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ABSTRACT

Nine author-contributed papers from a 1981 conference on severe behavior disorders are presented. In the keynote paper, H. Walker reviews research evidence on acting out children and describes remediation strategies in the school setting. Eight papers follow: "Services to the Seriously Behaviorally Disordered/Emotionally Disturbed Students in Rural Communities" (F. Wood and R. Lininger); "Supervision of Teachers of Students with Behavioral Problems in the School Setting: Special Considerations" (L. Essex); "Learning Characteristics of Children and Adolescents with Various Psychiatric Diagnoses" (T. Barnes and S. Forness); "Social Skills Training for Withdrawn Children" (M. Haring); "Providing Integrated School Experiences for Severely Handicapped Students" (S. Stainback and W. Stainback); "The Employment Readiness of the Autistic Compared with the Severely Handicapped" (A. Hilton); "The Use of Nonverbal Piagetian Tasks to Assess the Cognitive Development of Autistic Children" (D. Lancy and G. Goldstein); and "Analysis of the Response Contingent Time-Out Literature with Behaviorally Disordered Students in Classroom Settings" (R. Rutherford, Jr. and C. Nelson). (CL)

Summer 1982

Monograph in Behavioral Disorders

Severe Behavior Disorders of Children and Youth

Robert B. Rutherford, Jr., Editor

Anne M. Rhodes, Technical Editor
Lisa J. Koenig, Managing Editor

Arizona State University
Teacher Educators for Children with Behavioral Disorders
and
Council for Children with Behavioral Disorders

Summer 1982

MONOGRAPH
In Behavioral Disorders

Severe Behavior Disorders of Children and Youth

Arizona State University, Teacher Educators for Children with Behavioral Disorders, and Council for Children With Behavioral Disorders

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COUNCIL FOR CHILDREN WITH BEHAVIORAL DISORDERS

The Council for Children with Behavioral Disorders is a national professional organization for those interested in the education and well-being of behaviorally disordered individuals. The Council functions to develop lines of communication and interaction among professionals, disciplines, and organizations; to promote adequate programs for recruitment, training and consultation; to encourage research and development; to support legislation for services to these children. Toward this end, the Council publishes a quarterly journal, *Behavioral Disorders*, and sponsors national conferences in relation to these interests. An organization of some 4,400 members, the Council maintains central offices at 1920 Association Drive, Reston, Virginia 22901.

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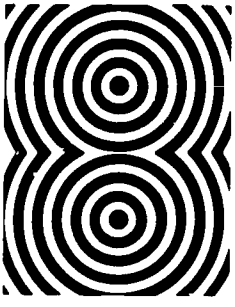

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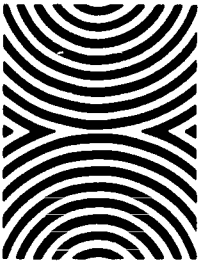
Contents



Preface

This volume of the *Monograph in Behavioral Disorders* series marks the fifth collection of research and practice articles dealing with severe behavioral disorders of children and youth. The monographs are published by the Council for Children with Behavioral Disorders with the cooperation of Teacher Educators for Children with Behavioral Disorders and the Department of Special Education of Arizona State University.

All of the articles included here represent papers presented at the Fifth Annual ASU/TECBD Conference on Severe Behavior Disorders of Children and Youth held in Tempe, Arizona on November 18, 19, and 20, 1981. Nine articles were selected by the CCBD editorial review board from over 30 submitted manuscripts.

There have been 270 papers presented at the ASU/TECBD Conferences over the past five years and 78 articles have been published in the five volumes of the Monograph series. These numbers attest to the continued importance that has been placed by professionals on the dissemination of research and practice information relative to the education and treatment of children and youth with severe behavioral disorders.

Robert B. Rutherford, Jr., Ph.D.

The Acting Out Child: Research and Strategies

Hill M. Walker

Those children who consistently act out against ordinary classroom requirements and teacher imposed rules are of increasing concern to educators, parents, and society at large. Children who are highly disruptive in a classroom atmosphere are usually the first to be referred and the last to be mainstreamed (Sarason & Doris, 1978). Such children place intense pressures upon the instructional and behavior management skills of classroom teachers. Coping with acting out children may contribute to teacher burn out.

Accounting for disruptive child behavior in the school setting is an extremely difficult, complex, and often frustrating process. There are those who argue that disruptive school behavior is a direct result of an impaired socialization process at home. Others suggest that it develops from the child's failure or inability to conform to teacher behavioral/performance expectations upon entering the school setting (Walker, 1979). These two factors by no means exhaust the possibilities. Further, their validity as explanatory constructs for the development of disruptive school behavior is not clearly established.

Disruptive school behavior is on the increase and may be exacerbated by such societal factors as (a) an increasing divorce rate, (b) social conflict and dissension, (c) a declining respect for the autonomy of institutions, and (d) changing societal values. Disruptive school behavior must be dealt with apart from its relationship to such alleged causal factors, etiologies, and historical antecedents. The simple identification of such factors is a very inadequate response to the overall problem. That is, *direct* intervention procedures must be implemented to reduce, change, or ameliorate disruptive behavior regardless of whether alleged underlying causes have been identified.

The purpose of this paper is to review research evidence relating to acting out children and to describe effective strategies that can be used to remediate their behavioral problems/deficits in the school setting. Topics to be discussed include (a) behavioral characteristics of acting out children, (b) the necessary elements of effective program practices for acting out children, and (c) research needs and directions.

Origins of Disruptive School Behavior

There are numerous theories about the origins of disruptive school behavior in children. To date, no one has identified a single unitary causal factor that accounts for the development of such a behavioral pattern. Human behavior is so complex that in many cases it is impossible to identify the precise factors that account for disruptive behavior in children.

Perhaps the most pervasive and widely accepted theory on the subject is that disruptive child behavior in school is simply a continuation of a behavioral pattern acquired outside the school setting; e.g., in the home. In this view, it is assumed that the acting out child is the product of a failed socialization process and that parents are primarily to blame. There can be little doubt that some children bring behavioral patterns, attitudes, and expectations to the school setting that conflict with the behavioral and performance demands expressed by schools and teachers. In such cases, the children involved are labeled as behavioral problems and viewed as hostile to the schooling experience. When this process begins in the early grades (as it usually does), the prognosis for a satisfactory school adjustment is extremely limited.

It is important to note that not all, or even a majority, of disruptive children in school are outside the normal range of acceptable behavior in the home setting. Research by Patterson (1974) and his colleagues (Johnson, Boldstad & Lobitz, 1976; Walker, 1979) indicates that only about half of the children who display acting out, disruptive behavior in school come from "deviant families"; i. e., where the rate of negative interaction and pathological behavior exceeds the levels produced by normal families as determined by observational data recorded in the home setting (Miller, 1975). This finding, in the author's opinion, casts doubt on the view that disruptive school behavior can be traced inevitably to the home setting and parental influence.

It is possible that disruptive behavior develops, in many cases, entirely within the context of the school setting and that child behavior is within the normal range in all other settings; e.g., home, community, and so forth. Schools and teachers have developed a relatively narrow set of behavioral demands and performance expectations that are applied uniformly to child behavior from the beginning of the school experience. Children entering grade one or kindergarten have varying levels of capability for responding to these demands. Those children who cannot or will not meet these expectations are often perceived as behavioral problems and labeled as such. The research of Brophy & Good (1970, 1974) shows that teachers may then communicate lower performance and behavioral expectations to those children in their teaching interactions and, in effect, contribute to this becoming a self-fulfilling prophecy! That is, the child is systematically shaped toward the expectations held, whether accurate or not.

It is quite possible that the processes described and empirically verified by Brophy & Good account for the development and maintenance of disruptive patterns of child behavior in the school setting. In many cases, it may be possible to prevent or change the development of maladaptive behavior patterns by changing the expectations we hold for children and the manner in which we act upon these expectations.

Accounting for disruptive behavior in the school setting is an extremely difficult and complex task. The two processes described above by no means exhaust the possibilities in this area. For example, disruptive school behavior is on the increase and may be exacerbated by such societal factors as (a) an increasing divorce rate, (b) societal conflict and dissension, (c) a declining respect for the autonomy of institutions, and (d) changing societal values. An important point for educators to consider is that disruptive school behavior must be dealt with apart from its relationship to such alleged causal factors and etiologies. The simple identification of such factors is a very inadequate response to the overall problem.

Behavioral Characteristics of Acting Out Children

Acting out children are often perceived as defiant and powerful. Teachers become locked into power struggles with them and the peer group provides a forum against which the struggle is played out. In a very real sense, there are no winners in this contest. Both the teacher and child lose in the long run.

Acting out children are frequently deficient or outside the normal range in three areas vital to a successful school experience: (a) classroom adjustment, (b) peer-to-peer social competence, and (c) academic performance and achievement. The problems acting out children experience in these three areas are highly incompatable with and disruptive of normal social and educational development.

Classroom adjustment. Some ongoing social validation research (Kazdin, 1977; Hersh & Walker, in press; Walker & Rankin, in press) of teacher ratings of child behavior indicates that acting out children are (a) deficient in those behavioral skills and competencies that teachers view as critically important to classroom adjustment, and (b) outside the normal range on those maladaptive social behaviors teachers find most unacceptable. Most teachers would award acting out children extremely low ratings on the adequacy of their classroom adjustments.

Acting out children tend to have higher than normal rates of occurrence on such maladaptive behaviors as *talkouts, out-of-seat, disturbing others, non-compliance, aggressing toward peers, not following directions, and not completing assignments.* Descriptive research by Walker & Buckley (1972, 1974) indicated that acting out children frequently engage in appropriate classroom behavior less than 50% of the time. It is not uncommon for the teachers of these children to invest four to five times the normal amount of effort and attention in coping with their inappropriate behavior. Their success in reducing children's disruptive behavioral patterns using these techniques was extremely limited.

Peer-to-peer social competence. Studies of the sociometric status and social competence of acting out children seem to be notably lacking in the literature. However, it is probably safe to conclude that acting out children are not usually "sociometric stars."

The social behavior of this population of children is often aversive to peers. Acting out children frequently victimize interactive partners through the use of coercive tactics that force the submission of peers (Patterson & Cobb, 1971, pp. 72-129; Reid, 1970, pp. 133-177).

Acting out children are very often deficient in the specific social skills that contribute to social acceptance by peers, such as (a) distributing and receiving positive social behavior (e.g., praise, compliments) from peers, (b) knowledge on how to make friends, and (c) referential communication skills or the ability to assume the perspective of the speaker in ongoing social exchanges (Gottman, Gonso & Rasmussen, 1975). Research on the developmental implications of low social status indicates that children who are not accepted by peers are at risk for a series of developmental problems, including, juvenile delinquency (Roff, Sell & Golden, 1972), school dropout (Ullman, 1957), bad conduct discharges from the military (Roff, 1961), and emotional adjustment problems in adulthood (Cowen, Pederson, Babigan, Izzo, & Trost, 1973). Research summarized and analyzed by Robbins (1966) indicates that deviant children are most likely to suffer from lack of peer acceptance in childhood and are correspondingly exposed to the above developmental risks. In many cases, acting out

children would presumably be a part of the deviant group to which Robbins refers.

