education, to
formulate a plan to best meet the priority unmet
need of handicapped children in Utah.  At that
time the state was providing adequate education-
al services to approximately 60 percent of the
handicapped population in the state.  It was
postulated that the 40 percent of unserved
children would be found in the regular class-
rooms.  A method was conceptualized wherein a
person--a stratistician--would be placed in an
elementary school to provide help to any teacher
who was having "trouble" with a student.
Because the regular classroom teacher has re-
sponsibility for the student through the school
day, and because it had been postulated that
the majority of unserved children are in
regular classrooms, the main focus of the
stratistician was to train the regular class-
room teacher in the skills necessary to work
with the handicapped children in the class.

By focusing on the teacher, the    is a potential
"spin-off" effect.  For example, if a teacher
refers a student who is falling behind in his
work and is causing difficulty in the class,
and it is found--through some diagnostic
measures--that the student has an auditory
sequential memory problem, the stratistician
would work with the teacher in several areas:
help the teacher recognize the symptoms of the
problem; help the teacher in the area of cur-
riculum for that student; and relay information
to the teacher about the most effective teach-
ing styles for a child with auditory sequential
memory problems.  The "spin-off" effect applies
to every skill that is taught by the teacher,
not just for the specific child or for the
class she is now teaching, but for future clas-
ses as well, assuming she retains the skill.

In addition to providing service to teachers,
and therefore to students, the stratisticians

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were asked to collect data on the types of
problems referred, the strategies they developed
to deal with the problems, and to keep track of
the skills they found were necessary to function
as a stratistician. These types of data were
collected for two years, with the aim of test-
ing the transferability of the model.

A proposal to test the model on a broader base
was formulated with the cooperation of the
USBE. A letter was sent from the Deputy Super-
intendent's office to 30 school districts,
primarily rural, to invite them to participate
with the RMRRC during the 1973-74 school year
in a project to train special educators in
elementary schools to function as stratisticians.
Twenty-one school districts replied, and these
21 were contacted with details of the program
and of the accompanying comprehensive evalua-
tion of the impact of the program. Details
specified that the district would provide a
certified special educator already on their
salary roles. This person would be available
for a two-week training period in August and
would be released from the district one day
per month for follow-up training sessions. In
return the RMRRC would provide a staff member
to meet at least twice a month with the selected
special educator in his school; to provide the
two-week training session; to cover all costs
of data collection and all costs of travel to
and from the center. These arrangements were
to continue throughout the school year. Agree-
ments were reached with 11 districts, and 17
special educators from 17 elementary schools.

Development of the Training Program

In developing a training program for the 17
selected special educators, three major con-
straints had to be considered:

    1.  Variety of Professional Backgrounds in
Training. To function as a resource teacher or
a generalist in the State of Utah, a person may
hold one of four different special education
endorsements: learning disabilities, mental
retardation, behavioral disorders, or speech
and hearing. The people coming into the train-
ing program could come from any or all of these
four special education backgrounds. Furthermore,

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they would have been trained at various teacher training institutions; certification programs in the four areas vary greatly in course content between institutions.

2. Variance of Professional Experiences. Because the districts selected the special educators who would be participating in the program, it was anticipated that some of the special educators would have previous experience in resource rooms, some would have previous experience in regular classrooms, and some--just graduated--would not have any actual teaching experience. There were also some participants who had previously served in support roles, such as a psychologist, a social worker and a counselor.

3. Variance in School Beginning Dates. Being involved in 11 districts across the state meant that some classrooms were opening as early as August 24, and others not until September 6. This variance effected the availability of the participants for training in August.

It was felt that the training program could best neutralize these three constraints if it were individualized and competency based. This would allow for the variance in professional expertise and experience, as well as the staggered starting dates. A period of three weeks was set aside in August. Participants could begin on any of six starting dates and participate for 10 days.

An extensive evaluation was undertaken to identify the competencies needed to function in this role. In addition to data collected by the stratisticians while they were working in the role, other data were collected from three school districts where special educators were working in resource room/generalist programs. These resource teachers or generalists were asked to list the skills they felt were needed to fill their role--whether they had the skills or not. In some instances they were asked to prioritize the lists. A workshop was also conducted by the USBE in cooperation with Project Outreach-Utah; participants were invited to brainstorm their perceptions of

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student problems. Over 100 problems were
listed and compiled into major groupings.

Lists of skills needed were then generated
to help meet the needs that had been identi-
fied. Data from the stratisticians, from
local districts, and from this workshop were
then pooled with information gathered by writ-
ing to various universities, teacher training
institutions, and state departments of educa-
tion--all of them involved in competency based
or performance-based programs. (For a list of
sources see Attachment A.) A staff member was
assigned to gestalt this material and provide
a list of all competencies suggested as well
as a frequency count to determine those most
frequently suggested. The competencies fell
into the content areas of identification,
diagnosis, prescription, programming, evalua-
tion and interpersonal skills. The first five
content areas were consistent with the Regional
Resource Center mandate for service under PL 91-
230. Interpersonal skills received a high-
frequency count, especially from field data.

At the same time competencies were being
identified, the structure of competency train-
ing programs was being reviewed. (For a list
of sources reviewed see Attachment B.) Most
training programs identified content areas
felt to be needed, but few training programs
specified clearly the levels to which one should
"know" a content area or the process level at
which one would use the information. Two not-
able exceptions are the Ed Meyen, Ruben Altman
training program at the University of Missouri,
and Lloyd McCleary's training program in educa-
tional administration at the University of Utah.
Meyen and Altman talked about an awareness,
understanding, application level; McCleary
about familiarity, understanding, and applica-
tion levels of utilizing information.

The RMRRC staff adopted, from Bloom's Taxonomy
of Educational Objectives, the process levels
of knowledge, comprehension, application,
analysis, synthesis, and evaluation. The
content-process areas form a matrix upon which
all competency statements can be placed. (See
Figure 1.) The matrix enables decision-making

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Content

| PROCESS | IDENITY | DIAGNOSE | PRESCRIBE | PROGRAM | EVALUATE | | INTER SKILLS |
|---|---|---|---|---|---|---|---|
| KNOWLEDGE (recall) | | | | | | | a b c d |
| COMPREHENSION (understanding) | 1 2 | 7 8 | | 19 | | | |
| APPLICATION (use) | 3 4 | 9 10 | | 20 | | | |
| ANALYSIS (clarify) | 5 | 11 12 13 | 16 | | | | |
| SYNTHESIS (regestalt) | | | 17 | 21 | 23 | | |
| EVALUATION (judgment) | 6 | 14 15 | 18 | 22 | 24 | | |

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Figure 1

Placement of Learning Modules by Number on the Content-Process Grid

in developing training modules: to which level
does a given person need to know certain inform-
ation, and in which certain content areas?
Decisions were made as to what a stratistician
needs only to know compared with what he actually
needs to be able to do. The competency state-
ments were crystallized into the following
statements around which training modules would
be developed.

Modules

## Identification

The generalist shall:

demonstrate an understanding of specific
specialty areas and classification
criteria;

demonstrate an understanding of learning
theories;

utilize conventional task analysis of
basic subject areas;

utilize conventional process analysis of
basic subskills (in task analysis);

interpret personality-behavioral patterns;

synthesize identification factors and
derive a diagnostic direction.

## Diagnosis

The generalist shall:

demonstrate an understanding of student
demographic variables;

demonstrate an understanding of formal
test batteries;

administer formal test batteries;

administer informal test batteries;

interpret formal test batteries;

interpret informal test batteries;

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interpret pupil interviews and observa-
tions;

formulate a diagnostic statement from a
single test;

formulate diagnostic conclusions from
cumulative information.

