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ABSTRACT

The teacher's role in documenting behavioral programs on individual education plan objectives for behaviorally disordered (BD) students is discussed, and assessment instruments are presented and reviewed. Student behavioral monitoring is examined using pre/post testing with standardized instruments, product measures that indicate progress or outcomes, and student materials and process records from student files. After discussing behavior rating scales, self-rating instruments, and sociometric devices (i.e., standardized pre/post measures), the following examples are presented, along with general descriptions, score interpretations, authors, source, and data: Devereux Elementary School Behavior Rating Scale, Behavior Rating Profile, Piers-Harris Children's Self-Concept Scale, Nowicki-Strickland Locus of Control Scale for Children, Behavior Rating Profile Sociogram, The Class Pictures, A Class Play, and Student Survey. Examples and information are also presented on criterion referenced procedures, analogue (simulation) observations, and archival records (i.e., product measurement procedures). Specific instruments are: VORT Behavioral Characteristics Progression (suggested as a reasonable solution to the problems of sequencing, providing standards and documenting change) and Goal Attainment Scaling. Graphing of class attendance data and the use of a behavior card file are illustrated. Finally, the following examples are presented to illustrate process measurements based on point systems: frequency counts, token economy system data (students receive tokens to be cashed in for privileges), self-monitoring procedures, Walker Classroom Observation System, and Madsen and Madsen Code with Walter Alternating Peer System. Six steps for making systematic classroom observations are also identified. (SEW)

MONOGRAPH SERIES in BEHAVIOR DISORDERS

Monograph 6:

Practical Approaches for Documenting Behavioral Progress ...

Midwest Regional Resource Center
Drake University
Des Moines, Iowa

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May, 1982

Monograph 6:

Practical Approaches for Documenting Behavioral Progress of Behaviorally Disordered Students

Gail E. Fitzgerald

Disseminated by

Midwest Regional Resource Center
Drake University
Des Moines, Iowa

March, 1982

This monograph is designed to provide teachers and administrators with information on behaviorally disordered students. It is one of a series of seven. The other monographs in the series are:

1. Myths of Behavioral Disorders
2. Developing a School Program for Behaviorally Disordered Students
3. Establishing a Program for Behaviorally Disordered Students: Alternatives to Consider, Components to Include and Strategies for Building Support
4. Reintegrating Behaviorally Disordered Students Into General Education Classrooms
5. Positive Approaches to Behavior Management
6. Practical Approaches for Documenting Behavioral Progress of Behaviorally Disordered Students
7. Excerpts from: Disciplinary Exclusion of Seriously Emotionally Disturbed Children from Public Schools

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PRACTICAL APPROACHES FOR DOCUMENTING BEHAVIORAL PROGRESS OF BEHAVIORALLY DISORDERED STUDENTS

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The Teacher's Role in Documenting Behavioral Progress

Planning and evaluating individual objectives for students are two major legal and ethical responsibilities all special educators have. Whereas, many areas of special education focus objectives primarily on learning skills and academic achievement, teachers in the field of behavioral disorders (BD) must deal directly with behavior improvement and emotional adjustment. Writing objectives and evaluating progress in these areas are obviously more difficult tasks, and teachers generally have less experience and resources in doing so.

This chapter presents a number of practical methods BD teachers can use in documenting progress on individual education plan (IEP) objectives; they are quite reasonable in their time demands and provide accurate child change data. The approaches should appeal to teachers because they really seem to work in showing what's happening with students. They have not been selected either because they do or do not meet research standards for reliability and validity, but rather because they can provide representative information over a period of time. Even though the BD teacher's role is not to be a measurement technician, he/she can greatly improve the quality of progress data gathered by using objective criteria, planning a data collection system, and then systematically implementing it.

Planning a Data Collection System

Objectives in social and emotional change areas are often not written because they are difficult to specify and measure. It is difficult to be precise when describing ways to influence and measure changes in areas such as self-esteem, self-control, and feelings. Instead of trying to develop measurable objectives in these areas, teachers should try to think of related behaviors which indicate change. When such change indicators are described in a sufficiently clear manner so two or more persons can agree on their outcome, the indicators can be used in objectives as bench marks or standards.

Once objectives are determined for each student, the teacher needs to identify the types of information he/she can gather which will provide feedback on progress. Each objective should have some form of clear criteria for gauging improvement. It will help to build into the class data collection plan as much uniformity as possible to reduce the number of individual measurements which need to be implemented.

It makes sense for BD teachers to model the procedures used in general education when setting up a plan to document behavioral/affective improvement. Progress in general education is typically documented by:

1. annual achievement testing;
2. results of criterion-referenced or teacher-made tests, and
3. student materials gathered in a teacher file.

Similarly, the BD teacher can establish an efficient data recording system which includes:

1. pre/post testing with standardized instruments in areas relating to behavior, self-concept, self-responsibility, and interpersonal skills;
2. identifying "indicators of progress" or outcomes for the student and comparing them to pre-determined standards by using product measures such as checklists, file records, teacher ratings during observations, and team consensus; and

3. review of student materials and short term process records placed in a student file, including point cards, graphs, and observational data.

Using these approaches documents child functioning systematically at both ends of the program through pre/post testing and product or outcome measures. Since many of these measures could be used with all the students in a class, the data gathering process is efficient. During the program interim, short term process measures can be used as time and need allow on an individual student basis.

Implementing the Plan Systematically

Even though the teacher specifies the evaluation methods on the IEP forms, he/she may find it helpful to construct a matrix, briefly listing student objectives and selected documentation methods. The matrix can help the teacher think through the timing and location of data collection for all the students as a group, and serves as an easy reference for follow through. It is not necessary that every conceivable documentation procedure be carried out, only that a few best measures be gathered.

When collecting progress data, the teacher can usually use a sampling approach. It is not necessary that all behavior be recorded all of the time to generate accurate data. If time and situations are fairly selected, the data will generally be representative. Sampling will be largely determined by the type of measurement involved. All that is really important in sampling is that data collection is fair rather than biased. The strategy is to spread out the measurements in a logical, random sampling manner. A sufficient number of measurements will

IEP Measurement Matrix

Name: _____

Objective Areas:	Behavior Rating Scale	Self-Concept Test	Sociogram	Classroom Observation	Goal Attainment Scale	Point Systems	When	Where	How Often
1. Self-control during regular classes	x						pre/post	3rd gr.	pre/post
2. Views self more capable and popular		x			x		pre/post	team rating	quarterly
3. Develops positive friendships			x				pre/post	3rd gr.	pre/post
4. Responsibility for class materials						x	Sept.	resource room	daily
5. Accuracy on assigned tasks						x	Sept.	resource room	daily
6. Controls anger				x			Nov.	group class	daily while learning

Fig. 1. IEP Measurement Matrix

balance out normal fluctuations so trends can clearly be seen.

The following sections describe pre/post, product and process measures and give examples of instruments which can be used to document progress.

Pre/Post Measures

Many BD teachers have some experience using standardized tests in their programs. Those used most frequently include: self-concept tests, locus of control scales, peer ratings, attitudinal checklists and teacher ratings of behavior. Such devices are initially used to

identify students whose behavior deviates significantly from the "normal" range and to clarify more specifically areas of student maladaption or concern. When these instruments are well constructed, meeting adequate standards for reliability and validity, they can be very useful for assessing student progress over a school year's time. Repeated administration of appropriately selected tests can indicate the student's functioning at the beginning and end of the program, and thereby be used for generating and measuring progress on shorter-term objectives.

The use of pre/post instruments must be kept in perspective, however, as they are not the panacea that will solve all the teacher's needs to document progress in behavioral/affective areas. It is important to remember that standardized tests and measurements can only be interpreted by comparing the child's score to a norm, e.g. a distribution of scores generated by compiling a large array of scores of similar persons. Thus, the score for an individual student will have no absolute meaning; it will be relative to his/her similarity to the group of students used in norming the measurement device. Teachers tend to give more credibility to such scores than they deserve; the findings must always be considered "as compared to" the normal group and "according to the perception of" whoever provided the information. There is also a problem with self-report devices, where the youngster answers questions about him/herself, because his/her responses are influenced by his/her desire to "put the best foot forward" or to present a particular picture of unhappiness or bravado and so forth.

Within these limitations of score interpretation, norm-referenced assessments can be used to find strengths and weaknesses on fairly long-standing, stable characteristics and to measure change in these characteristics over a long period of time. Such devices are more useful to evaluate pre/post change than to monitor moment-to-moment change. The characteristics measured, being fairly stable, are not expected to show rapid change. Minor fluctuations in response patterns are seen on a short-term basis. If teachers were asked, for example, to fill out a personality questionnaire on a daily basis, they would likely react too specifically to individual questions and lose the "global" picture which the instrument purports to measure. Thus, the manuals for standardized instruments should be checked to: 1) see that test-retest reliability standards of at least $r = .7$ are met and, 2) to find the recommended period of lapse time between administrations to gather data which would indicate real change versus normal fluctuation.

With adequate reliability and lapse time between assessments, the teacher still needs to have a standard in mind for determining whether the child's score is within the average range or whether it is significantly deviant. Most quality instruments address this question in the manual; if not, the teacher could look for the reported mean score and standard deviation and use these indices for evaluating whether the score should be interpreted as significant or not. The normal distribution diagram in Figure 2 could be used for making this interpretation. The darkened area between ± 1 standard deviation is considered an average

score range. The slashed areas between ± 1 to ± 2 standard deviations are considered moderately deviant. The dotted areas between ± 2 to ± 3 standard deviations are considered highly deviant and certainly significant.

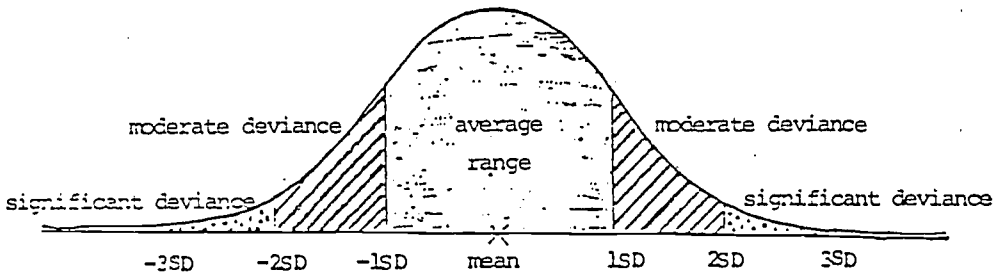


Fig. 2. Normal Distribution of Scores

Teachers can use this same normal distribution diagram to evaluate pre/post change scores. The general rule of thumb is that pre/post difference must at least equal one standard deviation to be considered significant. Using the example in Figure 3, the pre/post change score X would not be considered a significant amount of change; the pre/post change score Y would be considered a significant amount of change.

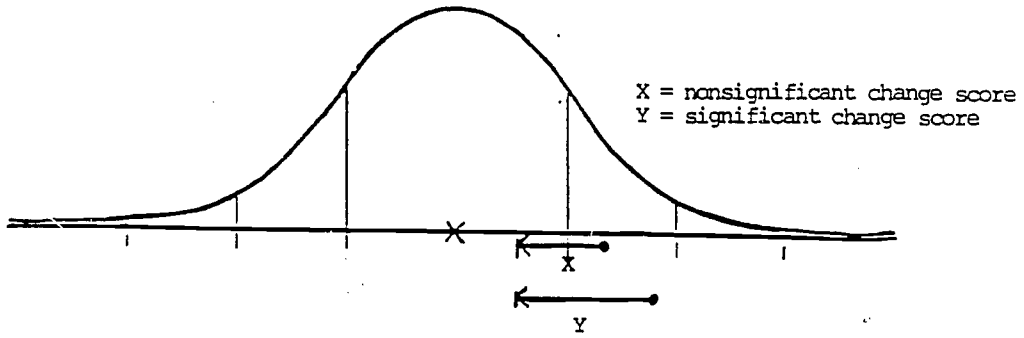


Fig. 3. Interpretation of Change Scores

The types of standardized pre/post measures used in BD programs most frequently include behavior rating scales, self-rating instruments and sociometric devices. Each will be briefly discussed in the following section.

1. Behavior Rating Scales. Over two hundred behavior rating scales are currently available for teacher use in rating students' behavior. Special education agencies may require that teachers use certain scales which have met quality standards and/or have been selected to provide uniform information across classrooms and districts. BD teachers should ask the program administrator or consultant about recommended behavior rating scales for use in their classrooms. Before selecting a behavior rating scale. the teacher will want to read the items included in the scale to determine whether they generally "fit" students in the program and whether the statements seem suffic-

iently clear. It would not be feasible to use a scale with many items relating to anxiety over academic work in programs for young, nonverbal autistic youngsters, or to assess achievement motivation for children working on self-help skills. In this author's view, the most useful scales are those which focus on overt classroom behavior.

It may appear to be an oversimplification to point out the person selected to fill out the behavior rating scale should be (a) the one who best knows the child in (b) the desired setting to be assessed. The general education teacher may be the one selected for evaluating behavior in the mainstream, but only if he/she has regular interaction with that student. The resource room teacher may not be nearly as adept as the lunchroom supervisor or the bus driver in rating social skills used in the peer group. It may be helpful to get a variety or viewpoints by having more than one person fill out a behavior rating scale. When doing this, do not average all the results together. By keeping each rater's results separate, comparisons can be made to show how persons in differing situations perceive the student's behavior. The rating of the person who is close to the content or aim of the IEP objective can be used for teacher pre/post, bus driver pre/post, etc.

Most behavior rating scales offer a number of factor scores on dimensions such as classroom disturbance, impatience, and teacher rapport, which can be interpreted by comparison to a normative spread of scores or to a particular "cut-off score" deemed significant by the test constructors. Where a number of dimensions are combined within a behavior

rating scale, a method to graph the results is often useful in visually reviewing the findings, as illustrated in Example 1. Individual items on a behavior rating scale can be used to pinpoint behavior change targets, but they are not validly used to document pre/post change, because rating scale instruments and factor scores must be used and interpreted as they have been standardized. Findings from the behavior rating scale can be further validated, or cross-checked, by gathering or reviewing behavior observation data, anecdotal records, or other process measures.

Some examples of behavior rating scales are the Devereux Elementary School Behavior Rating Scale and the Behavior Rating Profile.

Example 1. Devereux Elementary School Behavior Rating Scale

Description: Teachers rate 47 classroom behavior items on their relative frequency of occurrence. Items are grouped into 11 factor scores: classroom disturbance, impatience, disrespect-defiance, external blame, achievement anxiety, external reliance, comprehension, inattentive-withdrawn, irrelevant-responsiveness, creative initiative, and need closeness to teacher. The scores are marked graphically on a profile sheet. The scale is appropriate for grades K-6.