Academic performance and achievement. Because acting out children spend so much time in school engaged in nonacademic pursuits, they are often below grade level in reading and math achievement. They frequently engage in social behaviors that prove highly disruptive to the learning process. Their academic learning time (Rosenshine & Berlinger, 1978) tends to be well below normative levels for nonacting out, regular children.

From 1966-1971 Walker & Buckley (1972, 1974) accepted referrals of elementary-aged acting out children for assignment to an experimental demonstration classroom (n=70) for 3 or 4 months of intervention. Children were assigned to the classroom in groups of six to eight. Pretesting of each group using standardized tests showed them to be consistently below grade level in academic achievement.

It has been argued that acting out children may exhibit disruptive behavior simply because they have not acquired the academic skills necessary to achieve in school. To date, no one has proven conclusively which is the primary agent; e.g., does the acting out behavior cause the underachievement or vice versa. In terms of treatment implications, this issue is moot. Remediation programs designed for acting out children should focus on their disruptive social behavior *and* simultaneously motivate them to achieve.

Other behavioral characteristics of acting out children include:

1. 90 to 95% of referred acting out children tend to be male (Walker & Buckley, 1974).

2. They are very sensitive to the operation of environmental contingencies and may be "contingency-wise." Acting out children are careful to not whether verbally stated contingencies are backed up by actual consequences (Walker, 1979).

3. The behavior of acting out children tends to be situation specific (Mischel, 1968, 1969) — that is, appropriate in the presence of effective intervention programs and inappropriate at other times. Acting out children tend not to generalize behavioral gains into nontreatment settings and periods.

4. The disruptive behavior patterns of acting out children tend to be strongly developed and are very resistant to change. Powerful intervention procedures are necessary to have a significant impact upon the behavior of acting out children.

The Necessary Elements Of Effective Program Practices For Acting Out Children

A variety of approaches and treatment methods have been presented in the literature for remediating the behavioral problems of acting out children. These run the gamut from those relying primarily upon counseling procedures to those that make extensive use of punishment. A series of techniques and procedures for use by the classroom teacher in managing such children are described by Walker (1979). In addition, the CLASS (Contingencies for Learning Academic and Social Skills) program is a comprehensive intervention package for use by teacher consultants in remediating the acting out child's behavior within mainstream settings (Hops, Beickel & Walker, 1976). The CLASS program is highly effective and has been tested extensively in a large number of school districts (see Walker & Hops, 1979).

For procedures to be effective with this population of children, certain elements or critical features must be incorporated into their application. The CLASS program referred to above incorporates all these features. A listing of these necessary elements is provided below.

1. Establish a set of rules or standards governing appropriate behavior in classroom and playground settings.
2. Communicate those rules and standards directly.
3. Assess the child's ability to discriminate his/her behavior in relation to those rules.
4. Identify stimulus conditions and situations that may prompt or elicit acting out behavior and attempt to either change them, or teach more adaptive child responses to them.
5. Implement a treatment procedure that incorporates positive management techniques for appropriate behavior and mild punishment procedures for incompatible, disruptive behavior.
6. Set up group contingencies at school and individual contingencies at home to support the behavior change process.
7. Extend the program to all settings where child behavior is problematic.
8. Plan on implementing a low cost variation of the program to maintain gains over the long term.

The fidelity of implementation and consistency of application are extremely important considerations in the use of program procedures that incorporate the above elements. Procedures of this type are demanding of implementation agents and require the investment of considerable time, effort, and attention to detail. Even the most well-conceived and highly effective programs can be sabotaged if applied inappropriately by school personnel.

There really are no easy methods or approaches for use in remediating the behavioral problems of acting out children. Because this behavioral pattern is usually so strongly developed, has such a long history, and is supported by the natural environment, very powerful intervention procedures are required for effective remediation. Powerful procedures are complex and require considerable implementation skill and are thus demanding of implementation personnel.

Indirect treatment methods such as counseling and psychotherapy will not, in the great majority of cases, have any appreciable impact upon the behavioral repertoires of acting out children. Usually some combination of positive reinforcement procedures for appropriate behavior and mild punishment (response cost, time-out) for inappropriate behavior will be required to achieve this overall goal (Walker, Hops & Fiegenbaum, 1976).

Research Needs and Directions

In the author's view, there are five major areas in which additional research is needed relating to the management and control of disruptive child behavior in the school setting. Each of these areas is discussed briefly below.

Research attention should be given to the exposure of acting out children to systematic social skills training. This kind of training could dramatically improve the peer-to-peer social adjustment. A great deal of progress has been made of late in developing curricula and training procedures for social skills training. To date, the applications of this technology to disruptive children have been extremely limited.

Much greater emphasis than currently exists should be placed on the academic development and achievement of acting out children. Too often, such children are assigned to special settings outside the educational mainstream where control of their behavior becomes an end in itself and their academic growth is comparatively ignored. It is quite possible and feasible to attend carefully to academic growth while simultaneously teaching a more adaptive pattern of behavior (see Greenwood & Hops, 1981 and Walker & Hops, 1976). Intervention models for disruptive behavior that forge a balanced application in these two areas should be developed and researched. At a minimum, models of this type should incorporate direct instructional procedures, strategies for increasing academic engaged time (Rosenshine & Berliner, 1978), and solid academic curricula in the basic skills area.

Acting out children engage in a number of social behaviors that classroom teachers find highly aversive and feel incompetent to handle (Hersh & Walker, in press; Walker & Rankin, in press). These include: teacher defiance, tantrums, stealing, aggression toward others, inappropriate sexual behavior, and disruption of classroom atmosphere. The frequency with which acting out children engage in these behaviors is much higher than normal and is instrumental in (a) the referral of such children outside the educational mainstream for services, and (b) accounts for at least a portion of teachers' active resistance to their being mainstreamed and placed in their classes. Inservice training programs and cost effective remediation procedures need to be developed for improving teachers' ability to cope with these types of child behavior.

The behavior of acting out children should be dealt with in the settings or situations where it is a problem. The logic of referring an acting out child to a special setting for treatment of a problem occurring in a regular playground or classroom is obscure at best. Such children need to be taught adaptive responses to the conditions that exist in the settings in which they are expected to perform. It is extremely difficult to do this in an isolated, self-contained setting.

Research in this area should address standardized models of treatment for disruptive behavior that can be implemented within mainstream settings, and are usable by classroom teachers, recess supervisors and support personnel. This is not easy task by any means; however, the necessary technology for developing such models does exist.

Finally considerable research of a descriptive nature remains to be conducted on the processes that lead to the development of disruptive behavior patterns in school. Of particular concern to the author is the need for research on the task of identifying the specific behavioral pinpoints (adaptive and maladaptive) and accompanying normative rates that cause children to be perceived and labeled as acting out in the early school years. If this were accomplished, it would be possible to prevent the development of maladaptive behavior patterns in many instances.

CONCLUSION

Disruptive child behavior is clearly on the increase in our public schools. However, broad based, widely accepted, and effective methods for dealing with it are notably absent.

Part of the problem seems to be a lack of effective intervention procedures that are packaged in a way that makes them feasible for use in mainstream

settings. Another factor, however, concerns educators' general unwillingness to invest the time, energy, and effort necessary to cope effectively with disruptive child behavior in nonspecial education settings. The dominant motivation still appears to be directed toward exclusion of these children from regular classroom and playground settings.

An effective solution to this overall problem will involve both procedural and attitudinal variables. How well we resolve it will be a true test of committment to the concept of mainstreaming.

REFERENCES

Brophy, J., & Good, T. Teachers communication of differential expectations for children's classroom performance: Some behavioral data. *Journal of Educational Psychology*, 1970, *61*, 365-374.

Brophy, J., & Good, T. *Teacher-student relationships: Causes and consequences.* New York: Holt, Rinehart & Winston, 1974.

Cowen, E. L., Pederson, A., Babigan, H., Izzo, L. D., & Trost, M. A. Long-term follow-up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology*, 1973, *41*, 438-446.

Gottman, J., Gonso, J. & Rasmussen, B. Social interaction, social competence, and friendship in chidren. *Child Development*, 1975, *46*, 709-718.

Greenwood, C. R., & Hops H. Group oriented contingencies and peer behavior change. In P. Strain (Ed.), *The utilization of classroom peers as behavior change agents.* New York: Academic Press, 1981.

Hersh, R., & Walker, H. M. Great expectations: Making schools effective for all children. *The Policy Studies Journal*, in press.

Hops, H., Beickel, S., & Walker, H. M. *CLASS (Contingencies for Learning Academic and Social Skills).* Eugene, Ore.: (Center at Oregon for Research in the Behavioral Educatin of the Handicapped (CORBEH), 1976.

Johnson, S. M., Boldstad, D., & Lobitz, G. Generalization and contrast phenomena in behavior modification with children. In E. J. Mash, L. A. Hamerlynck & L. C. Handy (Eds.), *Behavioral modification and families.* New York: Bruner, Mazell, 1976.

Kazdin, A. Assessing the clinical or applied importance of behavior change through social validation. *Behavior Modification.* 1977, *4*, 427-452.

Miller, W. H. *Systematic parent training.* Champaign, Ill.: Research Press Co., 1975.

Mischel, W. *Personality and assessment.* New York: John Wiley, 1968.

Mischel, W. Continuity and change in personality. *American Psychologist.* 1969, *24*, 1012-1018.

Patterson, G. R. Intervention for boys with conduct problems: Multiple settings, treatment, and criteria. *Journal of Consulting and Clinical Psychology*, 1974, *42*, 471-481.

Patterson, G. R., & Cobb, J. A dyadic analysis of "aggressive" behaviors. In I. P. Hill (Ed.), *Minnesota symposia on child psychology* (Vol. 5). Minneapolis: University of Minnesota, 1971.

Patterson, G. R., & Reid, J. Reciprocity and coercion: Two facts of social systems. In C. Neuringer & J. L. Michael (Eds.), *Behavior modification in clinical psychology.* New York: Appleton-Century-Crofts, 1970.

Robbins, L. *Deviant children grown up.* Baltimore: Williams & Wilkins, 1966.

Roff, M. Childhood social interactions and young adult bad conduct. *Journal of Abnormal Social Psychology,* 1961, *63,* 333-337.

Roff, M., Sells, B., & Golden, M. *Social adjustment and personality development in children.* Minneapolis: University of Minnesota Press, 1972.