## Prescription

The generalist shall:

interpret the results of task and process
analysis;

write a statement(s) about a student's
learning style based on strengths and
weaknesses;

match diagnostic appraisal with a remedial
approach.

## Programming

The generalist shall:

demonstrate understanding of purpose and
use of instructional material;

demonstrate the use of instructional
methods/techniques;

match instructional materials and/or
methods/techniques with diagnostic-
remedial approach;

specify performance criteria within an
instructional program.

## Evaluation

The generalist shall:

match performance adjustment to performance
criteria;

determine adjustment as acceptable or
unacceptable.

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## Interpersonal Communication Skills

The generalist shall demonstrate an awareness of:

>    important factors in relating as a human being;

>    important factors in the communication process between two people;

>    problem-solving methodology;

>    factors critical to acceptance in schools.

These modules were numbered 1 through 24 and the interpersonal skills a, b, c and d; the numbers and letters were placed in the appropriate content-process square in the matrix, as seen in Figure 1. Each module was to be developed based on the content area and the process level involved.

## Testing for Placement and Evaluation

A pre-test question, a post-test question, and a performance objective were also written for each module. The purpose of the pre-test question was to enable a participant who knew enough about a particular module to test out of the module without further training. A profile was created on each participant's responses to the pre-test questionnaire to define which of the 24 modules could be skipped, and which would require training. The performance objective was used to enable the trainer to know when the participant was finished with a particular module, and the post-test question was written to evaluate the effect of the training program.

## Two-Week Training Session

As each participant entered the training program, he was assigned, according to the geographic location of his school, to an RMRRC stratistician who would keep track of the participant's progress. The RMRRC stratistician had a profile on the individual's needs according to the content-process matrix; the stratistician worked out a time schedule, dividing the

ten days into two 3-hour blocks for each day.
The generalist participant would then be
grouped in those time blocks with others going
through the same material at specific times.
A participant could be part of the total group,
in a small group, with just one other, or be
working by himself--depending on his needs and
the needs of the others in the training program.
Each generalist received all the written material
from the 24 modules for reference, even if
training in all 24 was not needed. At the end
of the two-week training, the participant com-
pleted a post-test. The stratistician who was
responsible for guiding the participant through
the training program was then assigned as the
intermediate stratistician who would continue
to provide backup support and ongoing training
to the participant throughout the school year.

## Orientation

During August, attempts were made by the train-
ing coordinator and the evaluation coordinator
at the RMRRC to meet with all 17 principals
of the schools and the district directors of
special education from the 11 districts to
orient them to the program. This included an
overview of the stratistician concept, an over-
view of the development and structure of the
training program, the support service model
from the RMRRC to the schools, and the evalua-
tion process. In addition, an attempt was
made to orient the faculty members of the 17
schools just prior to the start of school, or
during the first two weeks of school. This
was to familiarize the regular classroom
teachers in the 17 schools with the concept, to
create awareness of the support services avail-
able to them, and to specify what the program
could mean to each of them in the classroom.

## Follow-up

During the 1973-74 school year, the intermediate
stratisticians were to visit with the partici-
pants in their schools at least twice a month.
The participants were to meet at the RMRRC at
least once a month. The purpose of these meet-
ings was not only to provide additional help
where needed to the participants, but to also

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gain feedback from them on the training program. A three-day session at the end of the school year was planned to enable the participants to review the training materials and make suggestions to the RMRRC for improvements in the program.

ATTA

# BIBLIOGRAPHY ON COMPETI... ..S AND SKILLS NEEDED

## BY STRATISTICIAN/GENERALISTS

An Annotated Bibliography. Performance Based Teacher
Education. American Association of Colleges for
Teacher Education and ERIC Clearinghouse on Teacher
Education, Washington, D.C., 1972.

Annotated Listing of Competency Based Modules. Catalogue.
Florida Center for Teacher Training Materials,
Chipley, Florida, December, 1972.

Bartel, Nettie R., & Hammill, Donald. Teaching Children
with Learning Problems: A Handbook for Teachers.
Philadelphia: Temple University.

Berard, Walter R. Categorical Versus Non-Categorical
Training for Sparsely Populated Areas. Regional
TED/CEC Conference. Salt Lake City, February, 1972.

Bessel, Harold, & Palomares, Uvalda. Methods in Human
Development. San Diego, California: Human
Development Training Institute, 1970.

Buchanan, Mary. The Acceptance of Stratisticians in
the Schools. Salt Lake City, Utah: Rocky Mountain
Regional Resource Center, University of Utah,
November, 1972.

Caldwell, Erin Kent. Competency Based Special Education
Undergraduate Internship at Western Carolina Center
for Mentally Retarded. Boone, North Carolina:
Appalachian State (no date).

Chinn, Philip, & Drew, Clifford. Summary and Recom-
mendations: Teacher Education Division, TED/CEC
Conference on Special Education, February, 1972.

Christoplos, Florence, & Valletutti, Peter. A non-
categorical and field competency model for teacher
preparation in special education. The Journal
of Special Education, 1972, 6 (2), 115-120.

Clinical Teacher Model for Interrelated Areas of Special
Education. Tallahassee, Florida: Department of
Habilitative Sciences, College of Education,
Florida State University, 1972.

339

Competency Based Instructional Model for the University
of Minnesota. University of Minnesota, Department
of Special Education, 1972.

Competency Based Modules for Strategist Training. Coral-
ville, Iowa: Iowa Training Program, Midwestern
Educational Resource System, 1972.

Competencies for Graduate Programs in Special Education.
Eugene, Oregon: University of Oregon (no date).

Competency Lists. Provo, Utah: Provo District, 1973.

Consulting Resource Teacher Training Program. Univer-
sity of Minnesota, Department of Special Education,
1972.

Consulting Teacher Model and Program. Burlington,
Vermont: University of Vermont, February, 1973.

Coordinated Helps in Language Development. Portland,
Oregon: Northwest Regional Educational Labora-
tory, 1970.

Development of Higher Level Thinking Abilities. Port-
land, Oregon: Northwest Regional Educational
Laboratory, 1972.

Elam, Stanley. What Is the State of the Art? Per-
formance Based Teacher Education. Washington,
D.C.: American Association for Teacher Educa-
tion, December, 1971.

Facilitating Inquiry in the Classrooms. Portland,
Oregon: Northwest Regional Educational Laboratory,
1970.

Fifield, Marvin G. Summation of Regional TED/CEC
Teacher Education. Salt Lake City, Utah:
Regional Conference, February, 1972.

Generalist Questionnaires. Weber District, Utah, Spring,
1973.

Gentry, Castelle. Defining Characteristics of a CBTE
Management System. Toledo: University of Toledo,
1972.

Gentry, Castelle. Heuristics for the Development of a
CBTE Program. Toledo: University of Toledo,
1971.

340

Glass, Raymond, & Meckler, Roy.  Training Elementary
     Teachers to Instruct Mildly Handicapped Children
     in Regular Classrooms:  A Summer Workshop.
     Indiana University.

Glass, Raymond, & Newman, Roger.  Development of Auto-
     Instructional Units Designed to Improve the Teach-
     ing of Mildly Handicapped Children in Regular
     Elementary Classrooms.  Center for Innovation in
     Teaching the Handicapped.  Indiana University,
     January, 1972.

Gordon, Thomas.  Human Effectiveness Training.
     Pasadena, California:  Effectiveness Training
     Associates, 1972.

Hall, Keith, & Mitzel, Harold.  Pennsylvania State
     University.  Mobile Inservice Training to Recognize
     Children's Handicapping Conditions for Teachers
     in Regular Classrooms.  A paper given at the
     Conference on Instructional Development and Dis-
     semination in Teacher Education.  Chicago, January,
     1973.