Score interpretations: Norms have been established and are displayed on the profile sheet. The average score range is shaded and the mean and standard deviation score ranges are indicated. Both pre/post behavior graphs can be drawn on one profile sheet. This provides

DEVEREUX ELEMENTARY SCHOOL BEHAVIOR RATING SCALE *

George Spivack, Ph.D. and Marshall Swift, Ph.D.
Devereux Foundation Institute for Research and Training

DESB PROFILE

Student's Name Larry Teacher's Name Ms. Sharp Ears

Student's Sex M Age 8 Academic Subject Reading

Grade 3 School Anywhere Elementary Date of Rating Pre 9/4/80 ←- - -●
Post 5/20/81 x——x

Behavior Factor	Pre/Post	Factor Item Raw Scores	Tot'l Raw Sc.
1. Classroom Disturbance	needs control 11 5/3	13 3/3 interfere	18/10
	teases 12 5/2	30 5/2 drawn in	
2. Impatience	starts 1 1/1	44 4/5 go back	18/14
	sloppy 36 5/4	47 6/4 rushes	
3. Disrespect-Defiance	disrespect 5 5/2	9 5/2 subject	20/9
	defy t'ch'r. 7 5/2	16 5/3 rules	
4. External Blame	t'ch'r. help 2 2/2	34 5/3 blames	15/9
	called on 25 1/1	38 2/3 too hard	
5. Achievement Anxiety	test scores 22 2/3	31 1/2 resting	6/12
	right answ. 23 1/3	33 2/4 sensitive	
6. External Reliance	see others 24 1/2	42 3/3 swayed	14/13
	rely t'ch'r. 29 4/3		
	directions 32 5/4	46 1/1 choices	
(7) Comprehension	understands 10 3/4	37 1/4 recites	6/11
	applies 35 2/3		
8. Inattentive - Withdrawn	lose attn. 18 2/2	28 1/1 oblivious	6/5
	not attnd. 20 2/4	43 1/4 reachable	
9. Irrelevant - Responsiveness	exagg. story 14 1/1	17 3/2 interrupt	6/5
	answers 15 1/4	26 1/4 irrel. talk	
(10) Creative Initiative	brings in 3 3/3	6 1/2 start disc.	8/10
	act. imag. 4 3/2	21 2/3 talk exper.	
(11) Need Closeness to Teacher	seeks t'ch'r. 8 1/3	39 3/3 friendly	5/11
	helps 19 1/2	45 1/3 phys. close	
Additional Items		27 Unable change	3/3
		40 Quits	7/5
		41 Slow Work	5/4

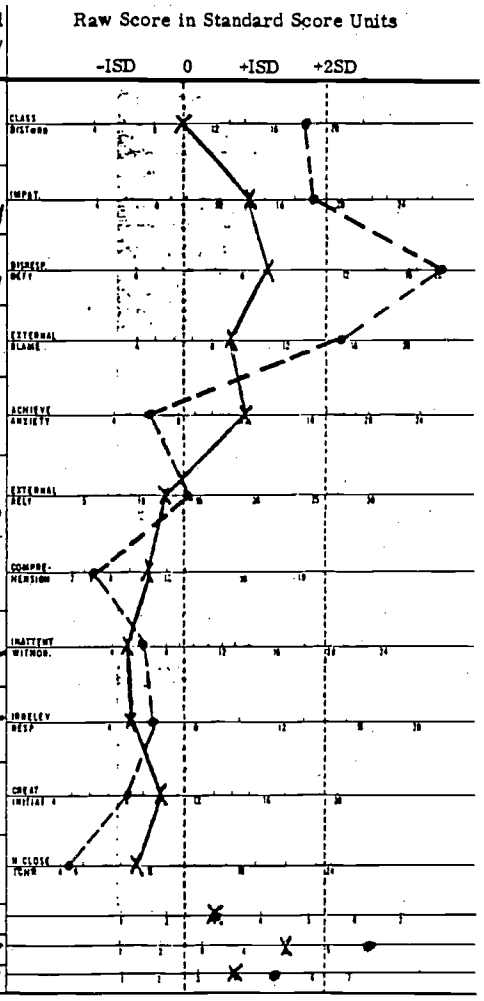


Fig. 4. Devereux Elementary School Behavior Rating Scale

* Copyright 1967, the Devereux Foundation, Devon, PA. Reprinted with permission.

a clear and concise picture of behavior change for easy interpretation. Individual item scores can likewise be compiled on one sheet, for easy identification of items showing dramatic change. To be considered a meaningful change, the post-factor score should move in the desired direction at least the distance of 1 standard deviation. Desired direction for all factors except 7, 10, and 11, is toward the -1 SD end of the scale. Factors 7, 10, and 11 are reversed, e.g., the desired direction is toward the +2 SD end of the scale.

Comments:

1. The same teacher should rate the student's behavior pre/post to reduce differences in perceptions and to use the same class as the standard of comparison.
2. Low factor scores on the pre-test may be useful for identifying goal areas on the IEP. Individual test items could be pinpointed as specific IEP objectives. Process measures might be gathered on a short term or sampling basis to provide a progress measure and to help validate the post-test factor score.

Authors: George Spivack and Marshall Swift

Source: The Devereux Foundation
19 South Waterloo Road
Devon, Pennsylvania 19333

Date: 1967.

Example 2. Behavior Rating Profile

Description: The BRP is a standardized battery of six independently normed measures included teacher and parent rating scales, child self-ratings, in respect to home, school, and peers, and a class sociogram instrument. Each component yields a total score which has been found to discriminate among groups of emotionally disturbed, learning disabled,

B R P

BEHAVIOR RATING PROFILE SHEET

LINDA L. BROWN & DONALD D. HAMMILL

Name: Amanda

Parent's Name: ________

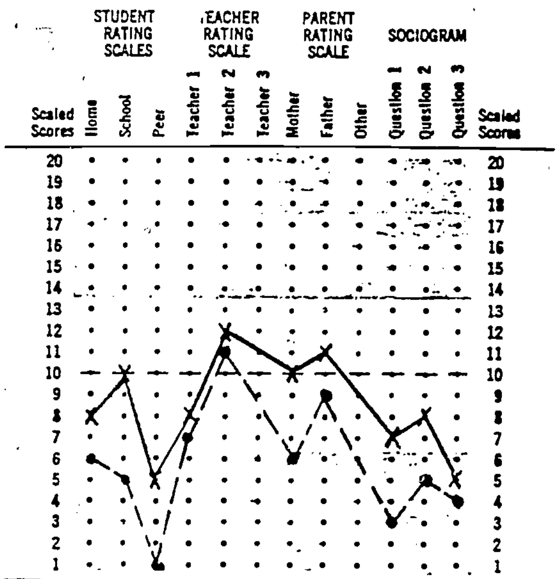
Address: ________

School: Anywhere, USA

Teacher (Grade): Mrs. Attention (6)

Examiner: ________

Referred by: ________



(Scaled Scores. Mean = 10, Standard deviation = 3)

COMMENTS:

Pre ●————●
Post x————x

Pre/Post		
Date Tested	81/82 (YEAR)	9/5 (MONTH)
Date of Birth	69 (YEAR)	9 (MONTH)
Age	12-0 (Pre)	12-8 (Post)

BRP Scales	Raw Scores	Scaled Scores
Student Rating Scales		
Home Scale	8/11	6/8
School Scale	6/13	5/10
Peer Scale	2/7	1/5
Teacher Rating Scale		
Teacher # 1	47/60	7/8
Teacher # 2	79/85	11/12
Teacher # 3	—	—
Parent Rating Scale		
Mother	54/72	6/10
Father	66/75	9/11
Other	—	—
Sociogram		
Question # 1	27/27 | 22/27	3 | 7
Question # 2	25/27 | 20/27	5 | 8
Question # 3	26/26 | 25/26	4 | 5

Fig. 5. Behavior Rating Profile Sheet

and normal children. The scores can be used to document the degree of perceived deviance and to locate the settings in which the student is viewed as deviant. These scores can be graphed on the profile sheet for comparison of the scores--each one to the other. These instruments are appropriate for grades 1-12.

Score interpretation: Each measure has been normed to a mean = 10 and a standard deviation = 3. The profile sheet uses a dashed line to indicate the mean. Both pre/post scores for the child can be drawn on one profile sheet, standard deviation ranges can be marked by the teacher, and comparisons of change easily made. It is desired that each score move in a positive direction toward or above the mean line. An extremely high score needs to be confirmed in other ways by the teacher, as a high score may be true or it may be falsified. A change score should move at least 1 SD, or 3 scale score points, to be considered significant.

Comments:

1. The same teacher should rate the child's behavior on a pre/post basis in comparison to the same class of children.
2. These rating scales do not provide factor scores. Individual items might be useful for consideration as IEP objectives. Comparable items often appear on all three forms--teacher, parent and student--and thereby are useful for checking similarity of problems across home and school settings, and as perceived by the child.
3. Teachers using the student rating scales, and the sociogram questions, should check the following two sections for suggestions in use and interpretation.

Authors: Linda Brown and Donald Hammill.

Source: PRO-ED
5341 Industrial Oaks Blvd.
Austin, Texas 78735

Date: 1978.

20

2. Self-Rating Instruments. A number of questionnaires and rating scales are of interest to the BD teacher because such instruments ask the student how he/she feels about him/herself. These have a series of statements to which the child responds "like me" or "not like me", "true" or "false", or rates of similarity on a scale of 1-5. Those most frequently used in school settings deal with self-concept, perceptions of behavior and acceptance by peers and locus of control. Students' responses on these questionnaires are useful in augmenting the teacher's view of such concerns. Although there are no direct measures of self-concept, the teacher can compare what the student says about him/herself to the teacher's own observations.

There is a problem, however, in the credibility of self-report devices. They are easily "faked" by the child who wants to "put the best foot forward" by giving the response known to be the socially acceptable answer. Some students may not clearly know how they feel about an item, but respond as others have suggested they should feel. Therefore, in interpreting scores from self-report questionnaires, all low (negative) scores are generally considered seriously, while high (positive) scores are considered to be questionable. In either case, the teacher needs to look for confirmation of the findings of the child's actions and unsolicited self-statements. When presenting the questionnaire to students, the teacher should enlist honest responding by explaining that the questions can help him/her sort out how he/she feels about what's going on in his/her life and that there are no "correct" answers.

Self-rating instruments which are well documented provide information in the manual on norms, means, and standard deviations for comparable populations of children. The teacher needs these data to be able to interpret the significance of the child's score as well as the change score over a pre/post basis. With these cautions in mind, the BD teacher will most likely find a comparison of the child's own perceptions on a pre/post basis very useful in yielding insight into the child's feelings as well as providing a standardized indicator of change--hopefully progress--made on specific objectives in the affective area.

Example 1. Piers-Harris Children's Self-Concept Scale

Description: Children respond "yes" or "no" to 80 statements relating to "the way I feel about myself", including items such as "I am a happy person" and "I give up easily". This instrument has been widely used and normed for grades 4 through 12. In addition to the total self-concept score, factor scores can be derived in the following areas: behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction.

Score interpretation: The global score is described as the most valid and reliable. The raw score is converted to a percentile score for interpretation. The range of scores 31% to 70% are considered to be average scores. By applying the percentages occurring in a normal distribution, the following diagram can be used, both to establish the significance of the deviation of the score, and the significance of scores found on a pre/post basis. Test authors state that a score

must change by at least 10 points to be considered statistically significant.

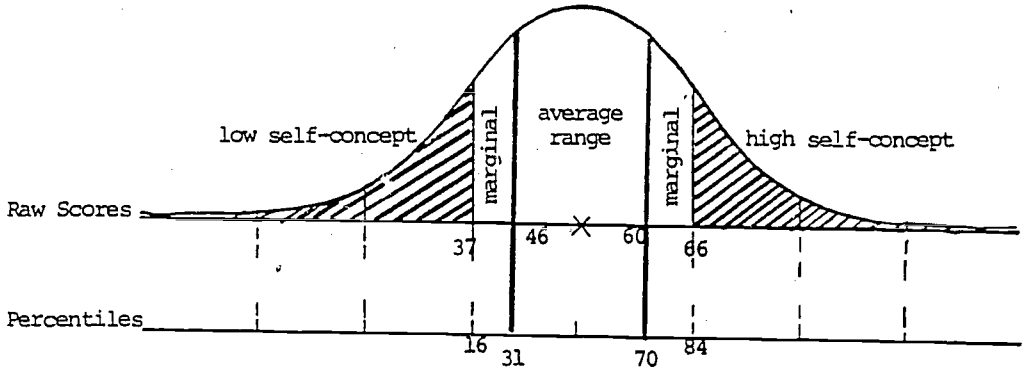


Fig. 6. Interpretation of Score Significance
Piers-Harris Children's Self Concept Scale

No guidelines are provid in analyzing the individual factor scores. They appear to be primarily useful for exploring the relative contributions of each area to the overall global score. The teacher can easily determine the percent of items answered in a positive way by the following formula for each factor:

$$\frac{\text{\# of items answered in positive direction}}{\text{total \# of items loading into the factor}}$$

Comments: No procedure is provided to graph these scores. The teacher may find a simple table to be the most efficient way to report scores on this test, such as the following:

Piers-Harris Children's Self-Concept Scale

(Percentile rating indicating how student feels about himself.)

(Percent of positive responses on factors within the test: these give a rough profile of relative strengths or weaknesses and are not weighted scores.)

(Average score range is 30%-70%)

Pre	Sig.	Post	Sig.
____%	_____	____%	_____

Comment on Significance of Change:

_____

_____

Factors - Percent of positive responses		
Behavior	____%	____%
Intellectual & school status	____%	____%
Physical appearance & attributes	____%	____%
Low anxiety	____%	____%
Popularity	____%	____%
Happiness & satisfaction	____%	____%

Authors: Ellen Piers and Dale Harris.

Source: Counselor Recordings and Tests
Box 6184 Acklen Station
Nashville, Tennessee 37212

Date: 1969.

Example 2. Nowicki-Strickland Locus of Control Scale for Children

Description: Students answer "yes" or "no" to 40 items, indicating how externally controlled by fate, luck, or powerful others they perceive themselves to be. The total score has been found to measure a general tendency for the child to feel he/she can make personal choices of action and effect outcomes for him/herself. Examples are:

"Do you believe wishing can make good things happen?" and "Most of the time do you find it useless to try to get your own way at home?" The perception of locus of control has been found to have a significant relationship to a child's striving for achievement and self-control. Although there are versions for younger children available, this instrument is normed for grades 3 through 12.

Score interpretation: A total score is derived and interpreted by comparing it to a table of means and standard deviations. The higher the score, the greater the student's perception that his/her life is controlled by external forces. The teacher will find that drawing a normal curve, marking off mean and standard deviation units, and then locating the child's score placement will provide the clearest interpretation of significance of the score as well as degree of change on a pre/post basis. The general rule of movement of at least one standard deviation can be used in interpreting a change score. An example follows in Figure 7.

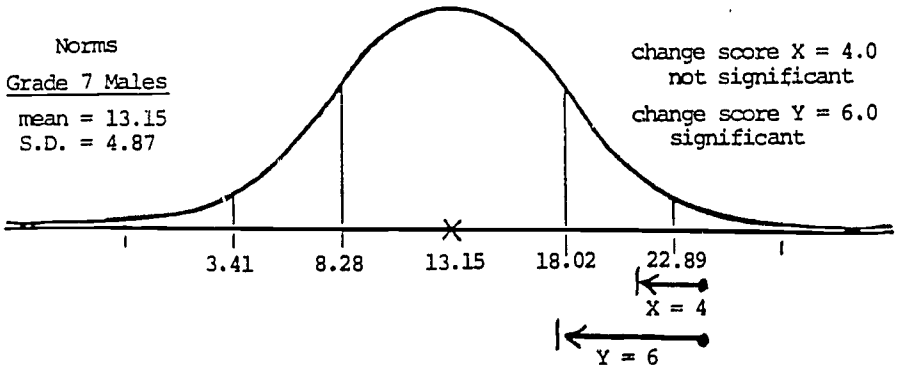


Fig. 7. Use of Normal Distribution Diagram to Interpret Scores with Separate Grade/Sex Norms - Nowicki-Strickland Locus of Control Scale for Children

Comments: No procedure is provided to graph these scores. The teacher might find a table useful which provides places to write in the normed mean and standard deviation, as well as the child's pre/post scores, as follows:

Locus of Control - Externality Score	
Quantifies how externally controlled by luck, fate, or powerful others student perceives his behavior to be, as opposed to being internally or self-controlled.	NORMS Grade ____ Mean ____ SD ____ Pre Sig. Post Sig. ____ ____ ____ ____ Comment on Significance on Change: _____ _____

Authors: Stephen Nowicki and Bonnie Strickland.

Source: Journal of Consulting and Clinical Psychologist Vol. 40, No. 1, 148-154

Date: 1973.