Rosenshine, B., & Berliner, D. Academic engaged time. *British Journal of Teacher Education.* 1978, *4,* 3-16.

Sarason, S., & Doris J. Mainstreaming: Dilemma, opposition, opportunities. Chapter in M. Reynolds (Ed.), *Futures for education for exceptional children: Emerging structures.* Reston, Va.: Council for Exceptional Children, 1978.

Ullman, C. Teachers, peers and tests: Predictors of adjustment. *Journal of Educational Psychology,* 1957, *48,* 257-267.

Walker, H. M. *The acting out child: Coping with classroom disruption.* Boston: Allyn & Bacon, 1979.

Walker, H. M., & Buckley, N. Programming generalization and maintenance of treatment effects across time and across settings. *Journal of Applied Behavior Analysis, 1972, 5,* 209-224.

Walker, H. M., & Buckley, N. *Token reinforcement techniques.* Eugene, Ore.: E-B Press, 1974.

Walker, H. M., & Hops, H. Increasing academic achievement by reinforcing direct academic performance and/or facilitative nonacademic responses. *Journal of Educational Psychology,* 1976, *68,* 218-225.

Walker, H. M., & Hops, H. The *CLASS* program for acting out children: R&D procedures, programs outcomes, and implementation issues. *School Psychology Digest,* 1979, *8,* 370-381.

Walker, H. M., Hops, H., & Fiegenbaum, W. E. Deviant classroom behavior as a function of combinations of social and token reinforcement and cost contingency. *Behavior Therapy,* 1976, *7,* 76-88.

Walker, H. M., & Rankin, R. An assessment methodology for selecting mainstream placements and evaluating the behavioral demands within them. *School Psychology Review,* in press.

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Services to the Seriously Behaviorally Disordered/ Emotionally Disturbed Students in Rural Communities

Frank H. Wood and Robert Lininger

Services to the Seriously Behaviorally Disordered/Emotionally Disturbed in the Light of Recent Legislation and Court Decision

Following a series of court decisions that established the right of handicapped children to a free public education and the passage of progressive legislation by many states, the United States Congress established a national standard for an appropriate education for these students in the Education of the Handicapped Act of 1970 (P.L. 91-230) and the regulations implementing it as amended by P.L. 93-380, P.L. 94-142, and P.L. 95-561. This legislation supports comprehensive programming efforts at several levels in states that accept the authorized federal funding. Local school districts are required to develop plans for programming for all special students and individualized education programs (IEP's) for individual students. State education agencies are required to provide program plans for implementing education services for all students in the state, and the federal Office of Special Education and Rehabilitation Services is charged with monitoring compliance with the provisions of the act in participating states. What impact has this legislation had on educational programming for emotionally disturbed students?

The delivery of services has been affected by questions about eligibility for services under the definition provided in the implementing regulations. This definition attempts to limit eligibility to the *seriously* emotionally disturbed, a group from which the "socially maladjusted but not emotionally disturbed" are specifically excluded. (The term *behaviorally disordered,* which is widely used by educators, is not used in the definiton.) There has been considerable discussion about whether this means that services are not mandated at all for the mildly or moderately emotionally disturbed student or for the socially maladjusted student who has been adjudicated delinquent. Raiser and Van-Nagel (1980) feel that this will be the result in practice, and Kauffman (1980) argues strongly that P.L. 94-142 will actually result in the punishment of schools that currently provide special services to mildly and moderately disturbed students because these programs will not be reimbursed. But perhaps the programs will be reimbursable if the students are relabeled as "seriously" rather

than moderately disturbed, a semantic accommodation. Such relabeling requires only a shift in the perspective of the labeler, and strongly subjective factors influence the labeling of students as emotionally disturbed in any case (Wood, 1981). The definition of eligibility and other important matters (e.g. the determination of standards for teacher licensure) remain to be fully worked out in the complementary state laws and regulations. Further litigation may also be required before clarity is achieved.

But even if the full effects of the new legislation are not yet clear, one general effect has been an impetus to develop more programs for students labeled as (seriously) behaviorally disordered/emotionally disturbed in both rural and urban areas. Now our public schools have a legislatively as well as constitutionally based obligation to provide an educational program for all children. Exclusion or serial suspension are no longer alternatives to working out a solution to the instructional problem created by behaviorally disordered students. A slow but steady increase in the number of programs for the behaviorally disordered/emotionally disturbed is occurring. In addition, teachers' "off the record" comments suggest that some of the students receiving special education support service on a part-time basis under categorical labels such as *learning disabled* or *mentally retarded* have behavioral problems as a primary characteristic.

Serious emotional disturbance is a relatively low-incidence handicap. Wood and Zabel (1978) and Rubin and Balow (1978) have summarized estimates of need ranging from .5% - 3% of the school population. Available services continue to fall short of the need, however. The Office of Special Education and Rehabilitation estimates that large numbers of emotionally disturbed students are currently going unserved (Grosenick & Huntze, 1979). In many states the percentage of students served at present is less than .5%. Services seem in particular short supply in rural areas. While it is true that parental resistance to *emotional disturbance* as a label because of its socially embarassing associations may result in some students being mislabeled as *learning disabled* (note comment above), mislabeling alone cannot account for a discrepancy of this size.

Special Problems of Rural Areas

Providing an appropriate education for low incidence, difficult-to-manage students such as the seriously behaviorally disordered/emotionally disturbed presents many problems for school districts in rural areas. Some are functions of sparse population and predominately agricultural economic base (Bruininks & Werdin, 1981; Sher, 1977). For example, consider the following factors:

1. Lack of an adequate tax base to support expensive specialized programs for students with special needs.

2. Difficulty in recruitment and retention of specially trained teachers and administrators.

3. Lack of availability of specialized related services — medical, psychiatric, social welfare.

4. Problems in overcoming the social isolation of families having a "problem child", who may be the focus of community disapproval and rejection rather than sympathy. Because of the sparse population of rural areas it is difficult to compensate for this isolation through the formation of parent support groups.

5. Problems created for the delivery of services by geographic factors such as poor secondary roads, long distances to be traveled, and the hazards of severe weather.

6. Special demographic problems created by ethnic, cultural, or religious groupings or the seasonal presence of migrant labor families.

While several of these problems are by no means found uniquely in rural communities, their cumulative effects present a major challenge to rural school educational planners.

Changing Service Models

Wide acceptance of community responsibility for providing an appropriate education to all student with special needs has developed slowly in the United States, and still faces a somewhat uncertain future. A sense of responsibility limited to individuals with readily recognizable and sympathy-inducing handicaps has long been present. In urban areas this found expression through the establishment of special schools and residences for the blind, deaf, and physically impaired supported either by municipal funds or gifts from private donors. Some of these institutions date back to the colonial period. Usually these institutions did not serve the rural population, but many states began the establishment of similar facilities to serve a wider population in the early 19th century (Dunn 1973, pp. 41 ff). Besides institutions to serve the deaf, blind, and mentally retarded, some institutions were established for the mentally ill. While these "hospitals" for the mentally ill did not serve the very young, they provided treatment and what may be called a form of vocational education to adolescents as well as adults.

The limitations of the residential model are now generally recognized. Children are taken from their families to live in what is often a regimented, barracks-type situation. Family bonds are difficult to maintain. Neglect, and occasionally even abusive treatment and exploitation, occurs with sufficient frequency to arouse the apprehension of parents seeking a wholesome environment for their child. Finally, the separation of the special needs population from the broader community fosters a sense of estrangement that may make later integration more difficult.

For these reasons, special day classes for pupils who could continue to live at home with their families were developed in urban areas from about 1900 on. Further efforts to educate students in a more normal environment gradually produced programs offering a range of services, which Deno (1970) and others have conceptualized as a "cascade". Today, rural parents of children with special problems, who have previously possessed only two choices — keeping their child at home with few special services or uprooting the child and sending him/her to a state boarding institution — are beginning to ask why their children can not have some of the educational benefits of this new model.

ISSUES IN DEVELOPING NEW SERVICE MODELS FOR SEVERELY EMOTIONALLY DISTURBED STUDENTS IN RURAL AREAS

Models developed to serve urban populations do not generalize directly to rural areas. Tailoring service models to fit the special needs and resources of rural areas requires careful planning. Some of the factors creating special problems

for rural, special education planners have already been mentioned. These and others have been clustered into six major issues for discussion. Following this discussion, several service delivery options that can contribute to meeting the needs of rural, seriously emotionally disturbed students will be described. The issues to be discussed are generally issues for special education, although they present some unique features when discussed in the context of programming for the seriously behaviorally/emotionally disturbed.

The Eligibility/Labeling Issue: The Relationship Between Categorical Labels and Appropriate Programming for Seriously Behaviorally Disordered/ Emotionally Disturbed Students

Programming for seriously emotionally disturbed students is mandated by state and federal law. Presumably, this mandate covers most students who are seriously behaviorally disordered; although as already mentioned, the current P.L. 94-142 definition specifically excludes students who are socially maladjusted but *not* emotionally disturbed, an exclusion probably directed at delinquent (i.e., rule-breaking) youth who are not also seriously disturbed. However, confusion about eligibility means that the specific natures of the programming and the extent of the special services to be provided at school district expense are often left largely to local discretion.

The actual number of behaviorally disordered/emotionally disturbed student receiving service is not known. Some students are not receiving service. Some may be served under other labels. For example, some districts report the enrollment of substantial numbers of learning disabled students but few or no seriously emotionally disturbed students. It seems likely that some of the LD students may be primarily behaviorally and/or emotionally disordered. The use of the LD label can result from parental pressures. Parents who recognize that their student need help may press to have their student receive some label that assures eligibility, but they may resist use of the label *seriously emotionally disturbed* because of the potentially lasting stigmatization of the family and the student that results.

From one viewpoint, the labeling issue seems irrelevant. Who cares what label is used as long as the student receives an appropriate special education? Why not use a general, functional label such as *special needs student*? Unfortunately, the matter is not as simple as this when our focus is on students with severe, documentable behavioral disorders, and possibly related, intropsychic emotional disturbance. Small numbers of teachers have the temperament and training, both being very important, that effective education of these students requires. Would use of a less demeaning label be compatible with assurance of placement for instruction with an appropriately prepared teacher? Experience suggests the answer must be "no." Consider what happens at present.

In Minnesota, teacher labels (licenses) must match students labels. As a result, if an administrator has no teachers trained (licensed) to teach emotionally disturbed students, he/she is reluctant to use that label, which would automatically place his/her program out of compliance. This mislabeling, plus that resulting from parental pressure, means that some BD/ED students do not receive appropriate services because they are placed with teachers who are not well qualified by personality or training to meet their educational needs. Thus, the labeling issue is inseparable from service issues.