Havelock, Ronald G.  The Change Agent's Guide to Inno-
     vation in Education.  Inglewood Cliffs, New Jersey:
     Educational Technology Publications, 1973.

Houston, W. Robert.  Resources for Performance-Based
     Education.  Performance Education.  New York State
     Education Department--Division of Teacher Educa-
     tion and Certification and Multi-State Consortium
     on Performance-Based Teacher Education.  March,
     1973.

Houston, W. Robert.  Strategies and Resources for
     Developing a Compentency Based Teacher Educational
     Program.  Performance Education.  New York State
     Education Department--Division of Teacher Educa-
     tion and Certification and Multi-State Consortium
     on Performance-Based Teacher Education.  October,
     1972.

Improving Motor-Perceptual Skills.  Portland, Oregon:
     Northwest Regional Educational Laboratory, 1970.

Individualized, Competency-Based Learning Programs in
     Education.  Salt Lake City, Utah:  ILM Publishers,
     1973.

Instructional Specialist for Teachers of Exceptional
     Learners.  Eugene, Oregon:  Northwest Regional
     Resource Center, December, 1972.

341

Interim Report on Development of Competency Based Train-
ing Program. Lexington, Kentucky: University of
Kentucky, Department of Special Education (no
date).

Interpersonal Commun. ·ations. Portland, Oregon: North-
west Regional Educational Laboratory, 2nd printing,
1972.

Johnson, Charles. Some Basic Assumptions Underlying
Competency Based Teacher Education Programs.
Athens, Georgia: University of Georgia, February,
1972.

Lambie, John, & Sorensen, Randolph. Suggestions Concern-
ing Teacher Education Programs. TED/CEC Conference,
Salt Lake City, Utah, February, 1972.

Leadership Training Institute in Learning Disabilities.
Department of Special Education, University of
Arizona. Program Development Branch, Division of
Education Service. Bureau of Education for the
Handicapped. U.S. Office of Education. 1 and 2.
1972.

Mann, Phil, & McClung, Rose. A Learning Problem Approach
to Teacher Education. University of Miama. A
paper given at the Conference of Instructional
Development and Dissemination in Teacher Educa-
tior, Chicago, January, 1973.

Mourtisen, Roger. The Impact of Competency Based Teacher
Education and Certification Programs in Utah. Un-
published paper, 1972.

Ojemann, Ralph H. A Teaching Program in Human Behavior
and Mental Health. Cleveland, Ohio: Educational
Research Council, 1967.

Overview of Non-Categorial Special Education Teacher
Oriented Models. Clarion, Pennsylvania: Clarion
State College.

Pappanikou, John, & Cawley, J. F. Decision System
Modules for Adminstrators. University of Connecticut.
A paper given at the Conference on Instructional
Development and Dissemination in Teacher Education,
Chicago, January, 1973.

Problemat. Davis District, Utah. March 3, 1973. Un-
published paper from conference sponsored by the
Utah State Board of Education.

Problemat. Tooele, Utah. November 2, 1972. Unpublished paper, Participating Districts Advisory Committee Meeting, sponsored by the Rocky Mountain Regional Resource Center, University of Utah.

Problemat on Special Educator Competencies. Jordan District. Jordan, Utah. March 1973.

Prospectus of the Prescriptive Teaching and Diagnostic-Prescriptive Teaching: Training Programs in Special Education Area. Laramie, Wyoming: Department of Guidance and Counselor Education, University of Wyoming.

Prototype--Training Program for the Preparation of Curriculum Consultants for Exceptional Children. Columbia, Missouri: University of Missouri, Competency Research Phase January, 1972. Module Specification Stage--February, 1973. Meyen, Edward L., Director.

Randolph, Norma, & Howe, William. Self-Enhancing Education. Palo Alto, California: Stanford Press, 1966.

Regulations for Teachers--Exceptional Child Education (K-12). Tallahassee, Florida: Department of Education, State Board of Educational Regulations, Chap. 6A-4, Section 17, March, 1972.

Requirements for Certification in Learning Disabilities and for Certification of Special Education Administrators. Department of Special Education, The University of Texas at Austin.

Resource and Principal Role Expectations. Ogden School District, Utah, 1972.

Seward University Project. University of Minnesota, Department of Special Education, 1972.

Special Education Resource Teacher Training. University of Minnesota, Department of Special Education, 1972.

Stamm, John. . General Model for the Design of an Interrelated, Competency-Based Professional Training Program for Teachers of Handicapped Children. University of Oregon. A paper given at the Regional TED/CEC Conference, Salt Lake City, Utah, February, 1972.

343

Stratistician Dialogue. Unpublished paper. Rocky
    Mountain Regional Resource Center, University of
    Utah, June 8, 1972.

Stratistician Questionnaire and Problemat. Salt Lake
    City, Utah: Rocky Mountain Regional Resource
    Center, University of Utah, February, 1973.

Systematic and Objective Analysis of Instruction.
    Portland, Oregon: Northwest Regional Educational
    Laboratory, 1972.

Teacher/Consultant Competencies. Eugene, Oregon:
    Northwest Regional Resource Center, October, 1972.

Thiagarajan, Sirasailom, Semmel, Melvyn, & Semmel,
    Dorothy. Source Book on Instructional Development
    for Training Teachers of Exceptional Children.
    Center for Innovation in Teaching the Handicapped.
    Indiana University, Bloomington, Indiana. A
    paper given at the Conference of Instructional
    Development and Dissemination in Teacher Education,
    Chicago, January, 1973.

Training Institute for Special Education Teachers.
    Educational Service Center. Austin, Texas. Paper
    given at the Conference on Instructional Develop-
    ment and Dissemination in Teacher Education.
    Chicago, January, 1973.

Wilkits (Weber Individualized Learning Kits). Ogden,
    Utah: Weber State College, various dates.

347

BIBLIOGRAPHY ON COMPETENCY BASED TRAINING PROGRAMS

Deever, R. M., Deneke, H. J., & Wochner, R. E.   The
    Evaluation of Teaching Competence.   Tempe, Arizona
    College of Education:   Arizona State University,
    1970.

Gentry, C. G.   Defining Characteristics of a Competency-
    Based Training Education Management System--A
    Rationale.   University of Toledo, 1972.

Houston, W. R.   Strategies and Resources for Develop-
    ing a Competency-Based Teacher Education Program.
    New York State Education Department Multi-State
    Consortium on Performance-Based Teacher Education,
    1973.

Johnson, C. E.   Some Basic Assumptions Underlying
    Competency-Based Teacher Education Programs.
    Georgia Educational Models, University of Georgia,
    1972.

Kass, C. E.   A System of Objectives Based on Bloom's
    Taxonomy (Cognitive Domain) Applied to Personnel
    Preparation in Learning Disabilities.   LTI Final
    Report.   Department of Special Education, Uni-
    versity of Arizona, 1973, 423-431.

McCleary, L. E., Brown, P. C., Gale.   Assessing Com-
    petency Needs in Administration.   University of
    Utah, 1973.

McCleary, L. E., McIntyre, K. E.   Competency develop-
    ment and university methodology.   NASSP Bulletin,
    March, 1972, 53-59.

McCleary, L. E., & Pol, G.   Quadrant assessment model
    (QAM) for the assessment of competencies.   CCBC
    Notebook--The Competency Based Curriculum,
  ' University of Utah, 1973, 3, 4-6.

Meyen, E. L., & Altman, R.   Individualizing instruction
    for pre-service teachers:   An applicable competency-
    based training model.   Focus on Exceptional Chil-
    dren, 1973, 5, 1-12.

Mitzel, H. E.   CARE Trains Teachers While They're on
    the Job.   Computer-Assisted Renewal Education.
    Penn State University, 1973.