3. Sociometric Instruments. With the increased emphasis on systematic observation and ratings of overt behavior in the BD field, the gathering of sociometric data has perhaps been underused the last decade. Sociometric techniques involve having peer members of a class record their interpersonal attractions among members of their group. Sociometric ratings have been found to be one of the most dependable and predictive measures of interpersonal traits, and are highly responsive to behavioral

change in individuals. Peers may be better judges of interpersonal skills than teachers and parents, as the attraction and rejection of peers so directly determines the nature of an individual's social interactions in a group.

General education teachers often use their own simple sociometric questions and analyze student responses by drawing sociograms. For use in measuring pre/post change of BD children, however, the sociometric device needs to be a standardized instrument with adequate normative data to be able to interpret the findings. Sociometric data most frequently used include the number of positive choices, the number of negative rejections, and a ratio of one score to the other.

A limitation in gathering sociometric data is the requirement that class groups with at least 20 members be used. Therefore, most special education classes could not be used with these devices. However, the more valid determination of a child's social functioning would likely be in the regular, mainstream class and it may be more appropriate anyway. Also, members of the group need to have been together long enough to know each other quite well. If sociometric data is being gathered for providing a pre-measure, several weeks of a school year need to have gone by to allow group relationships time to settle.

Example 1. Behavior Rating Profile Sociogram

Description: This instrument was described previously (rating

scales - Example 2). The sociometric part of this battery is a peer nominating technique in which the teacher selects three pairs of sociometric questions which represent different aspects of the student's interpersonal functioning. Seven pairs of questions are available for use, representing the areas of friendship, relationships based on academic ability, and relationships based on leadership skills. An example of a pair is: 1) "Which of the girls and boys in your class would you most like to invite to your home after school?" (name three) and 2) "Which of the girls and boys in your class would you least like to invite to your home after school?" (name three).

Score interpretation: Difference scores (# of acceptance--# of rejections) are used to determine a ranking score for the child within the class. This ranking score is converted to a scale score and the scale score is entered on the profile sheet (see previous illustration). The deviancy of the score from the "normal" range and the significance of any change found on pre/post ratings are interpreted by the mean and standard deviation as described.

Comments: Peer ratings can provide a global yardstick of change in a child's acceptance or rejection by others. Being such a global score, however, it is not appropriate for measuring change in a broad goal area, rather than being specifically focused on individual objectives. Further process measures should be used to describe progress on related objectives.

Authors: Linda Brown and Donald Hammill

Source: PRO-ED
5341 Industrial Oaks Blvd.
Austin, Texas 78735

Date: 1978.

Example 2. The Class Pictures (grades K-3)
A Class Play (grades 3-7)
Student Survey (grades 7-12)

Description: These three instruments are simple peer rating devices in which classmates are nominated to fill positive and negative roles. In the K-3 version, positive, negative and neutral picture cards are shown individually to children and each child is asked to name classmates most like and unlike the picture model. In the 3-7 version, the children are asked to nominate classmates for twenty hypothetical roles in a class play, including such roles as "a true friend" and "the part of a bully who picks on children". In the 7-12 version, students are asked to write the names of classmates who best exhibit behaviors provided in descriptive statements, such as "One who gets upset when faced with a difficult school problem".

Score interpretation: Scoring involves computing the percentage of negative selections for each child out of his/her total nominations. This negative index score has been found to be one of the best predictors of mental health adjustment for children when followed up as adults. (Routh & Hennings, 1981) Early edition of these instruments provided normative data of means and standard deviations. Scores can be interpreted similarly to all other measures discussed in this section.

Comments: No graph format is available for display of scores; a simple table could be made for entering pre/post scores as illustrated in the Piers-Harris and Locus of Control Scale examples.

Authors: Eli Bower and Nadine Lambert

Source: California Test Bureau/McGraw Hill
Del Monte Research Park
Monterey, California 93940

Date: 1961.

Product Measures

Throughout the course of a program, certain products will develop which can be used for documenting progress. The product may be concrete, such as a record or file of materials, or an outcome behavior--a new state of being or behaving--which can be judged or measured. Teachers often overlook existing records, believing they must set up a new, on-going behavior tracking system to precisely document IEP objectives. It is often more efficient to search existing records and to use them as "indicators of progress".

The difficulty for teachers in measuring changes in behavior or emotional states at later points in time is that they don't have the resources to implement such systems as the "experts" have taught them. It is not always possible to think of measurable behaviors which really represent the desired student change or easy to specify a criterion of change.

What needs to happen is for all to take a more reasonable approach to these evaluation concerns and strive to look for "indicators of

change", to accept "consensus" among those directly observing the child, and to use professional judgment in establishing criteria for change. If teachers can establish some major benchmarks of progress which team members agree have/have not been reached, then new levels of behaving or being can be compared to these benchmarks.

The types of product measurement procedures briefly described in this section include criterion-referenced procedures, analogue (simulation) observations, and use of archival records.

1. Criterion-Referenced Procedures. Criterion-referenced procedures can be used as a form of pre/post measurement. To do so, specific criteria for learning or change must be established prior to intervention; subsequent progress is then measured against these criteria. Much more flexibility is available when using criterion-referenced measures than when using standardized tests; the teacher selects the areas and standards of measurement, the time frame, and the specific method of documentation. This approach is, of course, the model upon which the IEP requirements are based; during the earliest stages of a child's program, goals and behavioral objectives are to be written with accompanying procedures for measuring progress.

Criterion measures are similar to end-of-year skill checklists used by many teachers. General education curriculae are typically laid out in a scope-and-sequence organization and then leveled, so that expectations for mastery are clear for each grade level. In measuring each child's progress in such a curriculum, important questions

are, "How much has the child gained?" and "What skills has he/she mastered?" It is of secondary importance (due to the need for grouping) to ask, "How does this child deviate from classmates?" and "Is the amount he/she has learned adequate?"

In spite of the popularity of the criterion-referenced approach, little practical assistance has been offered educators in using these procedures in areas other than learning skills and academics. There are few published curriculae to guide the development of behavior, maturity, social skills, emotional stability, or self-concept. To the degree that BD teachers, together with general educators, can logically lay out these behavioral ladders of development, criterion-referenced procedures will provide a means of measuring precisely what changes are occurring. To some extent, it is easy as saying, "Tell me what it is you want to teach and then you can make your own rules for judging when it's taught." The following two examples provide reasonable solutions to the problems of sequencing, providing standards, and documenting change without requiring excessive teacher time.

Example 1. VORT Behavioral Characteristics Progression

Description: This instrument is a series of behavior progressions which has been developed to help teachers assess entry levels for a child, guide instruction, and display progress. The individual behavior characteristics are organized into categories and sequenced from simple to complex in fifty-nine strands. Although this is a nonstandardized instrument, each strand is made up of thirty to fifty charac-

teristics which are ordered as similarly to normal skill development patterns as is known. Each step in the strand--a behavior characteristic--could be used as an objective within the broad goal area represented in the strand. The strands focus primarily on adaptive behaviors, self-help skills, developmental skills, and social behavior. The BD teacher might find the following strands most useful: attendance/promptness, listening, adaptive behaviors, impulse control, interpersonal relations, responsible behaviors, personal welfare, self-confidence, honesty, social speech, attention span, task completion, reasoning, pre-vocational skills, and health. Two examples are included: #24 Impulse Control and #25 Inter-personal Relations.

Procedure: a) The teacher determines what the major problems of the student are as represented in the Behavioral Characteristics Progression (BCP) charts. The teacher reviews the identifying behaviors section of each strand and highlights circles preceding each behavior descriptive of the child.

b) Systematic assessment is carried out in the behavior strand areas deemed most important. Test information, teacher-reports, self-reports, and observation data can be matched to these strands to verify and place the child into the progressive strand.

c) The teacher and appropriate team members develop an IEP by identifying desired steps in each strand within the program. These steps provide the objective for which intervention plans and evaluation methods can be generated. The team needs to decide how they will know when each step is accomplished and enter agreed upon criteria on the IEP or on an objectives worksheet modeled after the example in Figure 10.

Behavioral Characteristics Progression (BCP)

NAME _____

TEACHER _____

SCHOOL _____

24 IMPULSE CONTROL

1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
Sits quietly for 30 seconds when group is listening to stories, music.	Sits quietly for one minute when group is listening to stories, music.	Takes turns in game activity 25% of time or less.	Sits in seat, stands in line, etc., without fidgeting, moving for 25% or less of activity.	Sits quietly for more than 1 minute when group is listening to stories, music.	Displays self-destructive behaviors 75 to 100% of baseline.	Changes activity without emotional outburst when change cue is well-defined.	Changes routine without emotional outbursts when alternatives are presented.
9.0	**10.0**	**11.0**	**12.0**	**13.0**	**14.0**	**15.0**	**16.0**
Sits quietly for more than 5 minutes when group is listening to stories, music.	Quiets down after active period (e.g., recess) if reminded frequently.	Takes turns in game activity 25-50% of time.	Sits in seat, etc., without fidgeting, moving for 25-50% of the activity.	Withdraws or becomes verbally aggressive for short periods when scolded, criticized, etc.	Displays self-destructive behaviors 50-75% of baseline.	Calls or acts out while raising hand for attention.	Accepts change in routine without emotional outbursts when reasons are explained.
17.0	**18.0**	**19.0**	**20.0**	**21.0**	**22.0**	**23.0**	**24.0**
Raises hand for attention.	Sits quietly for more than ten minutes when group is listening to stories, music.	Takes turns in game activity 50-75% of the time.	Sits in seat, stands in line, etc., w/out fidgeting, moving for 50-75% of the activity.	Sits quietly for a full period when group is listening to stories, music.	Takes turns in game activity 75% or more of the time.	Sits in seat, stands in line, etc., w/out fidgeting, moving 75% or more of the activity.	Displays self-destructive behaviors 25-50% of baseline.
25.0	**26.0**	**27.0**	**28.0**	**29.0**	**30.0**	**31.0**	**32.0**
Quiets down immediately after active period and awaits instructions.	Leaves provoking situation.	Controls physical responses when angered.	Accepts most criticism with no emotional outbursts.	Changes activity without emotional outburst when change is announced.	Displays self-destructive behaviors 0-25% of baseline.	Displays effective behavior appropriate for the situation/place.	Acts according to social rules in work & play situations. Does not cry when loses game.
33.0	**34.0**	**35.0**	**36.0**	**37.0**	**38.0**	**39.0**	**40.0**
Avoids disruptive actions in public places.	Controls temper well: verbalizes feelings in a manner acceptable to home, school, etc.	Accepts friendly teasing—smiles or laughs.	Plays and works without interfering with or disrupting work of others.	Recognizes own lack of self-control and works with other to improve self.	Plans/considers action before carrying it out.	Touches others in a manner suitable for the home, school, neighborhood, etc.	Maintains self-control when faced with failure, problems, disappointments.

Identifying Behaviors

○ Displays self-stimulating behaviors ○ Displays self-destructive behaviors ○ Blows up, becomes excited, loses self-control when he cannot do or get what he desires, encounters problems, etc. ○ Withdraws or becomes aggressive for long periods when scolded, criticized, teased ○ Overreacts to the slightest provocation ○ Blows up, gets excited, etc., when offered constructive, helpful criticism ○ Displays inappropriate affect ○ Displays inappropriate facial expressions

Fig. 8. Behavioral Characteristics Progression (BCP) Impulse Control

Behavioral Characteristics Progression (BCP)

NAME _____

TEACHER _____

SCHOOL _____

25 INTER-PERSONAL RELATIONS

1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
Smiles, looks up when another person enters the room.	Reaches for familiar people.	Becomes quiet when caressed.	Holds head up in group activities such as eating, games, etc.	Returns smile when smiled at.	Watches the movements of others—shows interest.	Demands personal attention by making noises.	Seeks attention of others (e.g., repeats performances that are laughed at).
9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Moves near others during free play.	Accepts help from others (e.g., when working on task).	Plays alone in presence of others.	Shares when told to do so but complains.	Hits another, making excuses to teacher when confronted with deed.	Exchanges items for play.	Watches others play and may join in for a few minutes.	Plays individually with adult.
17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0
Hits another, voluntarily making excuses to third party (e.g., goes to teacher).	Plays with one or two others.	Responds to and makes verbal greetings.	Plays cooperatively with another child.	Shows affection for familiar person (e.g., hugs, pats, kisses, etc.).	Accepts and shows affection appropriate to home, school, street.	Hits another, afterwards verbalizing reasons to the one hit.	Hits another and verbalizes while hitting.
25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0
Verbalizes feelings to another, then hits him.	Takes turns.	Plays with group of three or more.	Plays cooperatively in group activity.	Bargains with other children.	Verbalizes feelings to another without hitting.	Plays group cooperative games with loose rules.	Interacts with others, keeping fighting or quarreling to minimum.
33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0
Plays competitive active games such as hide and seek.	Apologizes without being reminded.	Plays simple competitive table games such as "fish," "old maid," dominoes.	Offers help to others voluntarily.	Protects other children and animals.	Shares toys with other children.	Comforts playmates in distress.	Plays difficult games requiring skills, scoring and knowledge of rules.
41.0	42.0	43.0	44.0	45.0	46.0	47.0	48.0
Behaves in a courteous manner to peers and staff.	Contributes to class discussions and activities.	Participates in peer-group activities when not asked.	Disapproves of offensive peer behavior by ignoring or actively discouraging it.	Verbalizes feelings of anger with other students/teacher.	Initiates a compromise to resolve conflict with peer.	Uses actions of others as social cues (e.g., stands, kneels, whispers, shouts).	Takes part in peer group activities such as clubs, teams, dances, parties.
49.0	50.0						
Participates in peer-group activities when asked.	Leads peer group in various play and work activities.						

Identifying Behaviors

○ Rarely plays with other children ○ "Negative" contributions to class discussions & activities ○ Rarely speaks, leads activities or volunteers ○ Plays w/objects rather than people ○ Uses others to gain own ends, reward while depriving them of same chance ○ Alienates peers by teasing, arguing or being cruel ○ Rarely shares w/ others ○ Rarely participates in group activities ○ Plays with younger chiloren instead of peers ○ Fights, hits, bullies, bosses peers ○ Considered weird by peers

Fig. 9. Behavioral Characteristics Progression (BCP) Inter-Personal Relations

BCP LEARNER OBJECTIVES WORKSHEET

Office of Education
School System

PUPIL Chris ADDRESS _____ BIRTHDATE _____

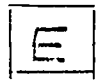
TEACHER _____ SCHOOL _____ DATE _____

STRAND	#	OBJECTIVE	EST. ATTAIN-MENT	ACTUAL AT-TAIN-MENT	METHODS, MATERIALS, COMMENTS, ETC.
Impulse Control	15.0	Raises hand and waits before speaking	10/81	10/81	Use self-monitoring index card
Impulse Control	16.0	Does Turtle when teacher cues	11/81		Teach Turtle technique and cue
Impulse Control	27.0	Uses Turtle technique by self	1/82		Use countdown for self-monitoring
Inter-personal Relations	20.0	Plays card game cooperatively	11/81		Role play how to handle upsets

Fig. 10. Chart for Recording IEP Objectives

d) The VORT booklet offers an observation format for ongoing data recording relating to accomplishment on the objectives for a class of students. The example in Figure 11 illustrates how this could be adapted to serve as daily check-charting for a group of students, each working on different behaviors, for a month's duration. VORT suggests that a code (such as the following) be used in check-charting.

[ ]	No opportunity offered child to display behavior.
[—]	Child does not display behavior when given opportunity.



Child displays behavior a portion of time (emerging) but less than criterion set.

Child displays behavior at criterion level.

Behavior has met criterion established for objective and is no longer being tracked.

e) On a monthly basis, the teacher updates the behavioral strands chart by marking off all objectives according to the established criteria, by 1) coloring in the entire step box in yellow highlighter, 2) writing in the date of accomplishment, and 3) x'ing out any identifying behaviors which no longer apply.