Service for disturbed students is mandated, and many needy students receive some kind of service. But is it really the appropriately individualized educational program mandated under the law? While generic labels are desirable for social reasons, they may permit less than appropriate service unless program administrators demonstrate a firm commitment to meeting the needs of each student. And if BC/ED students are then grouped with Mr. X, will they not be labeled "Mr. X's kids, the crazy ones," thus acquired a new stigmatizing label?

No solution by rule to the eligibility/labeling issue appears possible. The only solution lies in our continuing efforts to see that students receive the best education available in the least restrictive and stigmatizing environment possible.

The Funding Issue: Using Federal, State, and Nonschool Funds to Support Local Programs for the Seriously Behaviorally Disordered/Emotionally Disturbed Student

Students with special needs make up a small majority of the school population. Some of the handicapped subgroups attract more supportive, if somewhat patronizing, sympathy from the general public than the seriously emotionally disturbed. These latter students are a small and unpopular minority for the most part, the focus of resentment because they interfere with the instruction of other students and make schools less pleasant places for everyone. While highly aware of their presence in the schools, the lay public tends to underestimate the deep-rooted severity of their problems, believing that most could be straightened up by rough-and-ready methods. They also believe that those who do not respond to such direct methods are probably "too sick" or "too mean and dangerous" to be in school with other children and should be excluded or turned over to welfare or correctional agencies for programming.

This poor public image makes it difficult to maintain funding for therapeutic educational programs for emotionally disturbed students. In the race for limited dollars, they frequently end up ranking lower in priority than other needs. In this situation, being able to point out the shared costs made possible by state and federal supporting funds is very important to the special education planner. Special educators hope that these funds will continue to be available as a means of offsetting resistance to programming efforts at the local level. In the meantime other factors, such as billing back to the local district the cost of educational services provided to students sent away to residential institutions, support a strategy of developing local programs.

Interagency cooperation offers potential for further spreading the financial costs of programs for the emotionally disturbed. The advantages of a cooperative effort take the form of an increase in the number and diversity of personnel and concomitant increase in the number of possible service delivery arrangements. This increase in staff and services can be accomplished without taking the student too far away from his or her home community.

For example, the Green Bay (Wisconsin) Public School District and the Brown County Mental Health Unit have combined resources to provide comprehensive services for emotionally disturbed children and youth in the area. The school district supplies teachers, materials and transportation, and the Mental Health Residential Center provides space for self-contained special classes (K-12). Through the cooperative effort, a variety of programming

options become available. The student can live either in the community or in the Mental Health residence and be placed in the Mental Health self-contained program, the special education options at the public schools, or mainstreamed all or part of the day into the regular classroom. Mental Health provides parent and student counseling and outreach services to families with disturbed students.

Such examples demonstrate what can be done. But often cooperation between schools and other public agencies is quite limited (Wood, in press). For example, in Minnesota a number of nonprofit residential programs receive direct support funds for residential children and youth from correctional or welfare agencies, which pay salaries and other expenses of operation, while the educational program is provided by the school district in which the program is located with tuition being billed back to the student's district of residence. In other cases, all or part of the direct support funds come from private insurance payments or federal support for dependents of armed service personnel, while the costs of the school program are assumed by the local school district. If a school district were to establish such a program on its own, however, these nonschool sources of funds would not be available. As a result, certain types of programs, particularly those providing residential treatment, will remain largely in the private, nonprofit sector for the immediate future.

The Centralization Issue: Should Rural Programs for Seriously Emotionally Disturbed Students be Centralized (Students Transported to the Program) or Decentralized (Staff Traveling to the Students)?

No one has yet come forward with a convincing argument that long school bus rides are beneficial for typical students. For seriously emotionally disturbed students, these rides are extremely difficult for themselves, fellow passengers, and the driver. For this reason it seems sound general principle to provide educational programs for these students as close to their homes as possible. Either the management assistant, counseling teacher, or resource room model seems the first choice for programming. Only if appropriate services can not be arranged at the students' own school should additional transportation be considered. When it is necessary to transport seriously emotionally disturbed students over long distances, management of behavior during the bus ride must be given as much attention as the in-school program. Expectations clearly expressed in rules (seat belts fastened at all times, no touching of others) supported by a home/bus/school daily report card system with point reward and response cost contingencies works effectively.

The Nature of Service Issue: What is the Appropriate Balance of Direct, Indirect, and Supplementary Services?

Direct services are educational services provided directly to a student with special needs by a special education teacher or related staff person. Indirect services are services provided by special education personnel to regular classroom teachers to enable them to serve eligible students with special needs placed in their classrooms more effectively. Supplementary services are services provided that are not primarily educational in nature; for example, diagnostic or counseling services.

If it is preferable to provide services at the student's local school, there will most likely be too few students to justify a full day special class, given the low incidence of serious behavioral disorders/emotional disturbance. Special classes become more feasible when they serve students from more than one building or district. Thus, special education teachers placed in a rural district will frequently be called upon to provide a wide range of indirect as well as direct services. To accomplish this task they will require not only extensive training but on-going support from well-trained consultants.

The extent of the supplementary services that are provided directly to the student and his/her parents at school expense is properly a matter for careful discussion. Paying for needed consulting and therapeutic services from other mental health professions can become a heavy burden to a school district. Fortunately, in some rural areas mental health agencies are willing to work out cooperative programs with districts. Examples would be the Green Bay/Brown County program mentioned earlier, or Georgia's Psychoeducational Network. This helps ease the expense to parents, but the extent of school liability for excess costs is still a matter of debate.

The Generic v. Categorical Issue: Should Services be Provided in a Generic or Categorical Model?

Despite the obligatory application of labels to student with special needs, special educators know that these students do not fit easily into a limited number of slots. There would never be enough categories to fit an ideally appropriate service model until the number of categories match the number of students to be served; i.e., a totally individualized program. The obvious practical response, particularly when we are dealing with a low-incidence group in sparsely populated rural areas, is to adopt some form of the "generic model", which makes easier the solution of many of the thorny problems of eligibility and facilitates flexible programming.

Unfortunately, the generic model of service frequently has been abused in practice. Students with special needs are placed with teachers who lack the training to serve them appropriately. Rather than being decategorized in the interests of individualization, service is watered down. But good generic programs are possible, and the potential of the model remains.

One model that might be considered is that reportedly used in Israel. There, the special education teacher assigned to a local school is expected to acquire through continuing education the specific skills that enable him/her to provide an appropriate education for those students with special needs in their particular school. Advanced training taken at night or when the school is not in session is partly reimbursed from school funds. In return for this support, the teacher accepts a contractual obligation to remain at the school for an agreed upon period of time. The additional training is recognized by salary differentials. As a result, a special teacher with skills fitted to the children in a particular school is trained and receives the professional recognition his or her specialized training merits.

The Day v. Residential School Issue: What is the Place of Special Day Schools or Residential Programs in Rural Programming for the Seriously Emotionally Disturbed?

A few students can not be accommodated in a regular classroom even with strong supplementary services or a good resource room backup program because of the severity, frequency, or nature of their behavioral disorders. A full-time day or residential program is needed for their appropriate therapeutic education. The number of students requiring such service and the distance to be traveled will be primary considerations in deciding whether or not to set up such a program in a particular rural area. Where distances are not too great and the population size warrants it, day school programs can be set up to serve several school districts on a cooperative basis. A number of good examples exist in urban and suburban areas. If such programs are not practical, a residential treatment center/school is a possibility, with students either boarded continuously or for only the days of the school week, returning home on the weekends. Either dormitories or foster homes provided the needed boarding accommodations. The use of boarding homes has the advantage of avoiding commitment to a fixed overhead, and as a result, may be more feasible for a public school program undertaken in cooperation with other agencies. Such programs can be supported by a combination of educational, welfare, and mental health funds. A Wisconsin example was discussed earlier.

SERVICE OPTIONS FOR RURAL PROGRAMS

A Range of Service Options

A range of service options for behaviorally disordered/emotionally disturbed students is shown in Figure 1. The options are listed in order of the estimated total per pupil cost, and the likelihood of partial reimbursement of those costs from state and federal funds has been suggested as related to the issues of eligibility and labeling. Feasibility for a single district to implement a particular option will be a function of the interplay of several variables, but greatest stress has been placed on estimates of incidence and the need for transportation to bring low-incidence students to a central location for instruction. These options will be briefly discussed here.

Option 1: Inservice Training on Behavior Management Procedures for Regular Classroom Teachers.

The least expensive option for improving services for behaviorally disordered/emotionally disturbed students is provision for training regular classroom teachers in better methods of behavior management as part of a coordinated building plan for improving the educational climate of the school. The limitation of this approach is the difficulty many teachers experience when trying to apply in their classrooms procedures they have learned in a workshop. To be effective, such training involves more than a single lecture or 1-day workshop, and the benefits are greatest if this option is combined with some of the other options listed, particularly numbers 1 through 4, to produce what Howey (1976) calls a job-imbedded approach to inservice.

SERVICE OPTIONS FOR RURAL PROGRAMS

OPTIONS	NEED FOR ELIGIBILITY / LABELING	NEED FOR ADDITIONAL TRANSPORTATION	SPECIAL SERVICES REQUIRED	FEASIBILITY FOR SINGLE RURAL DISTRICT
1. Inservice Training on Behavior Management Procedures for Regular Classroom Teachers	NO	NO	Inservice Training	HIGH
2. Use of Paraprofessional Staff to Provide Assistance in Behavior Management to Regular Classroom Teachers	NO	NO	Consultation by Paraprofessional	HIGH
3. Use of Professional Staff to Assist Regular Classroom Teachers in Behavior Management	Optional	NO	Consultation by Professional	HIGH
4. Supplementing Consulting Teacher Service with Direct Service with an Aide	Optional	NO	Consultation by professional plus direct service by paraprofessional	HIGH
5. Responsibility Shared between a Regular Teacher and a Special Resource Room Teacher	YES	Optional	Consultation plus direct service by professional	HIGH
6. Special Class (Day School) Placement	YES	YES	Direct service by paraprofessionals and professionals plus professional consultation	MEDIUM
7. Special Class (Residential School) Placement	YES	YES	Direct service by paraprofessionals and professionals plus professional consultation	LOW

Option 2: Use of Paraprofessional Staff to Provide Assistance in Behavior Management to Regular Classroom Teachers

There are many people in our society whose training and experience qualify them to assist professionals in their work with children although they do not meet standards for professional licensure. Examples might be men or women who have completed undergraduate training programs in psychology or social welfare but lack teacher licensure. Other examples are persons with teaching licenses who are not teaching currently either by choice or because of lack of a position. Most communities also have members who do not wish to accept fulltime employment for family or business reasons but who are available to work with teachers on a parttime basis. Such persons can be trained to provide consultation and support to regular classroom teachers.

Salaries of such nonlicensed paraprofessionals may not be reimbursable from state and federal funds has been suggested as related to the issues of lower salaries they typically receive for their limited but very useful work. Their paraprofessional status limits their function in the school to assisting teachers, while the full responsibility for students remains with the professional teacher.