1973 Administrative Competencies Seminar. Arizona State
    University, Tempe, Arizona, 1973.

Shearron, G. F., & Johnson, C. E. A prototype for a
    competency-based proficiency module. GEM Bulletin,
    Athens, University of Georgia, College of Educa-
    tion, 1969.

APPENDIX H

The RMRRC Stratistician Project

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INTRODUCTION

The stratistician project was carried out by the Rocky Mountain
Regional Resource Center (RMRRC), one of six Regional Resource
Centers funded by the Bureau of Education for the Handicapped
(BEH) prior to June 1974.  The stratistician effort was original-
ly conceived as a five-year process.  The first year was dedi-
cated to assessing the service needs in Utah and to planning.
The second and third years were a pilot phase of development to
gather information and try out a service pattern.  The fourth
year was to develop and to expand the model and gather further
data.  The final year was to be for evaluation and recommenda-
tions.  In June, 1974, BEH expanded the number of RRCs across
the country and changed the geographic regions and the focus
of the existing RRCs.  It was not possible to complete the
final evaluation phase because of these changes.  The work done
in the first four years, however, was valuable and is reported
in this paper.

YEAR ONE

The stratistician concept evolved as a result of planning meet-
ings with RRC staff attended by special educators from the Utah
State Board of Education (USBE), from local school districts and
from the University of Utah.  The purpose of these meetings was
to determine how the RMRRC could be most effective in helping the
state meet needs in delivering educational services to handicap-
ped children and youth in the State of Utah.  These discussions
seemed to indicate that:

1.   The state of Utah was serving approximately 60 per-
     cent of the expected handicapped population of the
     state.
2.   Most of the moderately, severely and profoundly handi-
     capped children were identified and in some type of
     program.
3.   The approximate 40 percent of students not being served
     would probably be found in the school system, in
     regular education classrooms; they were not necessarily
     identified or receiving services.

Solutions were sought for problems related to that portion of
the expected handicapped population in regular classrooms who
were not receiving services.  A decision was made to place
several individuals in the school system to gather information
on the needs of this population.  The following were basic
ideas relating to these placements:

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1. The project would focus primarily on children in elementary schools.
2. The person placed in the school would need to be able to function in a way uniquely different from traditional roles. The name "stratistician" was coined by combining 'strategist" and "diagnostician." It was anticipated that the title would not give cues that would relate to the functions of a psychologist, social worker, nurse, special educator (such as a resource teacher or teacher in a self-contained class), district curriculum specialist, administrator, or counselor.
3. In order to gain information on the kinds of problems the elementary school teacher experienced with difficult students (who were believed to mainly be the unserved handicapped students), the stratistician would respond to any type of problem referred.
4. Instead of focusing efforts directly on the referred child, the stratistician's major focus would be on the teacher referring the child. This attempt to increase the skills of the referring teacher was based on the following ideas.

   a. Unless completely removed from the teacher's class, the child will spend most of his school day in that class.
   b. Most regular classroom teachers have many skills they do not use. In many cases it is not a matter of teaching new skills, but of eliciting skills already there.
   c. Possibly there would be other students in the classroom with the same problem as the referred student. Improving the teacher's skills would help provide better service to more children than the one referred.
   d. Skills learned in working with exceptional children would be useful with all students in the classroom.
   e. Not only would the current class benefit, but the teacher's future classes should also benefit.

5. The stratistician could facilitate the coordination of all available resources on behalf of the child. This would include resources in the school (principal, other teachers, other special educators, if available), resources in the school district (psychologists, social workers, nurses, counselors, curriculum specialists, speech therapists, vocational rehabilitationists, community groups), resources in intermediate or multi-district centers where available, and resources from state, regional and federal programs.

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During this planning phase, contacts were made with districts to discuss placing a stratistician in schools within their jurisdiction. Three districts and one multidistrict service agency with different resource support systems were selected by mutual agreement of the districts involved, the USBE and the RMRRC.

Because of the unique nature of the proposed role, and the difficulty in predicting the possible problems a person in this role would encounter, the utmost care was taken to select the people to pilot the role. Those selected:

1. were able to work with a wide variety of educational problems because of their knowledge of the diagnostic-prescriptive process;
2. seemed to reflect personal qualities of openness, to be nonjudgmental, to have a high tolerance for ambiguity, to possess a problem-solving approach, and a high degree of acceptance of self and others;
3. had prior experience in the school system including teaching experience;
4. had special education or educational psychology background with a master's degree;
5. were recommended for the position by district, state and/or university personnel.

Prior to the start of the school year the six selected persons participated in a structured sharing of past experiences and knowledge gained from those experiences that might be of value to the future r   as a stratistician. This experience seemed to be helpful in two ways. First, the persons selected were skilled people from a wide variety of backgrounds and had the ability to communicate useful information; second, each person became known to his peers as a highly capable person who could be a valuable resource in the future.

YEAR TWO

The six stratisticians were placed in f.   elementary schools in three districts and one multidistrict service center. The five schools provided a variety of settings from a suburban school to a school on an isolated military base, from those in districts with a lot of support services to those with few support services, from one with a roughly middle-class population to one with a high percentage of underprivileged children, and from those with other special education services in the building to those where the stratistician would be the only special

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educator available. The stratistician placed in the multi-district service center was to serve 52 schools in six rural, sparsely populated counties. Salaries were negotiated; in some cases the RMRRC payed only for the summer months (since stratisticians were on a twelve-month contract) and in other cases the RMRRC payed the total salary.

The stratistician's instructions were simple. They were to:

1. respond to any type of referral that came from teachers having problems thus providing a service to the school; and

2. record data on all aspects of their role. The data to be gathered included:
   a. the type of problems being referred;
   b. the types of students in regular clasrooms who were being referred;
   c. the strategies tried that word and did not work with the students;
   d. the process of how referrals were made;
   e. the content of the referral;
   f. how teachers reacted to the role and used or did not use the stratistician;
   g. how they worked with principals teachers, parents, and district personnel.

The stratisticians were to be in the schools four days a week and on the fifth day would meet with other RMRRC personnel to share ideas, receive additional help from each other and from other RMRRC staff, deposit data collected and get further instructions on data needed. The stratisticians were not expected to have all the answers to the potential problems that were referred. The rest of the RMRRC staff (the director, the assistant director, the evaluation coordinator, the psychologist, the instructional media specialist, and the research assistants) was available as a first-line support of the stratistician. The faculty members of the Department of Special Education, University of Utah, were also available for help in their area of expertise.

At the end of the school year, response from the school principals and school districts was enthusiastic. Over ninety percent of the teachers in the five schools where stratisticians were placed full-time had received service from the stratistician, interacting on a one-to-one basis, in small groups or as total faculty groups. The nonstereotyped role allowed the stratistician to move freely across many roles and draw together resources that in the past had been fragmented and operating in isolation. By focusing on helping the referring teacher to work with the referred student, a larger number of students received services

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than would have been possible through traditional self-contained or resource room models. The stratisticians were working with all areas of exceptionality found in the school; however, they worked from a learning-problem stance as opposed to a categorical stance.

During the summer the stratisticians were asked to identify the basic skills they felt were necessary to fill the role. The skills identified could be loosely grouped into the following categories:

1. The ability to diagnose or assess children's problems, not only with formal measures but especially with informal methods;
2. The ability to translate the diagnostic information into educationally related objectives;
3. A good working knowledge of curriculum materials available for general problem areas plus the ability to adjust program materials to meet specific needs;
4. The ability to evaluate the appropriateness of an educational program they suggested and to make the proper changes when necessary--plus the ability to evaluate longer range pupil achievement;
5. The ability to interact with a wide range of people in a wide range of situations displaying interaction skills in sending and receiving communication, problem-solving and gaining acceptance in a school.