Comments:

1. This instrument provides an excellent illustration of how a series of objectives can be sequenced and the format used to display progress. The structure is straightforward, the instrument provides sequenced interim objectives, and uses process measures to the extent possible to document completion of objectives.
2. The sequence of objectives within each strand may not be logical when applied to individual students. Students typically show uneven achievement of these behavioral skills. No attempt should be made to fit the child's program to the strand sequence unless it makes sense for the given child. The objectives may simply be used as separate progress criteria without requiring movement through each step of the strand.
3. The check-charting illustration is actually a process measure but shows how it can be combined with a criterion referenced measure.
4. With some experience working with the behavior strands of this instrument, teachers should be able to develop their own behavior progressions by task analyzing desired goals for their students.

Authors: Office of the Santa Cruz County Superintendent of Schools

Source: VORT Corporation
P.O. Box 11132
Palo Alto, California 94306

Date: 1973.

Code:
- [-] No opportunity offered child to display behavior.
- [=] Child does not display behavior when given opportunity.
- [E] Emerging: displays behavior a portion of the time.
- [✓] Child displays behavior at criterion level.
- [X] Behavior has met criterion; no longer being tracked.

Teacher Ms. Checker

Month September

Name	Objective/Criteria	Dates:	1	2	3	4	8	7	10	11	14	15	16	17	18	21	22	23	24	25	28	29	30
Billy	Sits quietly without kicking during opening group.		-	-	-	-	-	-	E	E	-	E	E	E	E	E	✓	✓	✓	✓	✓	✓	X
	Follows directions to move to new activity area		-	-	E	E	E	E	✓	✓	✓	✓	✓	X									
	Plays with one toy for 5-min. period		E	E	E	✓	✓	E	✓	E	✓	✓	✓	✓	✓	X							
Staci	Keeps hands to self during snack time		-	-	-	E	-	E	E	✓	✓	✓	E	✓	✓	✓	✓	✓	X				
	Asks for food when cued by teacher		-	-	-	-	-	-	-	-	-	-	-	E	E	E	E	E	E	E	E	✓	✓
Randy	Stops self-abuse when told "stop hitting"		-	-	-	E	E	E	-	-	-	-	-	-	-	E	-	-	E	-	-	-	-
	Plays with sensory toy for 5-min. period		-	-	E	E	E	E	✓	✓	✓	✓	✓	X									
	Plays with sensory toy for 10-min. period													E	E	E	E	E	E	E	E	E	✓
Billy	Follows directions to get work box and move to new area.														E	E	E	E	✓	✓	✓	✓	✓
	Plays with one toy with another child for -min.															-	-	-	-	-	-	-	E
Staci	Keeps hands to self during music group.																		-	-	E	✓	

Fig. 11. Daily Check-Charting

Example 2. Goal Attainment Scaling--Objectives Written at Each Scale Level

Description: Goal attainment scaling is a flexible procedure in which a series of objectives are written. These objectives are then used as outcome levels at the end of the program for documenting and measuring progress. The objectives, written at each scale level (most unfavorable, etc.)--all five levels--are not based on test items or strands of behavior characteristics and, thus, require more conceptual creativity on the teacher's part. The approach may be more satisfying, however, as the behavior objectives for the child are truly individually determined. Also, the objectives, scaled within each goal area, can be written for other program aspects which greatly impact the child, e.g., greater consistency in home management or use of adapted materials by mainstream teachers.

Learning to write good goal scales comes from experience in writing and using scales. Experience improves ability to write different outcome levels in clear behavioral terms, to think in terms of range of outcomes, and to make more accurate predictions. Although the procedure requires an individual program for each student, there are commonalities among student problem areas. After writing a number of scales, teachers often find items from previously written scales can be re-used and that gradually a bank of scales is accumulated.

Originally, two basic elements of the Goal Attainment Scale were suggested: 1) the specific goal and objectives, and 2) the five levels of the scale, e.g., most favorable, more than expected success, etc.

An example of these elements appears in Figure 12.

SCALE HEADINGS:	GOAL AREA: TASK BEHAVIOR
LEVELS:	(weight =) . 3
Most unfavorable outcome thought likely	Almost no work accomplished in spite of continual teacher intervention.
Less than expected success	Completes ¼ to ½ of assignments with continual prodding and ultimatums.
Expected level of success	Completes one-half of expected assignments in resource room with frequent prodding.
More than expected success	Completes most assignments with 1 to 2 reminders, per assignment.
Most favorable outcome thought likely	Completes most assignments with no reminders.

Fig. 12. Elements of a Goal Scale

Three to four priority goal areas should be selected for the student. These priorities will not necessarily include all the important work to be completed with each child, but should represent the major goal areas of the special education program during the time period covered by the Goal Attainment Scale. The levels represent shorter-term objectives within each goal area. Figure 13 provides a sample of a complete Goal Scale written for four goal areas: noncompliance, tolerating frustration, peer interaction, and homework completion. The levels within each goal strand clearly show a logical sequence in which completion of an objective at a lower level leads directly to the next higher objective.

Procedure:

a) At the IEP meeting, priority areas are identified, given a descriptive title, and written in the scale heading boxes as goal area titles. Team discussion about what the team...

a) would like to see the student accomplish, and
b) realistically expects the student to accomplish

will aid the teacher in later writing an objective for each level. The team should determine the time frame for the scales and the starting and ending dates. The most common score date is May, at the end of the program year.

b) Generally the teacher writes the objectives or outcome statements for all levels of the goal scales. The middle box, being the "expected" level, should be written first and then at least one level on each side of the middle box must be completed. In writing the "expected" level, it is important to keep the time span in mind, as

9/1/81 Start Date / 5/20/82 Score Date

Mr. Organized
Teacher

Score / Percentile

GOAL ATTAINMENT SCALE

Sam Troublesome
Student Name

Upper Elementary
School

Anywhere, USA
Town

Fig. 8 Complete Goal Scale for One Student

*Entry Level x Exit Level

SCALE HEADINGS: / LEVELS:	Non-Compliance (weight$_1$ =)	Tolerating Frustration (weight$_2$ =)	Peer Interaction in Social Skills Group (weight$_3$ =)	Homework Completion for Mainstream Classes (rate last quarter of year) (weight$_4$ =)
Most unfavorable outcome thought likely Score = -2	*Complies with 25-49% of directions with constant teacher reminders.	*Reacts to frustration loudly (crying) and physically (pounding desk or ripping worksheets).	*Turns off peers by bragging, bossiness, and "tough guy" act.	*Completes no assignments on time.
Less than expected success Score = -1	Complies with directions 50-74% of time with the use of clear teacher signals and token reinforcement.	Reacts to frustration by refusal (saying "I won't do it.").	Continues bragging, bossiness, and "tough" behavior, but responds to adult reminders to interact more appropriately.	Completes less than ½ of assignments on time.
Expected level of success Score = 0	Complies with directions 75-100% of the time with the use of clear teacher signals and token reinforcement.	Reacts to frustration by verbalizing difficulty to teacher with no loud or physical mannerisms.	Marked reduction in bragging and "tough" behaviors with some cueing from adult.	Completes between ½ to 3/4 of his assignments on time.
More than expected success Score = +1	Complies with directions 75-100% of the time with only the use of clear teacher signals and praise.	Reacts to frustration by verbalizing problem and asking teacher for help.	Appears to modify own "tough" behavior--catches self and changes behavior without adult reminders or prompting.	Completes between 3/4-90% of his assignments.
Most favorable outcome thought likely Score = +2	Complies with directions 90-100% of the time with the use of teacher praise.	Deals with frustration independently using self-help devices and coping skills (e.g. skipping hard problems).	Interacts positively with peers with no display of "tough" act.	Completes all assignments.

Fig. 13. Complete Goal Scale for One Student

predictions for a six-week evaluation program will certainly differ from those for an entire year. The expected level, stated in the middle box, should represent the most realistic prediction of the outcome behavior to be attained, not necessarily all that one hopes will be attained.

The other outcome levels are thought less likely to occur. The "more than expected success" and "most favorable outcome thought likely" levels are guides for program planning in the future and for documenting unusually good student progress. Correct use of the Goal Attainment Scale technique would not find these levels being reached very frequently. Similarly, the "less than expected success" and the "most unfavorable outcome thought likely" should not occur very frequently. These less favorable outcomes balance the picture of possible outcomes, pinpoint children and priority areas needing closer evaluation, and help judge when special needs go beyond the program's capacity to meet them.

When a goal scale is written, only one behavior appears in each box. Including more than one behavior in a box can cause problems with split scoring. It is not necessary that each level be written in a measurable manner, but each must be written clearly enough that two or more persons can agree that the level of behavior has/has not been met.

c) If the student's behavior at the time of contruction of the scale is equivalent to any of the five levels, the entry level should be indicated by placing an asterisk in the corner of the appropriate box. It is not required that the entry level be otherwise documented if the team agrees, but it strengthens the scale's validity when it can be based on test data, rating scales, anecdotal records or observation data.

d) At the indicated score data, two or more persons should confer and score the Goal Scale. It is helpful when scale outcomes can be supported in various ways with tests, rating scales, or process measures. Each scale is marked with an "x" at the appropriate outcome level. The marked Goal Scale will then visually show whether or not the "expected" levels of outcome are reached and whether or not change occurred. This marked Goal Scale form will generally be sufficient for IEP use, as it documents the degree of change on the goals relative to the predictions of change made by the teacher and planning team.

Scoring: Goal Scales can be scored numerically as follows:

-2 = most unfavorable outcome thought likely
-1 = less than expected success
0 = expected level of success
+1 = more than expected success
+2 = most favorable outcome thought likely

A large number of these student scale scores can be used in program evaluation or research by graphing their distribution in various categories of interest. The teacher's use of the individual scale scores would probably only be for record-keeping purposes.

Comments:

1. This evaluation approach was developed for use in mental health programs where it was recognized that many goals in the affective-emotional areas may be difficult to measure quantitatively. Although it is important that the levels be written in as behavioral a style as possible, the beauty of this format is the flexibility offered to establish goals and objectives which are describable and ratable, not necessarily measurable.

2. Several team members can contribute individual scales to one overall Goal Scale for a child, thereby increasing agreement on goals

and expectations across the team. For example, an O.T. may develop scale(s) in self-help skills, the language clinician in communication, the social worker for a home toilet training program, etc.

3. It is advisable that more than one person be involved in writing and scoring the Goal Scale. Generally, a teacher, program supervisor, and parent could share this responsibility and periodically confer on progress and program adjustments. Having a team involved in the process provides a check and balance mechanism to avoid setting expected level statements unrealistically high or low.

Original Source: Kiresuk and Sherman (see bibliography)

For a "Self-Instructional Packet in Learning to Write Goal Attainment Scales" prepared by Fitzgerald, Fleckenstein & McKinnon, 1978, contact:

Gail Fitzgerald
Child Psychiatry Service
The University of Iowa Hospital and Clinics
500 Newton Road
Iowa City, Iowa 52242

2. Analogue Observation. Analogue observation occurs when a teacher observes a behavior in a simulated situation, rather than waiting for the behavior to occur spontaneously in the natural environment. This is a product whereby the new behavior (product) is assessed after-the fact, rather than as it is developing. This technique has been particularly helpful in assessing students' self-control and social interaction skills. To carry out this approach, the teacher sets up a role play situation, or directly establishes a situation in which the student has the opportunity to display the behavior of interest. Analogue observations are often more efficient than observations of naturally

occurring events and provide a more precisely controlled means of assessing responses to specific stimulation. It is relatively easy for the BD teacher to develop pairs of similar role play situations, or to systematically trigger a classroom situation, or set up a game, so that the child's responses can be observed and rated on a pre/post basis.

Analogue observations are based on the assumption that behavior in a simulated setting is quite similar to that occurring in a natural setting. Although most published studies have shown that this type of evaluation is sensitive to the effects of behavioral intervention with students, some limitations should be kept in mind. There is no guarantee that the behavior observed in analogue will generalize to other times and settings. The observed behaviors may not be the "real" ones. Some behaviors are easily elicited in contrived situations; others may not easily be triggered in a situation which is not natural and is more public. The behavior displayed may be reactive, or influenced by the group make-up or by obtrusiveness of the observation procedure, e.g. video-taping. Even where pre/post differences are documented, the findings can only be interpreted in respect to criteria established by the teacher.

In response to these limitations, teachers can use several guidelines to make analogue observations more valid. First, the teacher should make the analogue situation as similar to the natural environment as possible. Even though simulated, most social interaction situations can be "staged" in informal settings such as recess,

a class party, or the lunchroom. Second, the teacher should try to hold as many environmental factors constant as possible by using the same members of the peer group, the same game, or the same type of emotional content or subject matter in role plays. Third, after using analogue observation on a pre/post intervention basis, the teacher should carry out comparable checks in other settings and at later times. A good rule of thumb would be to do the analogue observation pre, post, and in at least one other setting or one follow-up time in the same setting.

The examples which follow illustrate analogue observations of self-control techniques game-playing skills. The rating forms used with the observations are simple devices which teachers can easily design by "thinking through" a situation. The two examples could be carried out as frequently as desired. To use this information to document IEP objectives, the teacher could describe progress in a number of ways: a) pre/post frequency of positive behaviors; b) response to various types or levels of precipitating events; c) level of positive behaviors in various settings; or d) maintenance of positive behaviors at follow-up checks after direct teaching or reinforcement have ended.

Example 1. Self-Control Monitoring

Much work is done with BD children to get them to practice self-control when faced with teasing, fighting, and frustration. The Turtle Technique is a program for teaching children to use self-control procedures similar to a turtle who is adept at: a) withdrawing into his shell when he feels threatened, b) using muscle relaxation to reduce the tendency to strike out, and c) using problem solving as an approach to handling the difficult situation. After children have learned and practiced the technique on cue from the teacher, generalization training is provided by having the teacher and "confederate" peer attempt to provoke others as a way to get them to use turtle responses. There are several stages at which analogue recording is desirable: initial learning, end-of-practice phase, generalization training, and follow-up. The teacher could monitor a child's use of the technique in simulated as well as in natural situations by filling out a 3 x 5 note card report as seen in Figure 14. A file of these can be kept and used to set up a simulation if needed, in addition to monitoring natural occurrences.[1]

[1]Schneider, M., and Robin, A. Turtle Manual. Stony Brook: Psychology Department, 1974.

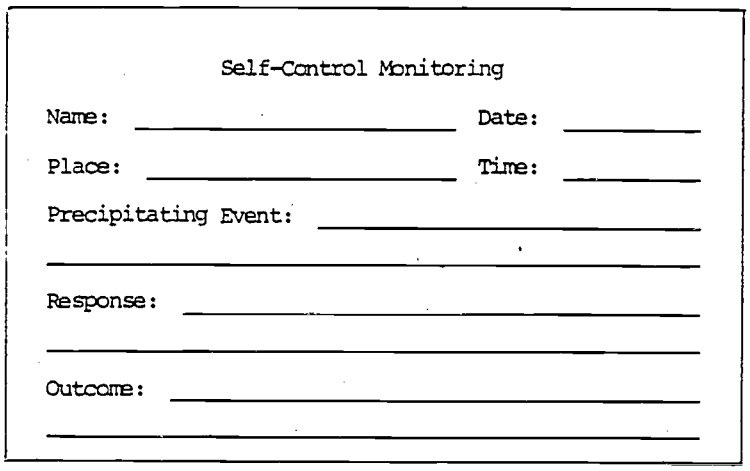


Fig. 14. Teacher Monitoring of Self-Control Procedures

Example 2. Observation Questionnaire

Checklists and questionnaires are easy to devise and use in analogue observations. Teachers can write their own items or use items from prepared program checklists. Whatever the item source, wording should be checked to make sure observable terms are used; concrete behaviors can be more reliably rated. An observation questionnaire can be completed while the activity is in process if an outside rater, such as the teacher aide, is present to do so. Generally a delayed report can be reliably filled out immediately following the activity, if the observation period is kept relatively short, perhaps ten to fifteen minutes long.