Option 3: Use of Professional Staff to Assist Regular Classroom Teachers in Behavioral Management

Paraprofessionals usually lack extensive experience with severely behavioraiiy disordered/emotionally disturbed students. As a result, they need careful supervision and backup to help them assist teachers to cope with more severe problem behavior. Consultants who are licensed professionals can be expected to have this experience and to operate more effectively and independently on a wide range of behavioral problem situations. (This is not to ignore the obvious fact that an inexperienced teacher may be *less* knowledgeable than an experienced aide.) A consultant teacher can also be expected to have the ability to plan and conduct inservice training of the type described in Option 1. A consultant's job description may include responsibility for some direct service, although caution must be exercised as it is easy to overload the faculty member filling such a role.

Option 4: Supplementing Consulting Teacher Service with Direct Service with an Aide

While paraprofessionals cannot by regulation undertake instructional tasks independently, they can assist teachers in the management of problem behavior. Many student behavioral problems are manifested as poor attention to task and low tolerance for frustration, areas where an "assistant to the teacher" can be of great assistance in the regular classroom. To be most effective with severely emotionally disturbed students, such paraprofessionals need the support of an experienced consulting teacher *as well as* the supervision of the classroom teacher.

Option 5: Responsibility Shared Between a Regular Teacher and a Special Resource Room Teacher

Having seriously behaviorally disordered/emotionally disturbed students spend part of each day in a resource room staffed by a specially trained teacher has several benefits. The students can receive highly individualized instruction. His/her removal from the regular classroom provides a rest for the classroom teacher and other students, as well as a change for the problem student. A framework is established whereby two professionals share responsibility for a student, with the potential of facilitating optimal growth through cooperative exploitation of the possibilities of each setting. As already mentioned, it is possible for resource teachers to provide some consultation to regular classroom teachers beyond that specific to the needs of the students for whom direct service responsibility is shared. But it is important to protect resource teachers from having too much outside responsibility thrust upon them.

Implicit in the resource room concept is the principle that students (and their problems) are still owned by the regular classroom teacher. The resource teacher is a supporter and consultant to the regular classroom teacher with responsibility for the special student only during the time he or she is in the resource room. By extension, it is important to help all regular classroom teachers understand the resource teacher is not responsible for helping to solve every behavioral problem that arises in the building. Effective resource teachers must have the tact and diplomatic skills necessary to work in buildings where their relationships with regular classroom teachers range from full cooperation to no cooperation at all. A challenging role!

Option 6: Special Class (Day School) Placement

This option carries the special education program for emotionally disturbed students beyond the range of options most appropriate for a single rural district. The number of seriously behaviorally disordered/emotionally disturbed students who are appropriately placed in a special class for more than half of the school day is usually quite small, not more than .5% of the total district enrollment even in large urban districts. Only large total district enrollments provide the stable incidence figures that justify planning an ongoing program of this type. Furthermore, because a sound program needs supplemental staff such as social workers and psychologists in addition to special teachers and aides, and a specially prepared setting, this option is usually cost-efficient only for units of two to four classes, rather than a single class. Thus, in rural areas day school programs are only feasible when operated cooperatively by several districts.

Transportation costs add to the expense of special class programs. And the real cost of such programs is made still greater by the consideration that a special class program should not be established without the existence of a complementary program including several of the previously mentioned options. Without these options, students who do not actually need the restrictive day school placement may be referred because it is "the only available place" for them, and implementing their return to the regular classroom when ready for that transition will be made difficult by the lack of supportive services.

Option 7: Special Class (Residential School) Placement

As noted in the introductory section of this paper, placement in a residential setting was once felt to be optional for seriously behaviorally disordered/emotionally disturbed students. As students of human behavior have come to recognize that much problem behavior and related emotional disturbance is rooted in specific social interactions between a student and his parents, peers, and teachers, they have come to believe that this disturbance can most effectively be treated in the context of these relationships. Thus, an interest in maintaining disturbed students in their home environments whenever possible parallels the emphasis on group and family therapy in psychiatric treatment. And from an economic perspective, even the most expensive conbinations of special day school and outpatient clinical treatment do not approach the cost of good residential care and treatment programs.

However, home or community conditions sometimes make residential treatment necessary. While it is to be hoped that most rural districts would be able to make available to students, their families, and teachers at least Options 1-4, there will be occasions when these do not permit adequate management and therapeutic programs for individual students. For these students, residential placement may be the only alternative.

As already suggested, funding and administrative factors make it extremely difficult for a single school district or even a cooperative unit to set up a residential school. However, a school system can certainly encourage the location of a residential program close enough to permit students weekend visits to their homes by being open to working out cooperative arrangements with the public or private agency running such a program. These cooperative arrangements can take the form of provision of a school program itself, or the payment of tuition to another district that provides the program.

Since the establishment of a new residential program is not likely to be under consideration by many members of this audience, this option will not be discussed in detail.

SUMMARY

Rural schools face unique problems when planning for improved educational opportunities for seriously behaviorally disordered/emotionally disturbed students. Responses that once seemed appropriate do not meet the needs of today. However, rural people have a history of resourcefulness in overcoming these problems that encourages the belief that solutions are possible.

In this paper, the issues of formal eligibility and labeling, funding, transportation, public vs. private, and day school v. residential planning have been discussed, and several service options that appear to offer the greatest potential for meeting this educational challenge briefly described.

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REFERENCES

Bruininks, V. L., & Werdin, C. L. *Education and program assistance in rural areas.* Minneapolis: Upper Midwest Regional Resource Center, University of Minnesota, 1981.

Deno, E. Special education as developmental capital. *Exceptional Children*, 1970, *37*, 229-237.

Dunn, L. M. *Exceptional children in the schools: Special education in transition* (2nd ed.) New York: Holt, Rinehart & Winston, 1973.

Grosenick, J. K., & Huntze, S. L. *National needs analysis in behavioral disorders: A model for comprehensive needs analysis in behavioral disorders.* Columbia: Department of Special Education, University of Missouri, 1979.

Howey, K. R. *Current perspectives and evolving trends in inservice education in the United States,* (prepared for the U.S. OECD Forum of Education Organization Leaders). Minneapolis: University of Minnesota, College of Education, 1976.

Kauffman, J. M. Where special education for disturbed children is going: A personal view. *Exceptional Children,* 1980, *46,* 552-557.

Raiser, L., & VanNagel, C. The loophole in Public Law 94-142. *Exceptional Children.* 1980, *46*, 516-520.

Rubin, R. & Balow, B. Prevalence of teacher-identified behavioral problems. A longitudinal study. *Exceptional Children, 1978,45*, 102-111.

Sher, J. P. *Public education in sparsely populated areas of the United States.* Washington, D.C.: National Institute of Education, 1977.

Wood, F. H. Influence of personal, social, and political factors on the labeling of students. In F. H. Wood (Ed.), *Perspectives for a new decade: Education's responsibility for seriously disturbed and behaviorally disordered children and youth.* Reston, Va.: Council for Exceptional Children, 1981.

Wood, F. H. Full service delivery to mildly emotionally disturbed students. In *Progress or change: Educating the mildly emotionally disturbed.* Program Development Assistance System. Seattle: University of Washington, in press.

Wood, F. H., & Zabel, R. H. Making sense of reports on the incidence of behavioral disorders/emotional disturbance in school-aged populations. *Psychology in the Schools,* 1978, *15,* 45-51.

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Supervision of Teachers of Students with Behavioral Problems in the School Setting: Special Considerations

Louellen N. Essex

ABSTRACT

This paper addresses the unique issues of supervising teachers of students with behavioral problems in the school setting. These issues transcend the general procedures for supervision that are applicable to all teachers and professional staff in the school system. These teachers of behavioral problem students occupy a position which has unusual characteristics and little has been written about specific strategies for supervising them. An underlying assumption of this paper is that schools, teachers, students, and their interactions can best be viewed from an organizational systems point of view. Using this perspective it is then imperative that supervision not be overlooked. Supervision is viewed as a primary factor in influencing the attitudes, morale, and skill development of teachers of behavioral problem students which in turn has significant effect on the emotional and academic growth of their students regardless of what interventions are employed. The author details three primary problem areas which the teacher of behavioral problem students frequently encounters and outlines supervisory strategies to manage each:

1. Role ambiguity. Role ambiguity concerning the teacher's primary responsibility of educator vs. therapist is discussed and supervisory guidelines given for establishing role definition within a clearly defined philosophy.

2. Role isolation. The problem of "one-of-a-kindness" and consequent isolation is considered, particularly relating to teachers in small and middle-sized school districts. Suggestions are given for guiding the teacher to integrate himself/herself into the organizational system.

3. Lack of role differentiation. Since programming for behavioral problem students in schools is a relatively new area, the teacher is often thrust into the role of program developer as well as teacher, often without prior training. Administrative competencies needed for program development are listed and supervisory responsibilities for assisting the teacher to develop these skills are given.

In response to the new demands of public legislation regarding students with special needs, existing roles of school personnel have been altered and new roles have been created as special and regular education move toward a more unified system. Integrating new and altered roles into the educational and

social system of the school setting requires a clear understanding of the needs of special education teachers as well as special education students. Much of the responsibility for guiding this process rests with school administrators and supervisors who are in positions to significantly effect the school climate in a way that may nurture or inhibit integration.

Utilizing an organizational systems perspective (Bobbitt, Brienholt, Doktor & McNaul, 1974; Buckley, 1967), schools can be viewed as consisting of components—individuals, facilities, equipment, etc.—which are further organized into subsystems that may include departmental groups, special committees, office personnel, etc. A single component, of course, can function in one or more subsystem. The school organization achieves its characteristic structure as a system by the way in which the subsystems relate to one another. Increased contact, open communication, and cooperation among subsystems should enable the system to be more adaptive. Strain occurs when one subsystem (such as special education staff) brings new practices into the school which another subsystem (such as regular education staff) resists. Differentiation and integration between and within subsystems is manifested in the interaction of roles which individuals are assigned to fill. Effective integration of new and altered roles into the school organization requires that they be clarified not only to the *role-taker* but also to the *role-reciprocators* (Schmuck, Runkel, Saturen, Martell, & Derr, 1972).