Despite the enthusiasm generated, problems did arise in this first year. The initial concept of placing a person in the school to gather data and provide some services was transformed; the emphasis shifted to a person who was highly successful in providing much needed service, and who also collected data. The stratisticians became torn between service to the RMRRC or to the school and district where they were placed. This became apparent not only in the motivation to collect data, but also in identifying with the RMRRC one day per week when a part of the school and faculty four days per week.

Another problem occurred in trying to measure the effectiveness of the stratistician placed in the multidistrict service unit in relation to the originally conceived ideas. There is little doubt that the service rendered was of value and indeed much needed in such areas. However, a person in this role could not be compared to the five placed in single schools.

YEAR THREE

More specific information was needed on what was apparently successful during the first pilot year. Two new stratisticians

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were added to the initial six, one in a school with a heavy
minority population and the other in a rural school district
with the stratistician serving two elementary schools approxi-
mately forty miles apart.  These two placements were to add
additional data on the types of problems and problem resolution
strategies in specific populations and provide information on
the skills a stratistician would need to work in these environ-
ments.

Three of the initial six  remained in their respective positions.
So a total of five new stratisticians were hired; three to fill
the other three positions from the initial year plus two new
ones.  These people were selected with the same criteria used
in selecting the first six stratisticians.  The experience of
the previous year did enable the interviewer to give prospec-
tive stratisticians a better perspective on what the job en-
tailed; the interviewer could also structure the interview to
relate to the real problems which the stratistician would face.
To help coordinate the efforts of the eight stratisticians for
this phase, a field service coordinator position was created.
The person in this position--a former stratistician--was to
also coordinate presentations and workshops requested of the
RMRRC.

The stratisticians' summer activities in preparation for the
coming school year included orientation to the Regional Resource
Center concept, a week-long workshop on Self Enhancing Education,
simulations of potential experiences, and an intensive two weeks
of creative work on developing a behavioral observation system.
This system grew out of an expressed need of the stratisticians
to gather more than frequency counts and limited interaction
data.  It expanded on observation system attempts by some of
the stratisticians and eventually became known as the Systematic
Observation of Behavior (SOB).  (The SOB is discussed at length
in Chapter One.)

In addition to providing an opportunity. to examine in closer
detail the original stratistician concept, the expanded staff
provided an opportunity to explore services in more depth.
Three of the eight schools had the same stratistician as the
year before; two other placements plus the one in the multi-
district service unit had the same position, but a new person
filled that position.

There was also the new position of field service coordinator
filled by one of the first-year stratisticians.  This role was
to provide coordination to the efforts of the eight stratisti-
cians, advise and arrange training for the new stratisticians,
receive requests and arrange for presentations and workshops,

and conduct the Friday meetings at the RMRRC, which were reduced
from one day per week to one day every other week. In addition,
the field service coordinator was the liaison between the RMRRC,
and the district administrators and principals involved in the
project. The coordinator also organized and conducted the quart-
erly Participating Districts Advisory Committee (PDAC) meetings.
(The PDAC membership included principals and district adminis-
trators from the stratistician's district, a USBE representative,
Department of Special Education members and involved RMRRC staff
members.)

The developmental year met with essentially the same success as
the initial year. Preli  ary data seemed to indicate that at
any given time the strat  cicians could actively work with
teachers for a minimum of sixty referred students. Through the
direct help to the referring teacher, the teacher was able to
supervise the special programs for the students enabling them
to remain in the classroom, sometimes with the help of a tutor.
Again, over ninety percent of the teachers in the eight schools
involved benefited from direct service by the stratistician. In
addition, other teachers in the cooperating districts (as well
as in other districts throughout the state) benefited from work-
shops presented by the stratisticians. The stratisticians were
also involved in presentations to university students in special
education. The preliminary data also reinfo    d the information
gathered during the previous year that there  ere handicapped
students in the regular classrooms who previously were not
receiving special education services.

As successful as the year was, there were still some concerns.
The stratisticians still felt the pull between being part of
the RMRRC with its data gathering needs and being part of the
assigned school's faculty with its service needs. In place-
ment of the one person who served two schools, service could
have been more effective if someone in each school had been
officially designated as a follow-up person when the stratis-
tician was not there. It would also have been helpful if the
persons involved in the two schools and in the district had
been in agreement on how the person's time was to be used in
both schools. For such placements in the future, it is recom-
mended that service be based on needs, allowing some flexi-
bility rather than a fixed schedule. The placement of the
person in the multidistrict service unit again provided service
to the recipient schools but the work covered too many schools,
teachers and children to really provide a basis for comparison
to the other stratisticians.

The success of the stratisticians raised the question of whether
or not success was due to the concept of the stratistician
service model or because the stratist  ians were such highly
skilled special educators. Before the year was over, plans

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were underway to evaluate a generalized form of the model.

YEAR FOUR

The experimental phase was characterized by attempting to im-
plement the stratistician concept in a wider variety of school
settings with special educators selected by districts involved.
The following strategies were utilized:

1.  Through a cooperative effort with the Utah State Board
    of Education, most of the 40 school districts in Utah
    were invited to indicate their interest in the stratis-
    tician service model.
2.  The districts would select the school or schools and
    the persons who would fill the stratistician role.
3.  The persons selected by the districts to function as
    stratisticians would be totally on district payroll
    and would not be considered RMRRC staff.
4.  The persons selected by the districts would be out
    of their schools to meet with the RMRRC only once a
    month.
5.  The districts agreed to participate in an extensive
    data collection effort handled primarily by the RMRRC
    staff, but of necessity requiring time and effort from
    the district personnel.  Data collection revolved
    around the evaluation of the impact of the model on
    children, teachers and administrators.  Child data
    consisted of measures of academic achie  ment and
    social emotional growth.  Teacher data  attempted to
    measure classroom climate and attitude.  Finally, the
    administrator data reflected the perspectives, atti-
    tudes and training of superintendents, directors of
    special education and the principals from the partici-
    pating districts and schools.

To help facilitate the district-selected personnel who would
function in the role of a stratistician, the RMRRC was to:

1.  Identify the skills and competencies necessary to func-
    tion as a stratistician and develop a program to train
    for those competencies;
2.  Cover all expenses of the training program including
    reimbursement for mileage to and from the RMRRC, per
    diem for those who had to stay overnight, a stipend
    for each of the participants, and cover all expenses
    on data collection and scoring;
3.  Leave copies of data collected with the district and
    schools;
4.  Provide monthly sessions to follow-up on early training
    or provide experiences to broaden trainees' experiences;
5.  Provide back-up support in the school at least twice a
    month for each school from a member of the RMRRC staff;

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6. Provide orientation sessions for district administrators, principals and faculties of the cooperating schools to define the intent and scope of the project prior to the beginning of the school year.

Of the more than 30 districts invited to participate, 21 asked to be considered. These districts were contacted by the RMRRC, given a brief history of the development of the stratistician concept and an overview of what the project would entail for the coming year. The 11 districts that finally participated in this experimental phase were those that:

1. Indicated a strong interest in wanting to be involved;
2. Were willing to become involved in the heavy evaluation requirements of the project;
3. Were willing to release the person or persons selected from their district once a month to attend follow-up sessions at the RMRRC;
4. Had selected a person to participate who was available for the training session scheduled before the start of the school year.

Also, during this time, efforts were being made to identify competencies needed by the stratistician and the training methods to be used in training for these competencies. The primary source for identifying competencies was information supplied by the stratisticians. These competencies reflected the actual activities the stratisticians had performed in the two years. A secondary source of information came from three major school districts on the kinds of skills they would like their special educators to have. Further information was gathered through a joint effort between the USBE and the RMRRC; a large group of educators from across the state were asked to identify the kinds of problems students present to special educators. The accumulated information was then cross-checked against a wide range of national special education competency-based training programs to insure that nothing had been overlooked. The skills thus identified gestalted into the content areas of identification, diagnosis, prescription, programming, evaluation and interpersonal skills.