Using a short observation period is important in delayed recording because it reduces memory confusion and subjective interpretation. It is important that students not realize they are being

SOCIAL SKILLS OBSERVATION

Directions: Fill out this questionnaire after you have observed game playing for 10 minutes. Fill out a different questionnaire for every 10 minutes observed.

Student _____ Date _____

Game peers _____

Game _____ Class _____

Observer _____ Time _____

0 = this did not occur during the time of observation
1 = this happened once
+ = this happened more than once
* = this happened consistently

1.	Student takes turns in sequence.	0	1	+	*
2.	Student handles game materials properly.	0	1	+	*
3.	Student explains rule or move to peer.	0	1	+	*
4.	Student takes suggestion from peer.	0	1	+	*
5.	Student accepts a "ruling" without argument.	0	1	+	*
6.	Student gives peers encouragement.	0	1	+	*
7.	Student accepts outcome without bragging or complaining.	0	1	+	*
8.	Student helps pick up game.	0	1	+	*
	etc.				

Fig. 15. Teacher-Made Analogue Observation Rating Form

rated. While video and audio taping seems to be an appealing idea, it is unlikely the student responses will be totally natural if they have knowledge of the taping.

An example of a teacher-made questionnaire is seen in Figure 15 which could be used in a delayed report of game skills.

3. Archival Records. Within the regular school system, data is systematically gathered which can be used to measure student progress. Most common records include attendance rates, tardiness, class cuts, grades, disciplinary action reports, and parent contacts. Depending on the creativity of the teacher, other indices for change may be found all around the environment--marks on a desk top, number of torn workbook pages, accidents on the playground, teacher complaints, teacher sign-out sheets for special education materials, student library records, physical education skills checklists--just waiting to be used to show change in behavioral/affective areas.

Abstracting information from these records may be time-consuming, but they have a great advantage in yielding credible information because they provide evidence of events as they occur, rather than after-the-fact. The records are products, but they were generated on an on-going basis. Data from these type of records usually can be graphed on a frequency-across-time format and related back to student objectives.

Example 1. Class Attendance Rates

School offices generally maintain lists of reported absences period-by-period for each day. Compiling and graphing this information daily would likely get monotonous and too detailed to display major patterns of change. It would be much more impressive to compare such data on a month-by-month basis as seen in the following graph where the levels of change are dramatic.

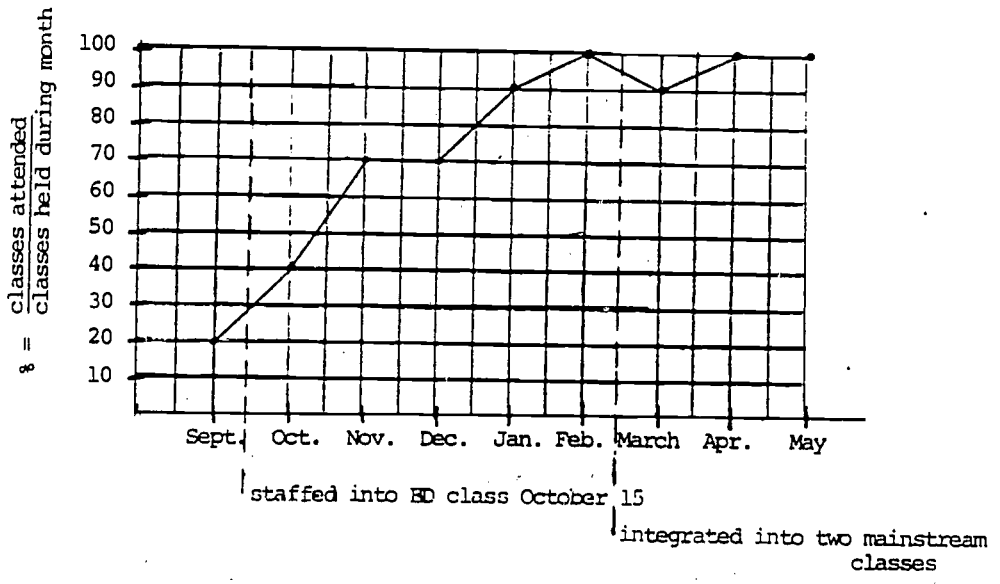


Fig. 16. Graphing of Class Attendance Data

Example 2. Behavior Card File

Sometimes programs can be set up so records are automatically built into the program structure. An example is the CARE Program in Sioux City, Iowa, first implemented by Delia Sorathia, and later revised and described by Lynn Johnson. The program is basically a token economy for secondary BD students which teaches students responsibility for their own behavior. The record-keeping system is totally integrated into the program's operation.

Whenever a student in CARE displays an unacceptable behavior, the student earns a Behavior Card. On this card is written, in a positive manner, the behavior that is expected of the student. An example is to "walk on the floor" versus "do not walk on the desks". The format for the cards is as such:

BEHAVIOR CARD

Name: _____

Date Earned: _____ Date Completed: _____

Behavior:

Trials: _____

Date/Initials: _____ _____ _____

Fig. 17. Behavior Card

Each student's behavior card goes into a file under his/her name. When the student arrives at school, he/she chooses his/her behavior card to concentrate on for the full day. Most students select one or two cards each day. Throughout the day, the student is awarded points for accomplishing the stated behavior. If the appropriate behavior continues throughout the entire day, the card is initialed, dated and additional reinforcement is provided through the token system. Each day the student has not been successful is noted on the "trials" line. After the card has been initialed three times, the teacher removes the card from the student's active file. If the behavior ever reccurs, a new card stating the same behavior is placed in the student's file. Each day the number of Behavior Cards a student has are counted, and that number is plotted on a graph. This provides an ongoing representation of progress for the student. Every five days the number of completed cards is recorded on a graph as a second progress record.

Although this system includes other record-keeping components in other program areas, the behavior recording system seems strikingly easy to implement and maintain over time. At the end of the program's duration, the teacher can compile information on number and repetitions of behavioral difficulties, duration, and time lapse in successfully completing the cards. Also important would be any notes of documentation made on the reverse side, such as mainstream teacher comments. The graphs serve as excellent process measures of ongoing progress.

Process Measures

Process measures are designed to describe the course of change and are the measures most frequently thought of in documenting progress on IEP objectives. There are many variations of these measures, but the major types include: frequency counts, duration recording, point system graphs, self-ratings, and systematic observation. Process measures play different roles than pre/post or product measures. Because objectives in a program change frequently, process measures are used to measure shorter-term progress, to show whether progress is directly related to an intervention, and to provide systematic feedback to help the teacher make necessary adjustments in intervention efforts. Process measures nicely complement global pre/post and product measurements; they serve to cross check or back-up the data and to more sequentially describe the child's progress.

Process measures are primarily completed on a "document-as-you-go" basis, where the problem defines the method used. The teacher needs to have a large repertoire of process measurement skills and to be adept at integrating them into his/her teaching and management structure. A useful analogy would be to compare the gathering of process data to that of building a student file in general education classes--into that file go examples of student work, teacher comments, criterion-test scores, achievement graphs, and notes from parents and teachers. Likewise, for the BD student, the teacher needs to build a file of evidence of progress over time, but instead of it being a

learning file, it needs to be a behavior file.

Although the analogy makes the task sound simple, it is often difficult to accomplish in the behavioral/affective areas. The setting-up, recording, and compiling of behavioral data can be extremely time-consuming. In classrooms where aides, volunteers, older students, or the children themselves can assist, the teacher should be able to arrange instruction and people in ways to gather some information some of the time. The process measurement procedures selected by the teacher will probably change from month-to-month in response to needs and program structure. It should be a creative and flexible process; unless the teacher chooses to use a given method over the entire program's duration, he/she should not feel committed to implementing a procedure just to gather data when it no longer is useful programmatically.

Anecdotal records will not be discussed in this chapter as a measurement device. Typically, anecdotal records are very subjective and unsystematic. While the teacher may feel it's useful to record impressions of the student and significant happenings anecdotally, they do not substantiate progress in any credible manner. Anecdotal records do help keep track of the events of the year and could be used, just as the teacher's plan book, to link together the sequence of events, as timing of interventions, and the gathering of progress information.

Haskell[2] reports an alternative method of writing brief behavioral

[2]Haskell, S. A time-reference Q-sort technique for evaluating behavioral change. American Journal Orthopsychiatry, 1979, 49 (1), 109-120.

descriptions of students periodically instead of anecdotal records. These behavior descriptions, written on index cards, are then given to a panel of judges to make Q-sort ratings. The ratings generate scores which then can be used to measure adjustment in relation to time. This approach to using anecdotal records may be promising in the future; however, at this point, further practical work is needed with the method.

Most of the examples described in this section can be implemented by the sufficiently organized teacher. The teacher should keep the following guidelines in mind when designing process measurement procedures to improve the quality of the yielded information:

1. Be realistic: Do not try to gather data on all the students at the same time. Focus on one or two students during critical moments of the day; use a sampling strategy; or use the same basic system for several students at a time. Think through the day--make sure time or help is available not only to gather, but also to compile the information.
2. Be systematic: After specifying what data to gather, figure out a routine for getting it. Information collected haphazardly is rarely representative--it only reflects the action of the day when activities go as planned. Less data collected on a fair, representational schedule will be more accurate and useful.
3. Pre-plan: Keep the long-range plan for each child in mind. Determine when and where the big pushes for behavioral/affective change will come. Have the time and the measurement system ready when the student is ready, so the total cycle of change can be documented.
4. Be objective: Focus on overt behavior that is measurable or describable. Keep subjective judgments out of the data file, or at best, note them on the reverse side of forms where they won't cloud an objective review. Follow the plan as established; do not change the rules or the schedule so that the "wonderful deed" or "convincing evidence" gets recorded just because it caught the rater's attention; if necessary, record its happening elsewhere.

5. Build the procedure into the lesson plan book: Don't rely on memory; when a commitment is made to gather data, write it on a file card and clip it into the plan book. Most of the work is completed once the procedure and strategy are decided--so carry it out. Set up a charting system for yourself--check it off and give yourself a pat on the back! "Good recording."

1. Point System Procedures. The accumulation of points for positive behavior is likely to be the most frequent type of data currently generated in BD programs. Points are given in many forms--tallies, tokens and ratings. They are relatively easy to hand out or record while activities are in process. The measurement questions confronting teachers in running point systems are determining...

a) the definition of a behavior equivalent to a point,
b) the most efficient method for dispensing points,
c) the data recording format, and
d) a method to compile and interpret the points on a unit-of-time basis.

The teacher can be innovative in specifying the answers to these questions as long as points can be given and recorded reliably, the system is convenient, it easily displays progress in an understandable way, and the results can be related back to questions about behavioral/affective improvement. The following examples illustrate a variety of process measurements based on point systems.

Example 1. Frequency Counts

To use this method, the teacher counts the number of times the behavior, as it has been defined, occurs in a block of time. The frequency method should be used when the behavior occurs at a rate low enough to be counted reliably, and when it is easy to pinpoint the beginning and ending of each behavior. Frequency count systems require

that someone (teacher, aide, student observer) keep continuous attention on the target student(s) during the specified block of time. Ingenious teachers have learned to deposit tokens in cups, tear notches in a card tied on a string around his/her neck, hand out raffle tokens, use golf counters, or make marks on a masking tape bracelet to increase mobility during observation periods. If frequency count systems are kept simple, multiple behaviors for one child can be recorded (Figure 18), the same behavior for several children can be tallied (Figure 19), and one to three behaviors for a whole class of students can be compiled as in the example in Figure 20 designed for an aide to watch during the seatwork period.

Effective Discussion Skills

Student: _____
Skill: _____
Date: _____ Time _____ to _____ (total min.)

Raises hand to ask questions	Makes appropriate class contribution	Looks toward speaking classmate
///	//	𝍸 𝍸

Fig. 18. Recording Several Behaviors for One Student

Asking for Game Card in Turn

Task: _____
Date: _____ Time _____ to _____ (_____ min.)

Tom	Eve	Kent	Amy	Sally	Ben
𝍸	////	//	𝍸	////	𝍸

Fig. 19. Recording One Behavior for Several Students

Date: _____ Activity: (seatwork)

Time: to (min.)

Sam x x	Amanda x o x	Pete o /	Leon x /	Ruth	Kelly o
Tom	Eve x x	Kent x x	Amy	Sally / / / / /	Ben
Lori o x	Janet x x	Al x x	Molly	Mary	Beth /
Hank / /	Betty	Lennie / o	Luke	Mark o o	Debbie

Code

x talks out
o gets out of seat
/ asks for help

Fig. 20 Group Recording Using a Room Seating Chart

Frequency data is usually graphed either in raw total, e.g., total number of fights in a day, rate of behavior. To figure the rate of behavior, use this formula:

$$\text{rate} = \frac{\text{frequency of behavior}}{\text{units of time}} \quad \text{i.e.,} \quad \frac{5 \text{ behaviors}}{20 \text{ minutes}} = \frac{2.5}{\text{per min.}}$$

Rate provides an index score which can be used comparatively even though lengths of observation vary. In Figure 20 example, Sally's rate of asking questions for help would be 1.0 for 5 minutes or .25 for 20 minutes. Rates can be graphed in the same manner as raw frequency data are, if the vertical axis is labeled frequency per unit of time as in Figure 21. Graphed data is usually given the "eyeball" test to decide: a) if change has occurred, and b) if

that change appears to relate to interventions.

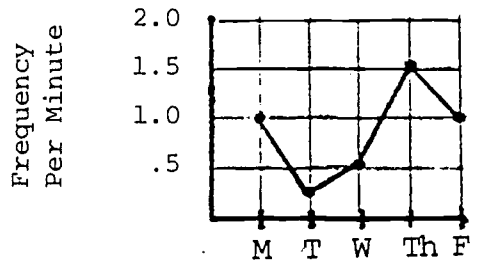


Fig. 21 Rate of Asking For Help

There are times when change is occurring so rapidly that the teacher will want the daily frequency data graphed; but at other times a general pattern of change may be made more evident by graphing grouped data. Data totaled or averaged, on a weekly basis for example, would be less sensitive to daily fluctuations. After graphing the grouped data, trend lines can be drawn and compared to see if there is a probable change due to the program intervention as seen in Figure 22. Trend lines are done by drawing a best guess line that is straight but passes as close to each data point as possible of the before section of the graph. This trend line is then extended into the after region of the graph and compared to the actual after data points.[3]

[3]For more information on this approach, see Fitz-Gibbon & Morris.

Fitz-Gibbon, C. and Morris, L. How to Design a Program Evaluation. Beverly Hills: Sage Publications, 1978.

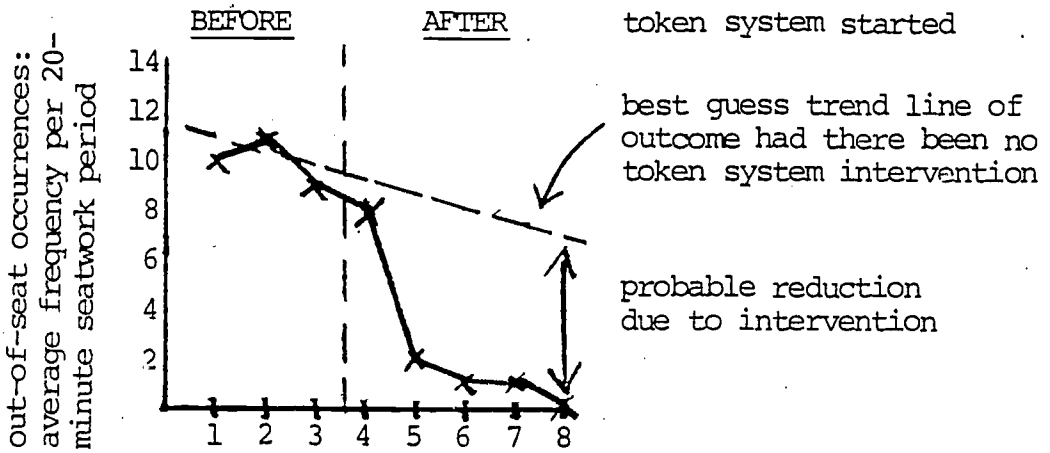


Fig. 22 Use of Trend Line Projection to Evaluate Change in Frequency Data

Example 2. Token Economy System Data

A variation of point systems is a token economy in which students who display desired behaviors receive points or tokens to be cashed in for privileges. Token economies are systematically designed and carried out, making them logical methods to generate data useful in evaluating student progress. All too often, however, teachers do an excellent job in running a token economy program, but fail to systematically record and use its data.