This paper addresses the supervision of one group of special education teachers—those providing services to students with behavioral problems in the school setting. From a systems framework, supervision can be viewed as a primary factor in the process of linking this relatively new teacher role into the school organization. One description of supervision is particularly relevant in this case. Wiles (1955) describes supervisors as follows:

> They are expediters. They help establish communication. They help people hear each other. They serve as liaison to get person into contact with others who have similar problems or with resource people who can help. They stimulate staff members to look at the extent to which ideas and resources are being shared . . . . They make it easier to carry out the agreements that emerge from evaluation sessions. They listen to individuals discuss their problems and recommend other resources that may help in the search for solutions. They bring to individual teachers, whose confidence they possess, appropriate suggestions and materials . . . . They are above all concerned with helping people to accept each other, because they know that when individuals value each other, they will grow through their interaction together, and will provide a better emotional climate for pupil growth. (pp. 8-9)

Supervision, then, can also be seen as having an indirect effect on the progress which a student exhibiting behavioral problems in the school setting may experience. The supervisor is a major influence on the morale and skill development of the teacher of behavioral problem students which in turn can have significant impact on the emotional and academic growth of students regardless of what specific behavioral interventions are employed.

To carry out this point of view regarding supervision in a given school building or district requires an operational supervisory process. Typically a special education lead teacher/coordinator or the building level principal in consultation with special education administrative personnel performs this function. Just as it is important that the teacher's role be clarified, it is imperative

to an efficient and effective school system that supervisory responsibilities in this regard be made explicit.

The teacher of behavioral problem students typically occupies one or more of the three positions within the school setting. The first entails operating a self-contained classroom within the regular school building; the second, serving as a resource teacher (Sindelar & Deno, 1978); the third, performing consultation functions (Miller & Sabatino, 1978) in the regular classroom. The last two of these positions for teachers of behavioral problem students are relatively new and still being integrated into the school organizational system. They require that the teacher assume responsibilities which have the potential to generate role conflict if a specific plan of supervision is not operationalized.

Role conflict is a common cause of stress within an organizational system. It brings together organizational, interpersonal, and personal factors as the individual (in this case the teacher of behavioral problem students) tries to find a set of role expectations which will be acceptable to all (Schmuck et al., 1972). The supervisor of teachers of students with behavioral problems can best address potential role conflicts through awareness of three issues which may emerge and the utilization of supervisory strategies for managing each. The issues are (a) role ambiguity, (b) role isolation, and (c) lack of role differentiation.

ROLE AMBIGUITY

When a teacher of students with behavioral problems enters the public school setting confusion about his/her role may occur. Since the teacher works with students in a manner which may appear "therapeutic," he/she may be perceived as having a role which overlaps significantly with counseling, social work, and/or psychological staff functions. However, the primary responsibility of student academic progress remains with the behavioral problem teacher. This multiple set of expectations can generate role ambiguity and subsequent conflict.

Filley (1975) has delineated several characteristics of social relationships asssociated with conflict. One of these which is applicable here is *ambiguous jurisdiction:* Conflict will be greater when the limits of each party's jurisdiction are unclear. When two parites have related responsiblities for which actual boundaries are unclear, the potential for conflict between them increases. Conversely, when role definitions are clear, each party can expect a certain behavior from the other. Organizations define boundaries through such tools as job descriptions.

The teacher of students with problem behaviors in the school setting should work within the scope of a clearly defined job description which addresses the boundaries between his/her work and that of other support staff in the school organization. This job scope should be made known to all school professionals and form the basis for hiring the behavioral problem teacher. Ideally, the job description should be written with input from all appropriate building-level staff under the guidance of the supervisor for that position.

A job description typically begins with a concise statement showing basic responsibilities the employee is to carry out and the education and/or training required to do so delineated. Next, the broad areas of responsibility are outlined in more detail by breaking them into subcomponents. Finally, a list of individual attributes thought necessary to perform the job successfully is given (Maas & Nichols, 1976).

In addition to these standard components of a job description, another segment is important to include for the teacher working with behavioral problem students. A statement of theoretical orientation which is expected to form the basis for student intervention and for determining how other support staff will interact with the teacher is recommended. Mackie, Kvaraceus and Williams (1957) profiled four characteristics of the ideal teacher of socially and emotionally maladjusted children. One characteristic which emerged was: Capable of providing counseling for students consistent with the therapeutic program supplied by other treatment sources. This principle can be applied to the current role of the behavioral problem teacher in the school setting who must strive to blend his/her behavioral management planning with the work of other professionals.

Six categories of theory regarding child variance have been identified (Rhodes & Tracy, 1972): Behavioral, sociological, ecological, psychodynamic, biogenetic, and counter theory. While it may be possible to form a program for students with behavioral problems utilizing a variety of theories, some are more difficult to mesh with one another than others. And, given that consistency is an important variable in programming for behavioral problem students, it is important that the theoretical perspective(s) employed by the teacher be (a) compatible with that employed by other staff in their therapeutic work with students who will be serviced jointly, and be (b) compatible with the perspective employed by the school administration in its general school-wide discipline plan.

If a clearly defined job description of this nature is not implemented for the teacher of behavioral problem students, three problems may emerge. First, the teacher's role may be viewed as conflictual with the support staff and cooperation may be difficult to obtain. On the other hand, if support staff has had input into the development of the job description, a framework for cooperation is present before the teacher enters the system. Second, the teacher's efforts to mainstream the student may be hindered since the behavioral management plan has not meshed with the school-wide discipline plan. For example, if the behavioral problem teacher employs a psychodynamic mode of intervention for a given student which includes much relationship-building as a means of modifying behavior and de-emphasizes limit-setting while the school administration utilizes a rigid (disciplinary) method focused on negative consequences, the student's movement in and out of the mainstream may be more difficult than if the approaches were similar. Third, staff persons working with a given student may undermine each other if they are working from different perspectives which are clearly in conflict, sabotaging the behavioral management plan and the student's subsequent chance for success.

The supervisor of the teacher working with behavioral problem youth must focus on providing a job description which clearly frames that teacher's role in the school setting within a theoretical framework consistent with that employed by the administration and support staff. In addition, the supervisor should carefully monitor the coordination of the teacher's behavioral management planning with service provided by other professionals in the school environment.

ROLE ISOLATION

Knobock and Goldstein (1971) have described the phenomena of the "lonely teacher" wherein they maintain that many regular classroom teachers feel separate from each other and are in need of appropriate feedback and support from other adults in the school. Not receiving such support can lead to feelings of negative self-worth and over-reliance on the feedback of children. This problem becomes compounded for the teacher of behavioral problem students, particularly if that teacher is in a rural or middle-sized school district where he/she may be one-of-a-kind. The uniqueness of the role and the lack of other teachers doing similar work may result in role isolation and the lonely teacher phenomenon.

This problem may not be due, however, to the school organizational dynamics alone. While every organization requires some conformity with an authority structure as well as compliance with uniform rules and policies, mental health professionals seem to value just the opposite—autonomy (Feldman, 1980). The teacher of behavioral problem students can be viewed as both a mental health professional and a teacher and consequently may experience a strong need for autonomy which is easily obtained through the role isolation of the position. If this problem exists, the teacher can have difficulty establishing the relationships necessary to effectively integrate students into the mainstream.

The supervisor can address this problem by guiding the teacher through a process of integrating him/herself into the mainstream—mainstreaming the teacher of behavioral problem students. In light of the systems approach to school organizations, the extent to which the teacher is integrated into the whole school environment can affect the degree to which the student can be effectively mainstreamed and/or programmed jointly by the teacher and other school personnel.

Several elements are necessary for this mainstreaming to occur. The supervisor can assist the teacher in evaluating the extent to which he/she is mainstreamed by asking these questions and developing with the teacher activities to affirm each:

1. What involvement does the teacher have with regular education students? Activities might include advising extra-curricular activities, coaching, conducting a homeroom or study hall.

2. What general school duties does the teacher perform? Duties might include monitoring hallways between classes, lunchroom responsibilities, performing bus duty.

3. To what degree does the teacher maintain social contact with regular classroom personnel within the school day? This might include participation in social events, utilizing the staff lounge regularly, interacting with school staff about subject matter other than behavioral problem students.

Another potential contributor to a teacher's role isolation is consultation functions with mainstream teachers. Three competency areas of the specialist role (Reynolds, 1978) have been identified for special education staff working in the regular classroom. They include (a) competencies in consultative functions, (b) ability to diagnose classroom and family situations, and (c) training skills needed to instruct other workers. While these skills may be necessary to the professional in the consulting role, they potentially isolate the specialist (in this case, the teacher of behavioral problem youth) even further from his/her peers if these functions are perceived as indicative of a peer attempting to

supervise a peer. The consultant can be viewed as stepping into areas inappropriate for a teacher's peer to enter.

The supervisor must be careful that the teacher is not put in a double-bind situation. This can occur when the teacher is requested to perform two incompatible tasks simultaneously; for instance, (a) integrate himself/herself into the social organization of the school as a colleague to other teachers, and (b) view himself/herself as a consultant who assesses other teacher's problems and directs them to change given teaching behavior. The two expectations are incompatible if the consultation function is viewed as a mechanism for evaluating the mainstream teacher's competence, especially negatively.

The supervisor of the teacher of behavioral problem students can sensitize the teacher to the dangers of the consultant role and develop strategies which allow that teacher to be viewed as a peer alone. The following guidelines provide the supervisor with strategies to give the teacher who is working in this consultative mode:

1. Establish rapport with the teacher before beginning consultation.
2. Obtain agreement from the classroom teacher for consultation to occur.
3. View yourself as working jointly with the teacher to solve a problem and frame your interactions with the teacher in that manner.
4. The classroom teacher is in charge of his/her environment and should have the right to accept or reject your suggestions. Give the teacher several ideas to try rather than one set response.
5. Make a commitment to "stick with" the problem. Don't abandon the classroom teacher after an initial problem-solving session.
6. Avoid judgmental statements about the teacher.

LACK OF ROLE DIFFERENTIATION

An effective organizational system creates a functional division of labor which allows each subsystem and ultimately each individual to determine a set of tasks to perform which are distinct from those performed by others. At the same time, the interdependence of the various subsystems requires integration in order to achieve unified, collaborative functioning (Lorsch & Lawrence, 1970). Within a school organization, administrative functions are typically differentiated from teaching functions. However, multiple role-taking, particularly in a small subsystem, can serve to coordinate related activities given that the overlapping areas of responsibility are clarified and carefully synchronized (Schmuck et al., 1972).

The recent development of school-based programs for behavioral problem students requires that teachers hired to work in them are often expected not only to teach this special population of youth but to develop the actual educational program as well. This is particularly true in rural school districts. While a new teacher to the field may have training to work with students, the administrative skills this expectation requires cannot be assumed to be part of the teacher's training. The viability of placing program development responsibilities within the role dimensions of the teacher alone without supervisory support is questionable. It seems that a shared responsibility mode between the supervisor and teacher may be more appropriate given that many administrative competencies are needed to design a program for behavioral problem students. This requires that the teacher be guided in performing multiple roles.

Polsgrove and Reith (1980) have delineated a comprehensive set of competencies required by teachers of emotionally disturbed and behaviorally disordered youth. One subgroup of these competencies is administrative skills which are needed for program development. Table 1 provides a further listing of these competency areas with specific tasks outlined and supervisory responsibilities given for assisting the teacher in developing skill in each competency area. The supervisor can use this tool in assessing the teacher's strengths and weaknesses, supporting the teacher's growth in building competency in deficient areas, and coordinating the administrative and teaching functions of program development.