In examining various structures for training programs, RMRRC staff members felt that training should cover processes on various levels to meet the identified needs. The process levels identified were knowledge, understanding, application, analysis, synthesis, and evaluation (from Bloom's Taxonomy of Educational Objectives). The content areas and the process levels were placed on a matrix (Figure 1), and training modules were written to address each identified competency at the specified process level. Twenty-four modules were written for use in training the district selected personnel. (See Appendix G for more detailed information on the training program.)

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Content

| PROCESS | IDENITY | DIAGNOSE | PRESCRIBE | PROGRAM | EVALUATE | INTER SKILLS |
|---|---|---|---|---|---|---|
| KNOWLEDGE (recall) | | | | | | a b c d |
| COMPREHENSION (understanding) | 1 2 | 7 8 | | 19 | | |
| APPLICATION (use) | 3 4 | 9 10 | | 20 | | |
| ANALYSIS (clarify) | 5 | 11 12 13 | ·16 | | | |
| SYNTHESIS (regestalt) | | | 17 | 21 | 23 | |
| EVALUATION (judgment) | 6 | 14 15 | 18 | 22 | 24 | |

Figure 1

Placement of Learning Modules by Number on the Content-Process Grid

The development of the training modules and the structuring of
the training sessions were patterned to overcome several con-
straints:

1. The representatives from the districts might have
   certification in any one of several areas: Mental
   Retardation, Behavioral Disorders (Emotionally Dis-
   turbed), Learning Disabilities or Speech and Hearing.
   This meant the training program would have to be
   broad/enough to encompass those with various training
   backgrounds.
2. Participants with the same certification might have
   received their training from different institutions
   with completely different philosophies or approaches.
3. Participants could have a wide variety of work ex-
   perience in the schools, from no experience to
   many years of experience.
4. Because participants were coming from different dis-
   tricts in the state, school starting times could
   vary from August 23 to September 7. This meant that
   scheduling of the training session would be difficult.

To overcome these obstacles, material was developed so it could
be used individually or in small groups. A pre-assessment
device was developed to help participants decide if they needed
additional help in achieving a particular competency level
The training sessions were structured for a total of ten days,
with participants selecting one of six different starting dates.

The individuals selected by the districts to participate with
the RMRRC in this program were called stratistician/generalists
by the RMRRC. From the 11 school districts, 17 stratistician/
generalists were involved in the year-long program with the
RMRRC. Three intermediate stratisticians at the RMRRC provided
back-up support to the stratistician/generalists during the
school year. The intermediates' role was to take primary respons-
ibility for the training of five or six stratistician/generalists
during the training period and then to meet with those same
people at least twice a month in their schools during the school
year. The intermediate stratisticians had had at least one
year's experience as a stratistician. The stratisticians from
the first and second years wrote and presented the training
program, which was set up for a three-week period in August.

With 17 different people from 11 different districts being
trained, a wide range of possibilities for adapting the stratis-
tician concept to the real world emerged. During the initial
and developmental phases, the stratisticians had been able to
maintain a basic focus on working with the teachers rather than
students. This/occurred despite wide variations in the support
services available in the schools. However, because of a change
in Utah's state school finance formula involving services to
students in special education programs, after the initiation of

of the project, it was difficult for the stratistician/general-
ists to work strictly with teachers. The basic concept, of neces-
sity, was adapted in different ways to fit the varying needs of
the particular schools and districts during this experimental
year. In some areas, the stratistician/generalist was the only
special educator available to provide for the educational needs
of those students who needed a self-contained classroom. In
such cases, the stratistician/generalist functioned part of the
time as the teacher in the self-contained classroom, and part
of the time working with the other teachers in the school. In
other situations, particularly in small rural districts, the
stratistician/generalist was the only special educator in the
district and so served in both the elementary and the secondary
special education programs.

The role of the intermediate stratistician presented another
variation worth examination. As mentioned above, the inter-
mediate stratisticians were former stratisticians who were
involved in developing training material; they were then assigned
to train six stratistician/generalists and then visit the new
recruits in their schools at least twice monthly. The problem
usually associated with itinerant models--no follow-up after
the itinerant leaves--was not a problem because the stratistician/
generalists were in the schools daily. The other problem associ-
ated with itinerant models--the difficulty of being effective
in the short period of time during a visit--was lessened because
the intermediate stratistician had already built a relationship
with the stratistician/generalist during the initial training
period and could thus respond more immediately and appropriately
to the needs of the stratistician/generalist.

The scheduled monthly meetings also enabled the intermediate
stratistician in being successful in an itinerant role. Perhaps,
the greatest single benefit from those meetings came from inter-
actions between the stratistician/generalists, and the opportun-
ity to share experiences with peers.

STRATISTICIAN QUO VADIS?

The RMRRC's original intention was to complete evaluation, sum-
marize and polish the stratistician model in the fifth year. This
would have included an in-depth study of the efforts thus far;
revision of the competency statements based on the fourth year's
efforts; improvement of the training program for use by trainers
of special educators; and development of recommendations to SEA
and LEA directors of special education on the potential uses of
the stratistician model. However, with the redefinition of re-
gions by BEH, planning changes had to be made. The RMRRC receiv-
ed an extension of the original grant to edit the material used
by the intermediate stratisticians and have it duplicated. Time

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restrictions did not permit the development and polish originally intended; however, the RMRRC also received permission to analyze the data collected during the final year.

Although the model was not completed to the desired extent, ideas that came from the stratistician project are in practice in some districts across the state. Dialogue also continues with the USBE on future implications for the stratistician concept in the state. Certainly the stratistician model provides a viable alternative for serving handicapped children in regular classrooms who are too often unserved.

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APPENDIX I

Reading the Environment to Gain Acceptance

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READING THE ENVIRONMENT

If you are to begin working in a new situation where your effect-
iveness depends on your acceptance, then the more information
you have about that situation, the more likely your chances for
success.   Reading the environment means becoming keenly aware of
the basic organization and structure, i.e., where things are,
how and when they are used, and who the people are.   The accep-
tance techniques presented here should be useful to anyone enter-
ing a new working situation.   These techniques are, however,
specifically aimed at the adult who will work primarily with
other adults in a school.   While all teachers desire peer accept-
ance, it is imperative that the support person who works with the
other adults in a school be accepted in that environment.

Basic Structure and Organization:   When you enter a new school
you are usually shown around the building.   As the principal or
another guide takes you around, you will probably be interested
in two things:   first, the location of your room or office space,
and second, the sites of a few key locations, such as the office,
media center, faculty lounge, rest room, and cafeteria.   As the
school year progresses you will get to know where everything is
located.   However, if your goal is to maximize the possibilities
of being accepted by the people in the school, you need a good
understanding of the physical layout, the personnel and schedul-
ing.   The following are suggested to speed up the process of
getting to know the school:

1.   Upon your first introduction to the school, draw a
     map of the building's physical layout.   (Some schools
     have floor plans available.)   Make sure the map in-
     cludes the total building plus parking areas and play-
     grounds.   If students are bussed to the school, indi-
     cate where buses are loaded and unloaded.

2.   On your map, write the names and locations of all
     school personnel.   This not only includes the teachers
     in their classrooms but the principal, secretary,
     custodian, lunchroom workers, school bus drivers, play-
     ground supervisors, paraprofessionals, nurse, social
     worker, psychologist and other district support per-
     sonnel who, when in the building, usually work in a
     particular space.   That space allotted to each person
     is as important to them as   space is to you.   In-
     formation on who the people are and where they are
     located may be obtained from the  school secretary or
     the principal, if he has time.   More often than not,
     when the principal sees your map with names and loca-
     tions specified, he will want a copy for himself.   (It
     is also possible that he will request copies for all
     personnel.)