There is a basic difference in the way data is generated in token economies compared to frequency counts of behavior. The difference is caused by logistical factors, because in the token economy several behaviors are focused on simultaneously for groups of students.

In token economies, points are allowed for displaying chunks of behavior over longer periods of time rather than for each individual behavior. Practically speaking, the points are given according to teacher ratings of a) whether or not the desired behavior was displayed and b) the degree to which the teacher judged the behavior to be adequate.

Many BD teachers have designed point cards for students similar to the one seen in Figure 23. The card is a simple collection device to record points over time until sufficient numbers are earned and converted into reinforcement activities. By listing what the points were used for, it also provides a record of reinforcers.

Name Kent Date 10/18/81

	Stays in Area	Works Quietly	Asks for Help	Completes Work
9:00-9:15	x	x	x	x
9:15-9:30	x		x	
10:00-10:15			x	x
10:15-10:30	x	x		x
12:00-12:15			x	
Totals	3	2	4	3

Carry-Over	Earned Today	Used Today for	Carry-Forward
10	12	- 20	+ 2

Fig. 23 Sample Point Card

Periodically, the teacher charts points on a progress graph which provides students with a visual display of progress and helps teachers see trends, progress and need for program changes. Teachers should also file the cards for later use descriptively, as student progress can always be documented later from this new data. There is no one best way to compile such data, but a first strategy is to look at the student's objectives and fit some characteristic of the data to the objectives. The same data characteristic does not need to be used indefinitely--the graphing process should be short-term and flexible to meet specific purposes. Two examples are provided in Figures 24 and 25 of the types of graphing possible from the data gathered over time from the point card to the illustration. (See page 59.)

One system for student communication and feedback with students in comprehensive BD programs is the STAR sheet, an adaptable form with space for rating social behavior and academic work of each student on 0-4 point scales in each class or major activity period of the day. (See page 60.) The report sheet can be modified to reflect the needs of particular students in particular settings; target behaviors can be specified by different teachers and adapted as the student progresses. A language arts teacher may require a student to listen cooperatively to others and participate in discussions in order to receive a "good" rating, while the BD teacher expects the student to show self-control and independent work habits to earn a "good" or "excellent". The form

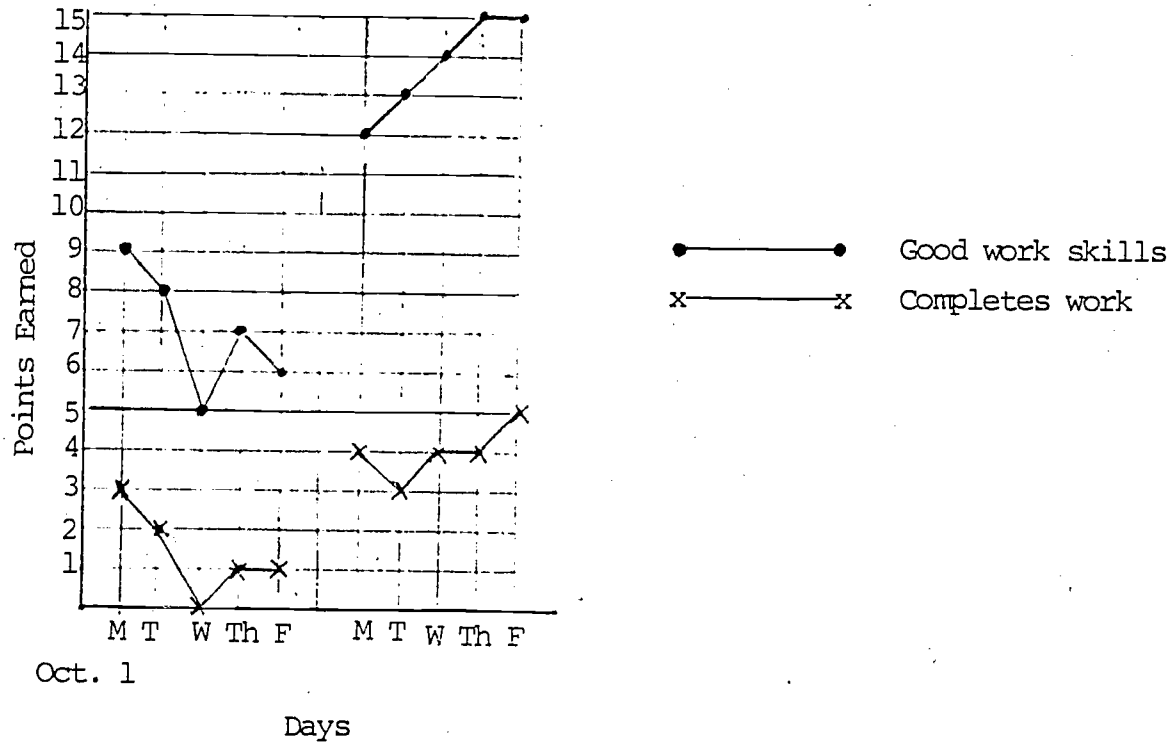


Fig. 24 Seatwork Behavior

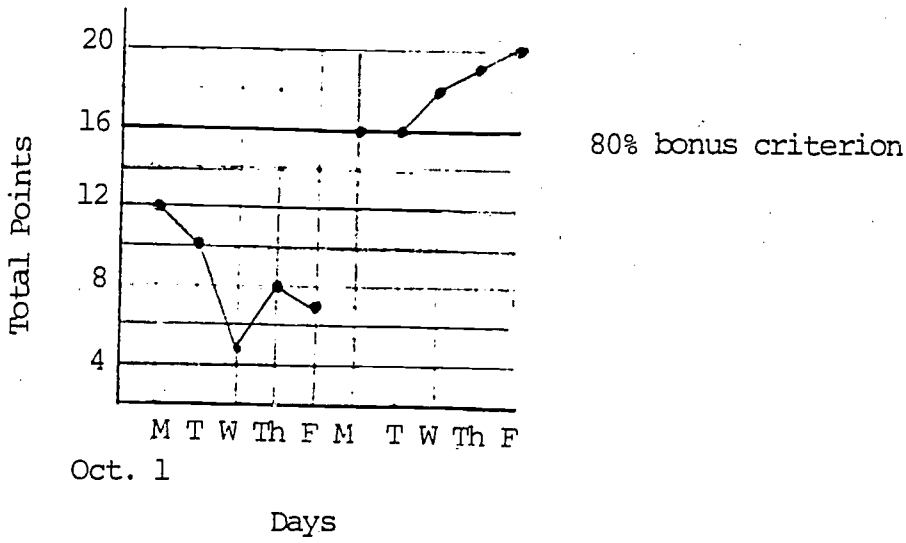
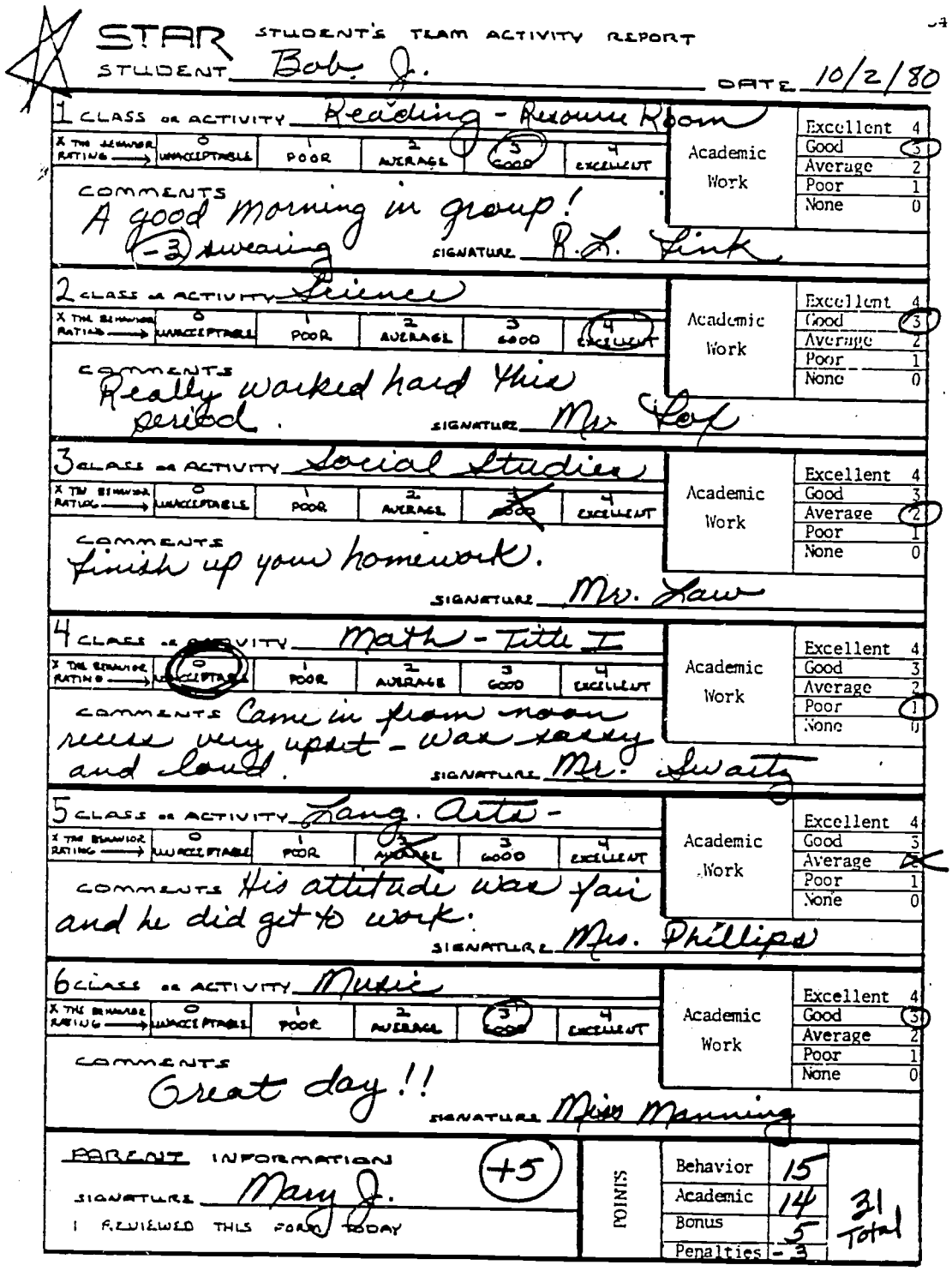


Fig. 25 Good Worker Points



STAR STUDENT'S TEAM ACTIVITY REPORT

STUDENT Bob J. DATE 10/2/80

1 CLASS or ACTIVITY Reading - Resource Room

X THE BEHAVIOR RATING → 0 UNACCEPTABLE | 1 POOR | 2 AVERAGE | (3) GOOD | 4 EXCELLENT

COMMENTS A good morning in group! (-2) swearing

SIGNATURE R. L. Link

Academic Work: Excellent 4 | Good (3) | Average 2 | Poor 1 | None 0

2 CLASS or ACTIVITY Science

X THE BEHAVIOR RATING → 0 UNACCEPTABLE | 1 POOR | 2 AVERAGE | 3 GOOD | (4) EXCELLENT

COMMENTS Really worked hard this period.

SIGNATURE Mr Lof

Academic Work: Excellent 4 | (Good 3) | Average 2 | Poor 1 | None 0

3 CLASS or ACTIVITY Social Studies

X THE BEHAVIOR RATING → 0 UNACCEPTABLE | 1 POOR | 2 AVERAGE | 3 GOOD | 4 EXCELLENT

COMMENTS Finish up your homework.

SIGNATURE Mr. Law

Academic Work: Excellent 4 | Good 3 | (Average 2) | Poor 1 | None 0

4 CLASS or ACTIVITY Math - Title I

X THE BEHAVIOR RATING → (0) UNACCEPTABLE | 1 POOR | 2 AVERAGE | 3 GOOD | 4 EXCELLENT

COMMENTS Came in from noon recess very upset - was sassy and loud.

SIGNATURE Mr. Swartz

Academic Work: Excellent 4 | Good 3 | Average 2 | (Poor 1) | None 0

5 CLASS or ACTIVITY Lang. Arts -

X THE BEHAVIOR RATING → 0 UNACCEPTABLE | 1 POOR | (3) NORMAL | 3 GOOD | 4 EXCELLENT

COMMENTS His attitude was fair and he did get to work.

SIGNATURE Mrs. Phillips

Academic Work: Excellent 4 | Good 3 | Average 2 | Poor 1 | None 0

6 CLASS or ACTIVITY Music

X THE BEHAVIOR RATING → 0 UNACCEPTABLE | 1 POOR | 2 AVERAGE | (3) GOOD | 4 EXCELLENT

COMMENTS Great day!!

SIGNATURE Miss Manning

Academic Work: Excellent 4 | (Good 3) | Average 2 | Poor 1 | None 0

PARENT INFORMATION (+5)

SIGNATURE Mary J.

I REVIEWED THIS FORM TODAY

POINTS: Behavior 15 | Academic 14 | Bonus 5 | Penalties -3 | 31 Total

Fig. 26 STAR-Sheet Form

can be tailor-made for younger children with behaviors spelled out on the sheet for checking, as-----

listens to directions	begins task	works by self	finishes task

The important requirement is that teachers clarify for students precisely what is meant by "unacceptable", "poor", "average", "good", and "excellent". The comment section of the form should be used to clarify the reasons for the rating in as positive a manner as possible.

In a typical STAR sheet system, each student carries the form from class to class and is responsible for getting teacher ratings at the end of each class. This provides direct, immediate communication with the student about his/her behavior. This communication process is completed by having the parent review and make positive comments about the ratings at night, and by having the student return the form to the BD teacher the next day. It takes only about ten to fifteen minutes a day for the teacher to transfer points to a data sheet, which can be designed similar to Figure 27. At the end of each week, all points can be totaled for use in a reinforcement system and behavior can be averaged and graphed in various ways. (See page 62.)