TABLE 1

Supervisory Guidelines for Assessing and Developing Administrative Competencies for Teachers of Students with Behavioral Problems

Teacher Competency*	Supervisory Responsibilities
1. Establishes and maintains classroom.	
a. Conceptualizes the program model.	a. Provide examples of written models from other programs.
b. Determines physical arrangement of classroom space.	b. Provide appropriate reference material, including diagrams of various room arrangements.
c. Determines material/equipment needs.	c. Provide catalogs, budget information, equipment checklist.
2. Demonstrates knowledge of rules, regulartions, and policies.	
a. Understands due process, confidentiality, nondiscriminatory testing, suspension, free and appropriate education.	a. Provide federal, state and local district information.
3. Establishes a system for referral, assessment, IEP development and periodic review.	
a. Becomes familiar with general school district procedures.	a. Provide state, district forms/policies.
b. Adapts general format to behavioral problem students.	b. Ensure system is coordinated with other special education systems.
c. Outlines flow of each staff and parent communication and paper work.	c. Provide sample flow charts, diagrams.
d. Utilizes multi-disciplinary team concept.	d. Assist teacher in determining appropriate team members for each process.

TABLE 1 *(continued)*

Teacher Competency*	Supervisory Responsibilities
4. Functions as a team member for planning social and educational interventions with students.	
a. Understands his/her responsibilities in team interaction.	a. Provide descriptions of team purposes, role descriptions, procedures to be employed.
b. Communicates effectively with other team members.	b. Provide written guidelines for team communication and give feedback to the teacher regarding his/her interaction in team. c. Initiate building-wide inservice in team building to include these topics: Characteristics of effective work groups, time management, communication, and conflict resolution.
5. Keeps appropriate records.	
a. Develops and/or utilizes forms for: Assessment/observation results, progress charting, critical incidence reports, medication log, due process requirements, parent contact.	a. Provide all forms available in the district and models for new forms to be created.
6. Writes appropriate reports on student progress.	
a. Utilizes a clear, succinct writing style, minimizing professional jargon.	a. Provide sample formats and critique the teacher's written progress reports.
7. Knows where to secure financial and material resources for implementing instructional programs.	
a. Develops awareness of district procedures.	a. Provide district procedures for securing funds.
b. Develops awareness of state and federal fund availability.	b. Provide information related to state and federal funding sources and guidelines for proposal writing.
8. Plans and conducts inservice programs.	
a. Determines inservice needs of building-level staff.	a. Provide examples of needs assessment formats and procedures.
b. Designs and organizes presentation appropriately.	b. Provide material or training in inservice presentation techniques, co-train for initial inservice sessions to provide model.

Table 1 *(continued)*

Teacher Competency*	Supervisory Responsibilities
c. Presents in a manner which is interesting and clear.	c. Provide resources for teacher to observe other trainers performing similar inservice tasks.
d. Utilizes evaluation methodology.	d. Provide sample evaluation formats and techniques for data analysis.

* Adapted from Polsgrove and Reith, 1980.

SUMMARY

The teacher of students exhibiting behavioral problems in the school setting occupies a role in the school organizational system having characteristics which must be addressed through carefully developed supervisory practices. The organizational systems perspective offers valuable insight to the supervisor. The teacher alone cannot be responsible for creating an environment within the system which will promote his/her opportunity to be integrated into the school setting in a way which is clearly understood by other school personnel. And the teacher's skill development in areas which are new to him/her must be addressed in a manner that provides support for ongoing growth.

The intended outcome of high-quality supervisory practice is a healthy climate within the school environment and the classroom for behavioral problem students which will influence the emotional and academic growth of the students being served. When the teacher feels amply supported, growing in skill development and professional relationships, the students are likely to feel the impact in their interactions with the teacher. Responsibility for behavioral change in students exhibiting difficulty in the school should not rest with the student alone but rather the organizational dynamics, including teacher and supervisor behavior, should be viewed as important change agents.

REFERENCES

Bobbitt, H., Brienholt, R., Doktor, R., & McNaul, J. *Organizational behavior: Understanding and prediction.* Englewood Cliffs, N.J.: Prentice-Hall, 1974.

Buckley, W. *Sociology and modern systems theory.* Englewood Cliffs, N.J.: Prentice-Hall, 1976.

Feldman, S. The middle management muddle. *Administration in Mental Health,* 1980, *8*, 3-11.

Filley, A. *Interpersonal conflict resolution.* Glenview, Ill.: Scott, Foresman, 1975.

Knobock, P., & Goldstein, A. *The lonely teacher.* Boston: Allyn & Bacon, 1971.

Lorsch, J., & Lawrence, P. *Studies in organizational design.* Homewood, Ill.: Richard D. Irwin and Dorsey Press, 1970.

Maas, J., & Nichols, C. Recruitment and selection of staff. In R. Weatherman & J. Wolf (Eds.), *Special education administration training program.* Minneapolis: University of Minnesota, 1976.

Mackie, R., Kvaraceus, W., & Williams, H. *Teachers of children who are socially and emotionally maladjusted.* Washington, D.C.: U.S. Government Printing Office, 1957.

Miller, T., & Sabatino, D. An evaluation of the teacher consultant model as an approach to mainstreaming. *Exceptional Children,* 1978, *45,* 86-91.

Polsgrove, L., & Reith, H. A new look at competencies required by teachers of emotionally disturbed and behaviorally disordered youth. In F. Wood (Ed.), *Teachers for secondary school students with serious emotional disturbance.* Minneapolis: University of Minnesota, 1980.

Reynolds, M. Basic issues in restructuring teacher education. *Journal of Teacher Education,* 1978, *29,* 25-29.

Rhodes, W., & Tracy, M. (Eds.). *A study of child variance. Vol. 1: Conceptual models.* Ann Arbor: University of Michigan Press, 1972.

Schmuck, R., Runkel, P., Saturen, S., Martell, R., & Derr, C. *Handbook of organizational development in schools.* Eugene: University of Oregon, 1972.

Sindelar, P., & Deno, S. The effectiveness of resource programming. *Journal of Special Education,* 1978, *12,* 17-28.

Wiles, K. *Supervision for better schools.* Englewood Cliffs, N.J.: Prentice-Hall, 1955.

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Learning Characteristics of Children and Adolescents With Various Psychiatric Diagnoses

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ABSTRACT

Various problems in classification of children and adolescents with school behavioral problems have long been evident; and schools have recently begun to rely more heavily on ancillary professionals such as psychiatrists for diagnostic assistance. DSM III diagnoses of 82 patients were analyzed as a means of examining the new system of psychiatric classification in relation to school behavioral problems. Achievement, intellectual levels, and tentative special education categories were compared for various patients by age, sex, and diagnostic category. Implications for interdisciplinary evaluation and diagnosis were discussed.

Recent studies have examined the question of discrepancies and inconsistencies in special education classification of children and adolescents with various emotional and behavioral disorders. Olson, Algozzine, and Schmid (1980) asked teachers to specify behaviors characteristic of children with various levels of emotional disturbance. Though there was some agreement regarding mild and severe disturbance, no concensus was obtained regarding children who fell between those two extremes. Similar vagueness was found in teacher perceptions by Kelly, Bullock, and Dykes (1977). Inconsistencies have also been evident in analyses of state definitions for behavioral disorders (Epstein, Cullinan, & Sabatino, 1977; Garrett & Brazil, 1979; Wells, Stoller, Schmid, & Algozzine, 1980). The problem has been found to be even more complicated when a child manifests a behavioral disorder accompanied by learning or intellectual deficits, since diagnosticians are often uncertain as to the appropriate special education category for such a child (Johnson, 1980).

It is thus not surprising that little relationship exists between educational classification systems and those used by other professions. Forness and Cantwell (1982) found little, if any, correlation between educational classifications of children hospitalized for learning or behavioral disorders and their current psychiatric diagnoses according to the recent third edition of the APA Diagnostic and Statistical Manual (American Psychiatric Association, 1980). Although *DSM III*, as it is called, represents a recent attempt to define operationally a large number of psychiatric syndromes using behavioral criteria, several children

with the same psychiatric diagnosis appeared in several different educational categories. Some of the inconsistencies were probably inherent in the fact that special education categories are themselves rather vague and nebulous and vary widely from district to district. Thus, for example, in some districts in California, classes designated *Learning Handicapped* might include students who have attentional deficit disorders, hyperactivity, intellectual deficits, learning disorders, conduct problems, and a variety of emotional or behavioral disorders.

Examining the relationship betweeen educational and psychiatric classification systems, however, remains important. Each profession has developed its own nomenclature, and each has done so with differing purposes in mind. It is clear that assumptions underlying psychiatric diagnosis are that specific treatments will follow given diagnosis. Not only is this assumption usually not made in special education, but a great deal of evidence on harmful effects of labeling has led educators to be wary of using specific diagnostic categorization. Nonetheless, this has led to several potential barriers to communication between psychiatric agencies and public schools. This barrier detracts from the exchange of information between educators and psychiatrists or psychologists and may thus detract from the ability of each profession to serve children or adolescents with emotional or behavioral disorders. With increased participation of psychiatrists and clinical psychologists in planning of educational programs under new federal laws, there is more urgency for each profession to be familiar with the nomenclature of the other.

The present study is therefore an attempt to investigate educational characteristics of children and adolescents with various psychiatric diagnoses, including possible relationships among IQ, achievement, psychiatric diagnosis, and special education classification. It is hoped that such information might serve as a first step in facilitating understanding between educators and mental health professionals.

METHOD

Data was gathered on 82 inpatients admitted between June 1980 and June 1981 to the four child psychiatric wards of the UCLA Neuropsychiatric Institute (NPI). These patients ranged in age from 6 to 23. All were admitted specifically for emotional or behavioral disorders, although a few of these patients also had accompanying developmental disorders. patients attended school for 3 hours daily in the inpatient NPI School. There were some 60 students enrolled in the school program at any one time.

Subjects were selected for study only if they had complete diagnostic information available in the medical chart, including psychiatric diagnoses, achievement and IQ testing, and special education diagnoses. The 82 subjects were thus selected from over 200 subjects admitted during the course of the year; but the criterion of complete records did not appear to bias the selection of subjects for the present study in any systematic way, based on comparison of these 82 subjects with the total sample in terms of age, sex, or date of admission.