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3. The map should also include those areas that may not be assigned to a person, but nonetheless, are important to a school's functioninc, such as the multipurpose room, book storage room, pply room, boiler room, janitorial supply room, restrooms, faculty lounge, projection rooms, and in some cases empty rooms. You may also want to note where items are located that are important to your functioning, such as student files.

4. The space around the building is also important. As suggested earlier, parking areas, places where school buses are loaded and unloaded and areas used as playgrounds should be designated. Playground equipment and types of facilities should be noted.

5. Once you collect information on the physical layout, the next step is to gain information on its use; this information usually falls into two categories, regulations and scheduling. Most schools will have a written set of regulations which outlines the use of almost all facilities, and might include the responsibilities of the personnel who use them. If not in formal written form, there are probably informal regulations. You will want to know the schedules that are fixed, such as starting and ending time of school, lunch and recess times, and how areas without set schedules can be reserved, such as the multipurpose room, the media center, projection rooms and playground areas. Other schedules you will want to know about include lunchroom duty, hall duty, playground duty, bus duty, etc.

6. Another type of useful information is the boundaries of the school, the general boundaries of the school district and where this particular school fits within the general systems, i.e., which elementary schools lead to which junior high schools, and in turn, which junior high schools lead to which high schools.

All of the above information can be gathered easily in a short time and should be in your possession prior to the beginning of school. It is particularly useful if you are new to the school. If you have been in the school for some time, it is recommended that you sit down with paper and pencil and check your information to see if you can cover all of the areas mentioned above.

The Humans in the Environment: Although the information described above is straightforward, reading the humans in the environment is very complex. The personnel in the school can be approached in three groups: the principal and teachers form one group; other personnel in the school (such as the secretary, lunchroom workers, custodian, paraprofessionals, bus drivers, volunteer workers) could form a second group; and those who do not spend all of their time in the school but perform import nt

services there (such as psychologists, social workers, nurses, speech therapists, curriculum specialists), could form a third group.

Since the teachers and principal comprise the largest grouping and are probably the most critical in terms of your acceptance in the school, any information you can gather for your eventual interaction with them will be helpful. Reading the environment as it relates to this group calls for attending to all available cues and organizing that information in a useful way. The following suggestions should provide you with at least a start:

1. Recognize and record interests and interactions the various faculty members have in common. For example, all of the first-grade teachers in a school have teaching first-grade in common and will interact with each other not only on topics related to teaching first grade but on other topics as well. Also, your map of the school will indicate how the building's architecture might isolate staff into pockets or clusters. The people within those clusters will interact more with each other than they will with others in the school simply because they have more access to one another. Other types of interests or interactions to watch for include:

   a. People who share car pools;
   b. Those new to the school;
   c. Those who graduated from the same university;
   d. Those who live in the same geographical area;
   e. Those who belong to the same organizations;
   f. Those who have similar hobbies and interests;
   g. Those who have worked together in other schools;
   h. Those working together on various committees;
   i. Age, sex, marital status and/or ethnic factors which may give people a common group for interacting;
   j. Those on diets;
   k. First year teachers;
   l. Those who drive the same make of small car.

The list, of course, could go on but the basic idea is to note who is interacting with whom, what the basis might be for that interaction and who else in the school might share that common basis. Being alert to the cues that give information on what people have in common is a good beginning but it is also helpful to have a method of recording or organizing such information.

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2.  Compile the above information and arrange it in a use-
    ful format.  One suggested way will give you a quick
    visual image:

    a.  On a paper, draw a series of circles approximately
        1/4 to 1/8 inch in diameter, as in the following
        diagram.  There should be one circle for each mem-
        ber of the faculty including the principal, your-
        self and other key people in the school.
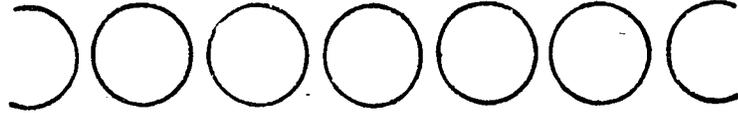


    b.  Use one circle to identify each person by writing
        their name or initials in the circle.  It is
        suggested that you group people according to grade
        levels, beginning with the kindergarten teachers,
        then first-grade teachers and so on.
    c.  Draw lines to connect people who have common
        interests; label the lines with the commonality.
        These lines present a visual image of already
        established informal lines of communication.
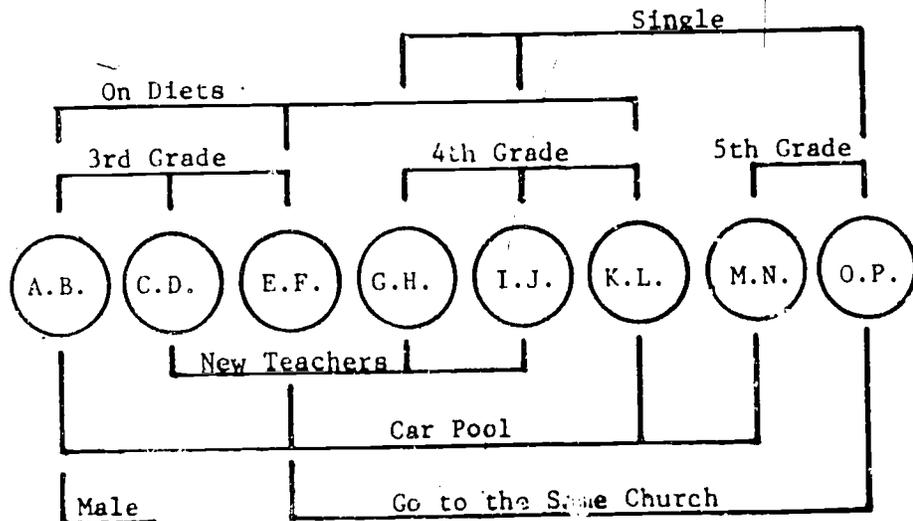


    This diagram depicts only a portion of the infor-
    mation to be collected.  To be complete it would
    include all teachers in the school as well as your-
    self.  It would also have more lines representing
    more interests people have in common.  The infor-
    mation used to chart commonalities comes from many
    sources.  Begin collecting information when you meet
    the teachers at the first faculty meeting, and be
    attentive to conversations of faculty members in the
    lounge or lunch rooms.

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3.   Another suggestion is to gather information about the
     potential recipients of your service that will help you
     establish contact and communication.  A suggested way
     for doing this would include the following steps:

     a.   Divide a paper into three columns.
     b.   In the first column, list the names of all the
          teachers and other key personnel.  A concentrated
          effort should be made to know everyone by name
          within the first two or three days of school.
     c.   In the second column, list by each person's name
          what you have in common with that person.  Some of
          this information can be taken from the first chart
          you have completed.  You will notice, however, that
          you will have blank spaces by some names.  In those
          cases you will want to be especially alert in
          faculty meetings, the lunchroom and faculty lounge
          for potential clues.
     d.   In the last column list by each name the "strengths"
          of that person.  These are the positive abilities
          that you have observed about the person relating
          to his job.  This column is only for positive com-
          ments and you should not stop until you have listed
          something positive about everyone on the list.

The above suggestions for reading the humans in the environment
are not only to give you a "reading" on the people you are to be
working with, but, also, to place yourself within that environ-
ment.  It will also be useful when working interactions begin
with the teachers.  Both the above chart and lists can be
roughed out during a faculty meeting when everyone is present
and you want to check out how much you know about the people
there.  The diagrams are not intended to be time-consuming,
detailed reports but quick checklists containing simple notes.