As time goes by, some students can shift away from using the STAR sheet as an external control system, into using it as a self-management procedure. Since the entire system and format are so flexible, a STAR program can be used as the basic data-generating device in a

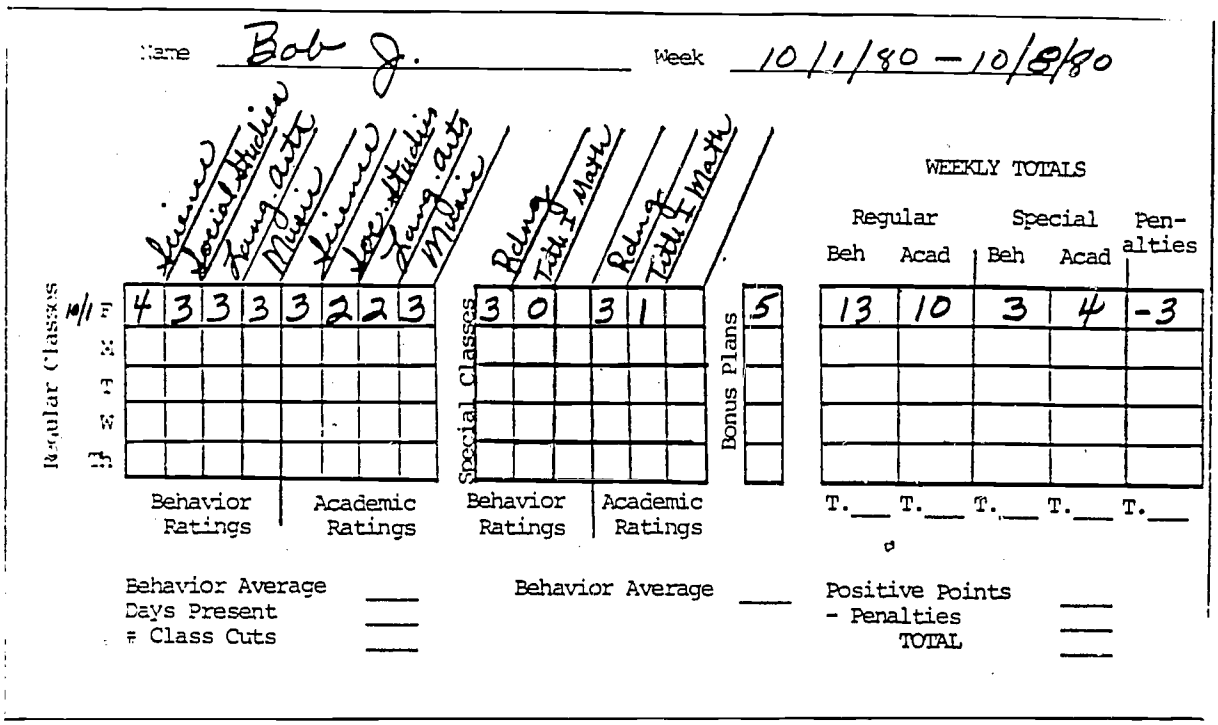


Fig. 27 Data Transfer Sheet

program and carried on indefinitely. Since behavior ratings are continually redefined as time goes by, the data should not be considered as absolute. In general, the data does reflect a student's progress and adjustment. When STAR sheets are kept on file over the course of a semester or year, the teacher is able to reconstruct any phase of the child's program, using data as documentation and linking progress to interventions and significant events. An interesting way to graph STAR sheet data is to separately average behavior ratings in the major program components, such as mainstream classes and BD program classes. By graphing component averages on the same graph, comparisons of relative

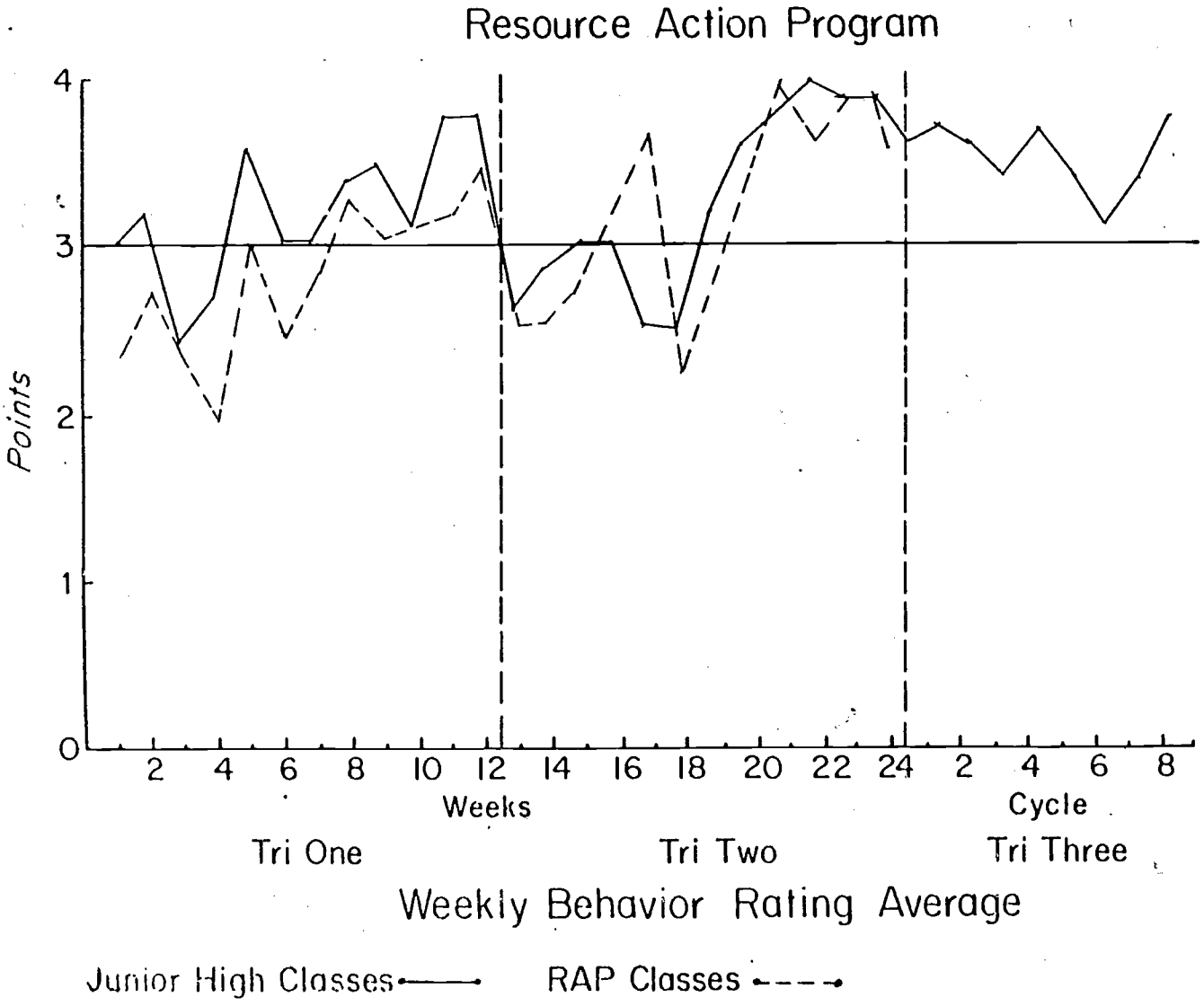


Fig. 28 Weekly Behavior Rating Average

progress are easily discernible as seen in Figure 28.[4]

Example 3. Self-Monitoring Procedures

There are many simple ways students can observe and record their own behavior. In addition to the therapeutic benefits for students when they are more aware and responsible for their own conduct, the data can be used by teachers to supplement their own observations as "indicators of progress". Teachers save time and increase flexibility when students carry out the data-recording process independently. Another advantage in using this approach is that self-recording may be the only way to get measures of a student's thinking or feeling states which cannot be directly observed. Thus, these procedures are frequently used for recording thoughts, such as angry thoughts about a person or self-encouraging thoughts, and for recording feelings, such as cravings for foods or panic states. It is not necessary that target behaviors, thoughts or feelings occur frequently; this technique is useful for charting low frequency behaviors which would require the teacher to observe continuously over a long period of time in order to note it.

There is a disadvantage, however. Data students keep on themselves may not be totally accurate. There are ways to reduce this problem. First, the student needs to be properly motivated and invested

[4]For additional "how-to" materials on the STAR sheet system, contact Al Marshall, Child Psychiatry Service, 500 Newton Rd., Iowa City, Iowa 52242.

in using self-monitoring procedures. Secondly, the teacher must teach the student the procedure. Third, after turning the data recording over to the student, the teacher needs to periodically check the student's accuracy and discuss any differences with the student. Fourth, if reinforcement contingencies are linked to the self-monitoring procedure, it is sometimes possible to reward "good self-recording" as opposed to basing the reward on frequencies or ratings of the target behavior. This makes it easier for the student to be honest. When this is not possible, the teacher might offer a bonus reinforcement when self-ratings agree with the teacher's ratings.

Students typically use one of two forms of self-monitoring: rating own behavior or doing frequency counts. When doing frequency counts, both student and teacher agree on a clear definition of what a whole behavior is--the cycle from start to end. When doing ratings, both must understand and agree on the qualitative standards for judging the behavior. Actual recording devices can vary: point cards, masking tape, wristbands, golf counters, and stopwatches are all easy for youngsters to use. Data from these collection devices can be graphed, charted, or filed for use in measuring progress on student objectives.

One ingenious self-recording device is called a countoon and described by Kunzlemann.[5] A countoon is a "cartoon that counts" and

[5]Kunzlemann, H., Cohen, M., Hulten., Martin, G., and Mingo, A. Precision Teaching. Seattle: Special Child Publications, 1970, 106-131.

is drawn with stick figures to portray a child's behavior cycle. A complete countoon is drawn with three basic components illustrated:

1. A picture sequence illustrating What I do;
2. A numerical grid to record My count;
3. A picture illustrating a What happens outcome.

The following example is a countoon for a student recording successful use of the Turtle technique (as described previously in Analogue Observation - Example 1). This countoon is set up for a week's use with the reinforcement system being free time in the gym.

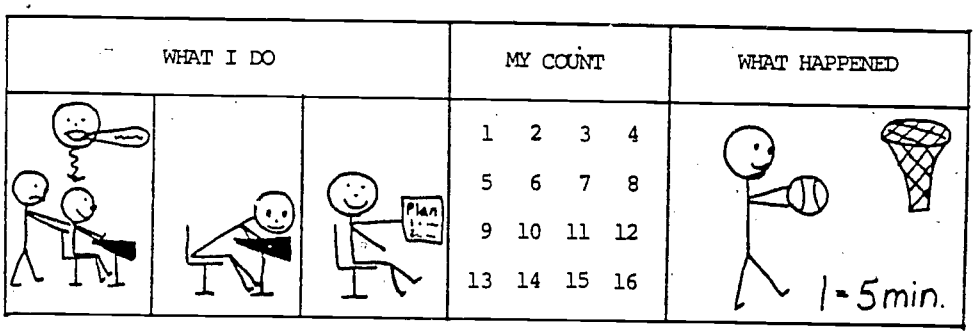


Fig. 29 Countoon Self-Monitoring Procedure for Turtle Technique

In the following example, the BD student used a point card for making self-ratings in both academics and behavioral areas. During the early stages of the program, the point card was folded in half to clearly separate assignment completion from behavior ratings. Both student and teacher completed the card until the student could make valid judgments of his/her own behavior. Later, the point cards were modified in a number of ways--more behaviors were added, the

time units were increased, and the student completed the self-monitoring independently. The example in Figure 30 is a sample of an early phase point card; Figure 31 shows just the right hand portion of a point card used in the final phase.[6]

The data resulting from this series of point cards were very useful for documenting the student's ability to meet increased behavioral expectations. There are many different types of objectives which could be documented by the data in this example, including but limited to the following:

increasing work completion rate

increasing percent of time the student works hard

increasing percent of time the student keeps hands to self

applying self-monitoring procedures to new target behaviors

lengthening the period of time student can maintain own behavior by self-monitoring without needing teacher checks for reinforcement

monitoring own behavior with high agreement level with teacher as program fades from joint to independent self-ratings

transferring the learned self-monitoring skills to a new type of class (social skills group class)

maintaining levels of positive behaviors when reinforcement schedule shifted to weekly rather than daily basis.

[6]Green, M. Systematic use of student-monitoring procedures to measure progress on IEP objectives. Unpublished paper, Child Psychiatry Service, 1981.

Date Vicki 9/15/81 Academic Assignments x = complete		Behavior Tasks o = yes x = no	1. Hard work 2. Hands to self 3. Nice talk
Reading 9:00 - 9:45			
New Story! pp. 43-48	✓	9:00 - 9:15	(1) (2) (3)
Workpages - p. 11	✓	9:15 - 9:30	(1) 2 (3)
p. 12	✓	9:30 - 9:45	1 2 (3)
p. 13	—		
Word cards with partner	—		
Spelling 9:45 - 10:00			
Copy word list	✓	9:45 - 10:00	(1) (2) (3)
Choose 5 words to use in sentence	✓		
Math 10:00 - 10:40			
Play "I win" subtraction with Terry & Ann	✓	10:00 - 10:15	(1) (2) 3
Worksheet (+ and -)	✓	10:15 - 10:30	(1) (2) 3
		10:30 - 10:40	(1) (2) (3)
How many completed assignments? 7		How many behavior tasks done? 16	

Fig. 30 Beginning Phase of a Self-Monitoring Procedure

Behavior Tasks o = yes x = no		1. Hard work 2. Neat work 3. Accurate work 4. Good listening *5. Trying something new	
9:00 - 9:45	Reading	(1) (2) (3) (4)	
*9:45 - 10:00	Spelling	(1) (2) (3) 4	(5)
*10:00 - 10:40	Math	(1) (2) (3) (4)	5
10:40 - 11:00	Writing	(1) (2) (3) 4	
*11:00 - 11:30	Social Skills	1	(4) (5)
How many behavior tasks done? 17			

Fig. 31 Final Phase of a Self-Monitoring Procedure

It should be clear that there is a great deal of potential in using simple self-ratings in documenting progress on student objectives if the teacher is creative and organized!

2. Systematic Observation Procedures. Systematic observation procedures have been highly recommended during the last decade for the measurement of behavior in naturalistic settings. While many of the proposed observation systems have worked well for consultants and psychologists who do not have to teach and observe simultaneously, teachers have found it more difficult to implement these methods. Recognizing these procedures may be beyond what a teacher can do while teaching a class of youngsters, this author hopes that BD teachers will become more familiar with the techniques and their benefits, and that they will create opportunities to try systematic observations to the extent possible.

There have been other examples of observation methods described in this chapter: 1) the check-charting process used with the VORT Behavioral Characteristics Progression, 2) the use of delayed observation questionnaires with analogue observations, and 3) various examples of frequency counts. These certainly can be "systematic", but what is referred to in this section are observation procedures involving the use of a code for describing behavior and the recording of behavior in short intervals of time within completely natural situations. Many BD professionals believe that systematic observation is the best way to gather unbiased information--a code controls what we

look for and how we label it, and the time-sampling procedure of coding within pre-set intervals controls how our attention is focused. Frank Wood has written that "observation systems are the spectacles which help us see better how others are behaving", and this analogy serves to remind us that our own professional orientations do influence our describing, measuring, and judging of student progress.[7]

Systematic observation procedures generally require that the observer pay total attention to the situation. These observations can be used while aides teach, by aides while teachers teach, during independent work periods, or in mainstream classes while the BD teacher observes. Kubany[8] has suggested that teachers can implement time-sampling observation by setting a kitchen timer to go off on 4, 8, or 16-minute intervals. When the bell rings, it signals the teacher to code behavior, reset the timer, and continue teaching. The feasibility of this kitchen timer method seems questionable--it may be very disruptive and cue students to change their behavior "at the bell".

There are a number of different ways systematic classroom observations can be conducted. Many are quite easy to do once demonstrated and practiced. Consultants or psychologists may be available to help

[7]Wood, F. and Brazil, N. Looking for the good and bad in "problem" children. Unpublished paper, University of Minnesota, 1979.

[8]Kubany, E. and Sloggett, B. Coding procedures for teachers. Journal of Applied Behavior Analysis, 1973, 6 (2), 339-344.

the teacher set up and try out a simple system. Even with help, the BD teacher needs to progress through a logical sequence of steps in implementing an observation procedure.

Step 1: Decide who to observe.

a) The single target child may be the sole focus of the observation if only his/her behavior is of interest for the purpose of the observation. This might be true when a teacher is measuring progress on IEP objectives without wanting comparative data on other students in the class.

b) Sometimes one or two cohorts (other students) are observed simultaneously with the target child. In this case, cohorts may be selected to represent the range of acceptable behavior in the class by having the teacher identify a "good" peer and the minimally acceptable "poor" peer. Information on all three children helps the teacher interpret the adequacy level of the target child's behavior.

c) The behavior of the entire peer group can also be sampled by sequentially coding peer behavior in alternate intervals with the target child. Thus, on a 5-second interval system, the sequence for observation would be:

5-sec.	5-sec.	5-sec.	5-sec.	5-sec.	5-sec.	5-sec.
target child	peer #1	target child	peer #2	target child	peer #3	etc.