Although the suggestions have been focused on the faculty members
of the school, the same activities apply to anyone else who is
in the school full-time or part-time.  School secretaries and
custodians are an integral part of the school functioning and
the human environment.  You should also know by name everyone
who comes into the school on a regular basis and know what their
function is within the school.  Again itemize what you have in
common with them as well as relationships and interaction pat-
terns they have already established with others in the school.
You will want to note how their role in the school relates to
your role.

Formal and Informal Power Structures:  Within the school environ-
ment there will be a formal power structure that is fairly easy
to note and record.  There will probably also be an informal
structure that is sometimes more difficult to pinpoint;

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nevertheless, if you are to accomplish your goals it will be important to recognize this informal power structure. The formal structure consists of the building principal, who is the ultimate authority in the school, his assistants, committee chairpersons appointed by the principal for specific functions, and district administrators with authority over particular functions of the school. Usually, those with formal authority have power over the informal power structure if and when they choose to exercise it. An informal power structure, however, is usually in a position to influence the decisions made formally, thus protecting and perpetuating the informal system.

Identifying the informal power structure usually begins by noting how decisions are made, who influences those decisions, and how people react to them. The most obvious place to watch for this is in a faculty meeting. When issues are being discussed, note who tends to dominate the group. This domination can result from the person's brilliance and logic, volume and frequency of responding, or by silence or withdrawal during a discussion, which is noticed by other members of the group. Often this dominance is acquired because of apathy from other group members. Most decisions in a group are made by a few vocal participants with acquiescence of the other members. Even if there is more group involvement in the discussions, support will tend to polarize around a few people. In a very short time, consistent patterns will emerge and the alert observer will begin to perceive the informal power structure.

Very seldom does a principal make all decisions without advice, but decisions may be handed down without group discussion or use of the democratic process. In these cases, the informal power structure is probably operating in a one-to-one relationship with the principal. Note who seems to "have the ear" of the principal, who the principal spends the most time with, who the principal interacts with in a more friendly, personal way, and whose opinions, ideas or needs seem to most closely parallel the decisions that are made.

Any power structure is only as powerful as those whom it presumes to control will allow. By joining the school system you have given over some control of your life to the formal structure of the district and to the building principal, who will decide the days you will work, the hours you will work, when you can eat lunch, what space you may occupy in the school and the kinds of activities you may perform within that space and time. Informal power structures exist because people are willing to relinquish some of their power to other people who are willing to take it. One way to give up control is to avoid involvement; anytime a person is not interested in a decision, it will be made by those who are interested.

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As discussed earlier, most decisions in faculty meetings are made by a few people and the rest of the group goes along.  In one school, the decision as to what creative art activities the students would be offered was not set by district policy, nor by the creative needs of the students, nor by the creative skills of the faculty, nor even by the amount of money in the budget; the activities were dictated by the building custodian who did not want to have his job complicated.  In another school, library books could not be checked out of the media center because the person in charge did not want to track down overdue books nor account for lost and damaged books.  In both cases, the decisions were not based on the educational needs of students, yet everyone accepted the decisions.  These decisions were disliked by some or by all, but they were not challenged and therefore they gained legitimacy.  In both cases, the formal power structure could have overturned the decision, but did not.  This is probably also because no one challenged them.  These examples are just two of many which attest to the fact that an informal power structure does exist in the schools and your ability to recognize it is a critical part of reading your environment.

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BASIC STANCES ABOUT YOUR ROLE

One of the basic principles in gaining acceptance by others in the school is to BE A PERSON HARD NOT TO LIKE.  Everything you say and do in the school should begin from this base.  Before you even enter the school you must articulate some basic stances about your role and how you are going to approach and/or react to situations relating to that role.  What you personally have to offer, how you present your role, how you intend to fit into the power structure, and your manner of interacting with others are basic stances about your role that you will want to think through ahead of time.

Begin Working From Where You Are:  As requests for your help are received, you will have to respond from your own repertoire of skills.  If you have a realistic appraisal of your abilities, you can respond immediately to requests with which you can succeed.  This should not suggest that these are the only requests you will respond to.  It does suggest that you will know the things you can do well and the things for which you will need outside help.  You should not expect to be able to do everything.  At the same time you should be willing to risk, to try, to learn new skills without being afraid of failure.

Avoid a "Power-Hat" Role:  It is very difficult to really be accepted as a helping person if you are perceived as one who can threaten another's job security.  Even when your role in actuality has nothing to do with anyone's job status, if others

perceive you in that light, it has an effect on your relationship. The following suggestions may help avoid the problem:

1. Be a peer faculty member in every sense of the word. Get involved in everything that other faculty members do. Volunteer to serve on committees; sign up for hall duty, bus duty, playground duty, and lunchroom duty; attend faculty meetings, faculty parties, after-school functions and PTA meetings. Do not use your role to avoid anything other faculty members do, especially not those things they dislike doing.

2. Avoid the administrative stereotype. Because your role differs from that of classroom teachers and because you are generally working with the whole school, it is easy to get trapped into a semi-administrative-type role. The principal may see you as very useful and give you some duties that could place you in such a role. Be aware of this possibility and try to approach such assignments from the principal as any other teacher would and convey that image to the faculty.

3. Do not "spy" for the principal. You will be in a position to hear and see many things that are happening in the school. You should have a clear understanding with the principal from the beginning that you do not intend to evaluate teachers or provide information specifically for that purpose. If you begin that practice, word will rapidly spread through the faculty and your acceptance and effectiveness will be reduced.

4. Avoid making judgments about a teacher's professional ability. Whether asked by the principal, another teacher, the secretary, the custodian, a parent or a person from the district office, the only information you should share are the positive abilities you have noted about the teacher. One negative comment from you will spread via already established communication networks, such as car pools, those in the same wing of the building, those who eat lunch together, etc. The positive comments will not travel as fast but they will certainly not undermine what you are trying to do in the school.

5. At the same time you are making an effort to be a peer faculty member, you want to avoid the faculty lounge or lunchroom game of stating negative opinions on: education as a profession; the school in which you are working; administrative and district personnel; students in the school; parents; and other teachers. It is also suggested that you try to counteract negative trends by pointing out the positive or directing the conversation to address problems in terms of needs and not personalities. Otherwise it is possible that your silence could be interpreted as agreement.

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<u>Your Role Will Define ltself Through Your Actions</u>:  It is help-
ful to have someone introduce you to the faculty and state your
role or for you to tell them what your role is; but it is what
the teachers hear and see you do and particularly what you do
for them that creates in their minds the image of your role.
This requires constant one-to-one interactions wi'' individuals
to answer questions and to redefine the role.  You innot do
this adequately unless you have thought through the broad versus
the narrow perceptions of what your role might entail.  Yet you
need to be flexible enough to be able to expand your role to
meet teachers' needs.  These needs may require you to be a facili-
tator, a coordinator, an inservice trainer or a resource for
teachers.  Your actions will also communicate to teachers that:

1.  You are offering service to handicapped children;
2.  You are focusing on helping the teacher work witn the
    children;
3.  You are more than an "IQ tester;"
4.  You are willing to risk and can accept failure in your-
    self and allow for it in others;
5.  You are open, nonjudgmental, and willing to hear
    concerns.

The person who can provide immediate, on-site help to the class-
room teacher of handicapped children, can become a dynamic
element in expanding services to all handicapped children.  If
you are to fill this role, reading the environment and under-
standing your part in that environment should lead to your
acceptance in the school.  While our interactions with the
faculty will need some ongoing attention, your energies can be
directed to your main task which will be facilitated in an
accepting environment--that of helping the classroom teacher
expand and enhance services to handicapped children

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