At the end of the observation, half the data will be on the target child, and the other half on the "composite peer". Peer data can help teachers interpret the severity of the behavior of the target child. Peer data can also be used to establish what the "norm" of behavior is in a particular class at a given time. The norm level can then be considered when specifying the criterion for desired change in a student's IEP objective. It does not make sense, for example, to expect the BD child to be on-task 90% of the time if the average level in his/her regular class is 75%, and that level is acceptable to the general education teacher.

Step 2: Develop or select an observation code.

a) Specific behaviors may be targeted to measure objectives unique to different students. Teachers often are interested in tracking a few specific behaviors, such as temper tantrums or social initiations. Each behavior can be coded simply as "+" it occurred or "-" it didn't.

b) More comprehensive codes are usually used in systematic observations, whereby a pre-defined code is used for all students consistently. When using such a code, the observer is limited to the behavior variables defined in the code and must "fit" the student's behavior into one of the available categories. There are over two hundred codes described in the literature, and teachers can easily adapt a number of codes for their own use. The simple codes in

Examples 1 and 2 would be good starting codes until the teacher has a better idea of the categories of behavior he/she wants to focus upon. There are many advantages to using comprehensive codes--they are standardized and can be used to gather data for comparisons across students, situations, and time.

Step 3: Select the situations you want to observe.

a) For the purpose of getting a representative sample of behavior, a variety of situations must be observed. At a minimum, these should include a seatwork period, a small group academic class, a large group class, and a relatively less structured situation such as lunch, recess, or free time.

b) For the purpose of monitoring a student in specific situations relating to IEP objectives, the most problematic period of the day can be observed. It is not necessary that long or daily observations be made, but that those critical periods be observed on a sampling basis, such as one ten minute session on a different day each week.

Step 4: Determine the length of time for each interval of observation.

a) Most systematic codes use a 6-second or 10-second interval for observing and recording. This may seem to be an extremely short time interval. It is better, though, to use as short an interval as possible; the longer the time interval, the more likely it is that

multiple behaviors will occur. When multiple behaviors occur, the teacher is forced to pick the "one most salient" for coding, or the one occurring at the end of the time interval.

b) Some method must be found to keep track of intervals of time. There is a "beeper" clipboard sold which is useful for timing and cueing the observer. It is possible for teachers to make their own "beeper" tape by sitting down with a buzzer or bell, a stopwatch, and a tape recorder. The tape can then be used during observations with a tape recorder and earphone. Also, an observer can pretty well time intervals mentally by learning to tap his/her toes six times, which is roughly equal to 6-seconds during an observation. Whatever method is used for timing intervals, all that is important is that the intervals be equal and systematic. Otherwise, the observer will code capriciously whatever catches his/her eye from moment-to-moment.

Step 5: Make a data recording sheet.

a) The teacher needs to prepare a paper-pencil form with boxes in which to write code symbols or tally marks (Example 1), or with code symbols arranged in rows or columns for circling (Example 2). Because compiling data can become time-consuming, a simple procedure for totaling columns or rows of data should be built into the form.

b) If a school system uses systematic observation on a broad scale, a computer scan sheet form can be prepared which has the computer score the observation.

Step 6: Make a chart or graph for displaying your findings.

a) Data needs to be summarized in manner that is easy to understand. Typically, the percent of each behavior during the observation is computed and then graphed or tabled so that relative differences among the behaviors are evident. If cohort or peer data have been collected, it is illustrative to include this information in the frequency table or graph.

b) Data can also be graphed over time. Whichever behavior is being focused on in the objective can be used for monitoring by graphing its percentage. For example, the percentages of time the student displays out-of-seat behavior may be graphed on one form for each of the ten observations.

Example 1. Walker Classroom Observation System.

Description: This simple code described by Walker[9] includes the following code variables:

Child Variables:	+ Appropriate
	- Inappropriate
Teacher Consequences:	0 Praise
	/ Disapproving

The observer can record the data on a simple grid or graph paper where each square represents a 10-second interval, as such:

The code symbols stand for the child's behavior in each interval of time and the teacher's consequating behavior whenver it occurs. By counting

[9]Walker, H. and Hops, H. Use of normative peer data as a standard for evaluating classroom treatment effects. Journal of Applied Behavior Analysis, 1976, 9, (2), 159-168.

the frequency of each symbol and dividing by the total number of observation intervals, the rates of occurrence for child behaviors and teacher consequences can be determined. In other words, the data would provide percentages of time the target student is behaving appropriately and inappropriately, and the percentages of time the student received teacher praise, disapproval, or no teacher feedback.

Since this code is too general to be able to track specific behaviors, its usefulness for measuring progress on objectives is limited. It would, however, be possible to compare the consistency of a child's behavior in different settings or to show the effect of teacher approval and disapproval rates on behavior with this code.

Modification: A data recording form can be designed as shown in Figure 32 to make it possible to code one or more peers in addition to the target student on the same form. The observer simply alternates observation intervals, e.g. target - peer #1 - target - peer #2 - etc.

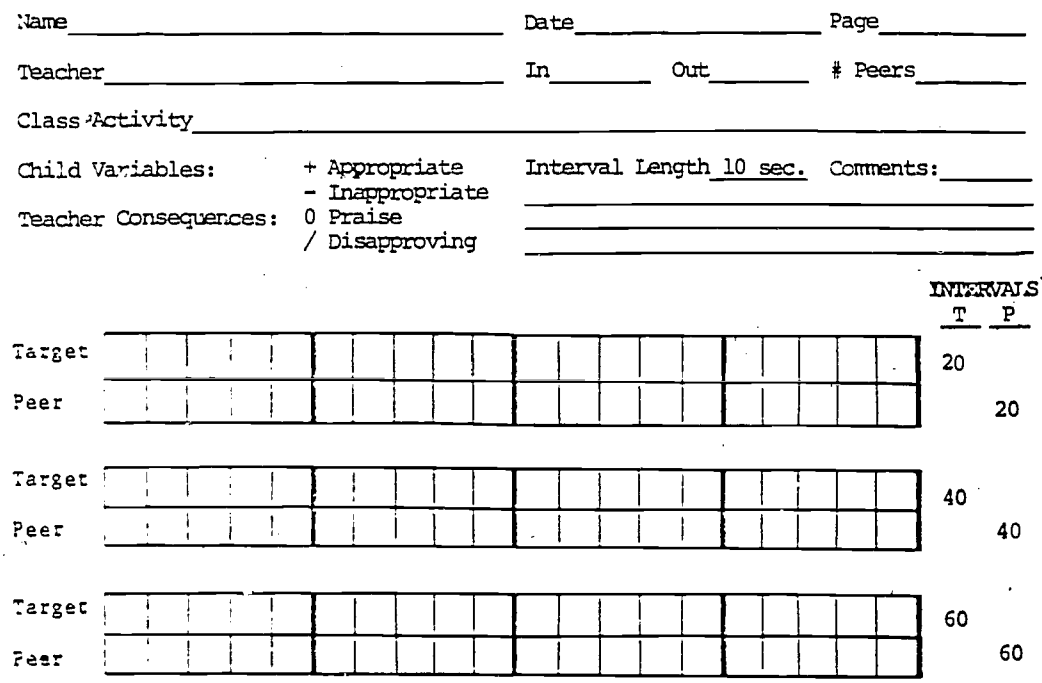


Fig. 32 Modified Walker Data Recording Form

The child's data is then analyzed separately from that of the peers and tabled or graphed for easy comparison.

Example 2. Madsen and Madsen Code with Walker Alternating Peer System.

Description: A code offering more information about off-task behavior was developed by Madsen and Madsen . The code includes the following variables:

(+)On-Task	-	Includes all forms of verbal and motor behavior that follow the classroom rules and are appropriate to the learning situation as defined by the teacher.
(N)Noise Off-Task	-	Includes: a) verbal noise that breaks class rules and/or interrupts the learning situation, and b) object noise when such appears intentionally or repetitively while student is off-task.
(M)Major Motor Off-Task	-	Gross motor behaviors involving: a) total body (out of seat, leaning across aisle, etc.) or b) aggressive behaviors (hitting, kicking, etc.).
(m)Minor Motor Off-Task	-	Motor behaviors with parts of the body when student is also off-task (thumbsucking, playing with academic materials); this does not apply when student is basically on-task even though there is incidental movement.
(P)Passive Off-Task	-	Covers time when student is clearly not focused on the activity at hand, yet is passive (watching peers, daydreaming, etc.).
(V1) and (V2) Variables	-	These are open variables which can be used to code special behaviors of interest for different students; these variables must be defined by the teacher and can include positive behaviors for tracking (social initiation to peer, quiet sitting) or negative behaviors (swearing, aggressive actions, etc.).

The flexibility of this code, provided by the additional open variables, allows teachers to measure levels of specific behaviors of concern while getting an overall picture of behavior.

The form included in this section (see Figure 33) allow teachers to gather data on alternating intervals for the target child and peer group. Data for the target student are recorded on the left side of the page; peer data are recorded on the right side. The totals for each type of behavior are derived by counting down the columns; percentages are computed by dividing each total by the number of intervals observed. For example, if the target student was coded as (N) noise off-task five times out of twenty-five intervals, the percentage would equal 20% .

Many teachers are more comfortable coding with a 10-second time interval than a 6-second interval. The 10-second rate provides sufficient time to glance at the student or peer, make a coding judgment, mark the recording form, and be ready to shift attention to the next student at the beginning of the next interval.

Modification: The recording form can be used as modified (see page 79) to make it possible to code one or more peers in addition to the target student on the same form. The observer simply alternates observation intervals, e.g., target child - peer #1 - target child - peer #2 - etc. The target child's data is then analyzed separately from that of the peers and tabled or graphed for easy comparison.

Source: Walker, H. The Acting Out Child. Boston: Allyn and Bacon, 1978, 53-78.

Name Jane Date 9/25 Page 1

Teacher Ms. Aitending In 9:15 Out 9:40 Peers 29

Class Activity Spelling - group dictation

Special Variables V1: erasing and tearing paper

V2:

Interval	Child							Peers						
1	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
2	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
3	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
4	+	N	M	(m)	P	V1	V2	(+)	N	M	m	P	V1	V2
5	(+)	N	M	m	P	V1	V2	+	N	M	(m)	P	V1	V2
6	+	N	(M)	m	P	V1	V2	(+)	N	M	m	P	V1	V2
7	+	N	(M)	m	P	V1	V2	(+)	N	M	m	P	V1	V2
8	+	N	(M)	m	P	V1	V2	(+)	N	M	m	P	V1	V2
9	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
10	+	(N)	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
11	+	(N)	M	m	P	V1	V2	+	N	M	m	(P)	V1	V2
12	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
13	(+)	N	M	m	P	V1	V2	+	N	M	(m)	P	V1	V2
14	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
15	+	(N)	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
16	+	(N)	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
17	(+)	N	M	m	P	V1	V2	(+)	N	M	m	P	V1	V2
18	+	N	(M)	m	P	V1	V2	+	(N)	M	m	P	V1	V2
19	+	N	M	m	P	(V1)	V2	(+)	N	M	m	P	V1	V2
20	+	N	M	m	P	(V1)	V2	(+)	N	M	m	P	V1	V2
21	+	N	M	m	P	(V1)	V2	(+)	N	M	m	P	V1	V2
22	+	N	M	m	P	(V1)	V2	(+)	N	M	m	P	V1	V2
23	+	N	M	m	P	(V1)	V2	(+)	N	M	m	P	V1	V2
24	+	N	M	m	(P)	V1	V2	(+)	N	M	m	P	V1	V2
25	+	N	M	m	(P)	V1	V2	(+)	N	M	m	P	V1	V2
T	9	4	4	1	2	5		21	1		2	1		
%	36%	16	16	4	8	20		84%	4		8	4		

Fig. 33 Madsen and Madsen Code/Walker System Coding Form

Observation data needs to be compiled for each behavior separately for the target student and peers, and compared by means of a frequency table or graph. Sample forms are included for these purposes (see Figure 34). Since much information is provided by the specificity of this code, the teacher can precisely document student progress.

Source: Walker, H. and Hops, H. Use of normative peer data as a standard for evaluating classroom treatment effects. Journal of Applied Behavior Analysis, 1976, 9 (2), 159-168.

Becker, W., Madsen, C., Arnold, C., and Thomas, D. The contingent use of teacher attention and praise in reducing classroom behavioral problems. Journal of Special Education, 1967, 1 (3), 287-307.

Fig. 30 OBSERVATION DATA SUMMARY SHEET

Student Jane Date 9/25 # Peers Coded 29

School Cedar View Teacher Ms. attending

Class Spelling Time In 9:15 Time Out 9:40

Activity group dictation V1 erasing & tearing paper

V2

note: data based on 5-min. of observation

FREQUENCY TABLE

Code	Student	Peers
+ On-Task	36 %	84 %
N Noise Off-Task	16 %	4 %
M Major Motor Off-Task	16 %	none %
m Minor Motor Off-Task	4 %	8 %
P Passive Off-Task	8 %	4 %
V1 Erasing and Tearing Paper	20 %	none %
V2	%	%

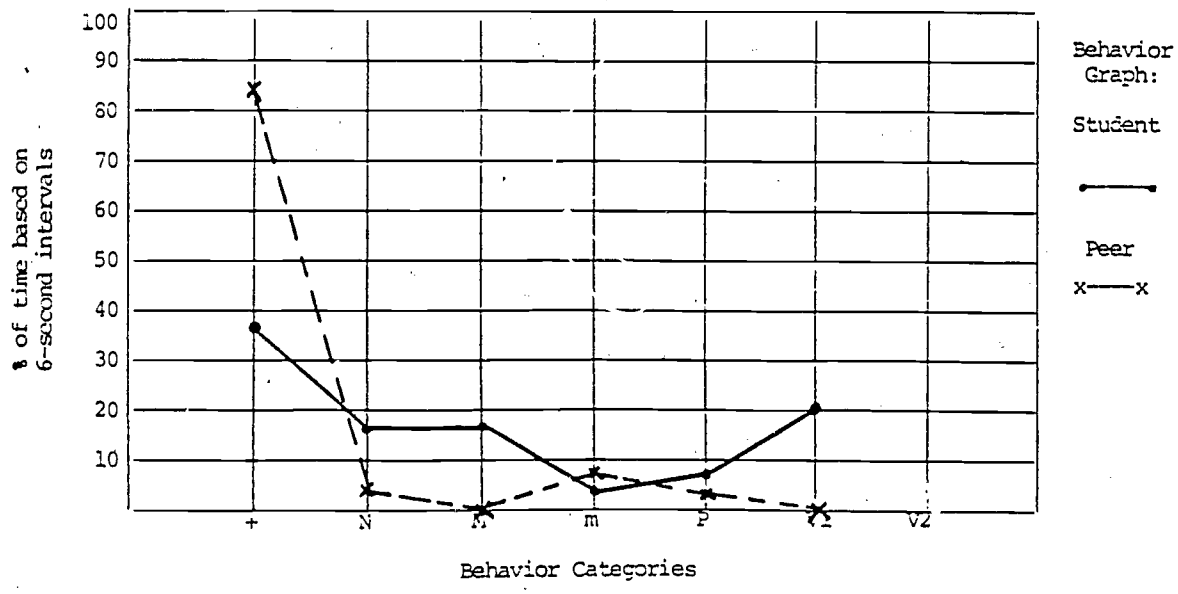


Fig. 34 Observation Data Summary Sheet

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