NPI classroom teachers administered the Comprehensive Test of Basic Skills, (CTBS), determined the classroom assignment, and requested intelligence testing on each child or adolescent admitted for treatment at the NPI. The WISC-R or WAIS was administered by clincal psychologists assigned to each inpatient ward. At discharge, NPI school teachers had the responsibility

for determining appropriate classroom placement for each student. The actual classroom placement secured for each child or adolescent was obtained from NPI teacher records. It was decided to use this *postdischarge* special education designation as the basis for special education classification since the reason for referral to NPI frequently had little to do with school-related problems. Thus the postdischarge special education classification was felt to be a more accurate assessment of the child's special education needs.

Because there tends to be a lack of consistency in nomenclature used by the more than 100 different school districts which NPI serves, the following scheme was used to classify classroom placements:

1. Full-time placement in a regular classroom with no supportive services;
2. Regular classroom placement with a resource room, consulting teacher, speech therapist, etc.;
3. Primary placement in special classes for the educationally handicapped, which in California includes learning disabled and behaviorally disordered students;
4. Primary placement in EMR classes for the mildly retarded;
5. Fulltime placement in classes for the seriously emotionally disturbed;
6. Fulltime placement in TMR classes for the moderately to severely retarded;
7. Fulltime placement in a class for aphasic, speech or language handicapped;
8. Fulltime residential placement due to educational needs.

While a more comprehensive review of *DMS III* is available in Forness and Cantwell (1982), it should be mentioned here that five diagnostic axes may be used in the complete diagnosis of each child: (a) The clinical psychiatric syndrome; (b) related personality or developmental disorders; (c) current physical problems; (d) severity rating of psychosocial stressors; and (e) highest level of adaptive functioning in the past year. The principal diagnosis is usually listed on Axis I and consists of a five-digit code (e.g., 314.01 Attention Deficit Disorder with Hyperactivity). These are listed under major groupings of syndromes including Mental Retardation, Attention Deficit Disorder, Conduct Disorder, Anxiety Disorders of Childhood or Adolescence, Eating Disorders, Pervasive Developmental Disorders, Substance Use Disorders, Schizophrenic Disorders, Psychotic Disorders Not Elsewhere Classified, Affective Disorders, Anxiety Disorders, Somatoform Disorders, Adjustment Disorders, Personality Disorders, and "V" Codes for Conditions Not Attributable to a Mental Disorder That Are a Focus of Attention or Treatment. The richness and complexity of each diagnostic category is evident in even a cursory view of the *DSM III* manual, which is nearly 500 pages in length. There are nearly 50 separate entries exclusively for children and adolescents and nearly 200 entries for adults (on which children may also be diagnosed). Each entry contains operational criteria for diagnosis, associated features, age at onset, course of the disorder, complications, predisposing factors, prevalence, sex ratio, familial pattern, and differential diagnoses.

DSM III diagnoses were taken from discharge summaries in medical records. Diagnoses were made by case coordinators under supervision of their respective ward psychiatrists. Case coordinators assigned to the four children's wards were child psychiatry fellows, psychiatry residents, and psychology interns. Each admitted from 4 to 12 patients at any one time during the year. Case coordinators had been trained in the use of the new multiaxial system by a faculty child psychiatrist (Dennis P. Cantwell, M.D.) who had been a member of the APA task force responsible for the development of *DSM III*. In both psychi-

atric and special education diagnoses, the case coordinator's or teacher's judgment of the *primary* classification was recorded. Thus only the *principal DSM III* diagnosis was recorded, and only the teacher's judgment of the *most important* special education category was listed, for each case. The number of additional *DSM III* diagnoses, on Axis I through III, was also obtained, however, as a measure of multiple psychiatric or associated developmental problems. Analyses were completed using the Statistical Analysis Systems (SAS Institute, 1979).

RESULTS

Descriptive information on the 82 subjects is presented in Table 1. The sample was divided for purposes of illustration into elementary, junior high school, and senior high school groups. Since there was a disproportionate number of males, *t*-tests (pooled variances) were used to determine if there were differences between the sexes. There were no statistically significant differences between males and females in terms of age, full scale IQ, verbal or performance IQ, and reading or math achievement. Only one such variable, reading achievement, approached significance ($t = 1.93$, 80 *df*, $p<.057$).

One-way ANOVA's were then used to determine if there were differences among the three subgroups of grade placement. Grade placement was used simply as a means to divide the sample for purposes of further illustration and did not, of course, represent the actual grade placement of the subjects. It was determined simply by chronological age as follows: Elementary (age 6 through 11), Junior High (ages 12 through 14), and Senior High (ages 15 through 23). There were no statistically significant differences among the three subgroups in full scale IQ or verbal or performance IQ. It should be noted that the full scale IQ range was 40 to 135. There were, however, differences in reading and math achievement as expected (F's = 10.03 and 8.68 respectively, 2/79 *df*, $p<.001$). Post-hoc analyses revealed that differences occurred between the elementary subgroup and the two secondary subgroups. It was thus decided on the bases of the above analyses to report subsequent psychiatric data by combining the sexes but separating the age-grade placements into two subgroups: elementary and secondary (junior and senior high).

There were 45 different principal *DSM III* diagnoses which were used to characterize the total sample of 82 subjects. These fell into 18 different categories of *DSM III* diagnoses. Of the 82 subjects, 45 were diagnosed by "disorders usually first evident in infancy, childhood, or adolescence," as classified in the *DSM III* manual, and the remainder by categories used to classify both adults and children. Only six specific syndromes were used to diagnose 5% or more of the sample: 312.21 conduct disorder, socialized, nonaggressive (7 subjects); 312.23 conduct disorder, socialized, aggressive (5 subjects); 312.10 conduct disorder, undersocialized, nonaggressive (4 subjects); 314.01 attention deficit disorder with hyperactivity (5 subjects); 314.00 attention deficit disorder without hyperactivity (4 subjects); and 317.00 mild mental retardation (4 subjects).

Since there was such a wide range of diagnostic categories used, it was decided to collapse these into categories which might more easily lend themselves to logical description and simple analyses. These are presented in Table 2 by collapsed categories. These collapsed categories were formed by the following combinations: Mental retardation (includes mental retardation, pervasive developmental disorders); schizophrenic/psychotic (includes schizo-

TABLE 1

Description of Sample by Age-Grade Placement

Grade	N	Percent Male	Age		IQ		Verbal Perf.		Read. Achieve.		Math. Achieve.	
			Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Elementary	43	70%	9.9	2.2	93.5	21.6	90.6	97.6	4.3	3.3	4.0	2.9
Junior High	25	48%	14.3	0.9	95.2	17.8	97.0	94.9	7.6	3.5	7.1	3.9
Senior High	14	57%	17.6	2.1	85.3	19.5	87.4	84.8	8.0	4.2	7.3	4.0
Total	82	61%	12.6	3.5	92.6	20.2	92.1	94.6	5.9	3.9	5.5	3.8

phrenic disorders, psychotic disorders not elsewhere classified); somatic disorders (includes eating disorders, other disorders with physical manifestations, substance use disorders, somatoform disorders); anxiety/affective (includes anxiety disorders of childhood or adolescence, anxiety disorders, major affective disorders); personality disorders (includes other disorders of infancy, childhood, or adolescence; personality disorders not coded on Axis II); conduct disorders, aggressive (includes atypical and both socialized and undersocialized conduct disorders); conduct disorders, nonaggressive (includes both socialized and undersocialized conduct disorders); adjustment disorders (same as *DSM III*); attention deficit disorders (includes those with and without hyperactivity). Also present in Table 2 are the mean number of diagnoses made on all three axes for each of the collapsed categories, and the sex distribution for each of the categories.

TABLE 2

Frequency of Principal DSM III Diagnoses by Major Categories

Diagnostic Category	Elem.	Sec.	Total	Percent Male	Mean # of Dx's
Mental Retardation	5	3	8	75%	2.1
Schizphrenic/Psychotic	7	5	12	91%	1.5
Somatic Disorders	3	6	9	22%	2.0
Anxiety/Affective Disorders	6	3	9	33%	1.4
Personality Disorders	1	6	7	40%	1.4
Conduct Disorders, Aggressive	7	3	10	80%	1.6
Conduct Disorders, Nonaggressive	6	5	11	73%	1.8
Adjustment Disorders	3	4	7	73%	1.7
Attention Deficit Disorders	5	4	9	100%	2.1
Total	43	39	82	61%	1.7

To determine the general educational characteristics of subjects in each of these collapsed categories, mean IQ, verbal-performance IQ discrepancies, underachievement, and special education diagnostic categories were computed for each category. Since many of these cells (by *DSM III* category and special education classification) contained "0" values, the special education classifications were themselves collapsed as shown in Table 3. Classifications 1 and 2 are the same as those designated in the "methods" section above (regular classes and regular class with ancillary help.) Classification 3 was formed by combining items 3 and 4 (both types of special classes for the *mildly* handicapped); and classification 4 was formed by combining all three types of special classes for the *severely* handicapped). Classification 5 is the same as item 8

(residential school). Underachievement was computed by subtracting 5 years from mental age and subtracting actual grade-level achievement from this "expected achievement."

As illustrated in Table 3, the highest mean IQ was found in subjects with somatic disorders and the lowest in the mentally retarded. The largest verbal-performance IQ discrepancy was found in the children with conduct disorders of the aggressive type, in which their performance IQ was more than 10 points higher on the average than their verbal IQ. In reading, the mentally retarded subjects were achieving 2.4 years below expected while those with anxiety/affective disorders were .3 years above expected grade level. In math, the subjects with personality disorders were 2.8 years below expected while those with somatic disorders were .9 years above expected grade level. Note also that considerable variability exists in the distribution of subjects in each *DSM III* category in regard to their special education classification. Virtually every category of diagnosis has at least on subject in a regular class or resource room setting; and with only three exceptions, every category has at least one subject in a class for the severely handicapped or a residential type of school situation.

Among the nine collapsed *DSM III* categories depicted in Table 3, there appeared to be no statistically significant differences in age, verbal-performance IQ discrepancy, or underachievement in reading or math (F's = .69, 1.79, .97, and 1.85 respectively, 8/73 *df*, NS). There were, however, statistically significant differences in IQ (F =3.15, 8/73 *df*, p<.005) which appeared to be accounted for by the low IQ of the mentally retarded subjects and the relatively high IQ of the somatic disorders group. Using the special education classification in Table 3 as a 5-point scale of severity of educational need, there appeared to be statistically significant differences among the nine *DSM III* categories (F = 4.83, 8/73 *df*, p<.001), accounted for primarily by regular class placements for subjects with somatic and anxiety/affective disorders.

DISCUSSION

What is perhaps most striking about these findings is that there is little apparent concordance between the diagnostic system used in psychiatry and that used by special educators to classify children for school placement. Even when *DSM III* categories are collapsed into relatively broad groups of subjects with major symptoms in common, this continues to be the case. Except for some differences in full-scale IQ, age or related intellectual or academic characteristics seem to be relatively evenly spread across subjects in all nine major *DSM III* categories. These data are not, of course, conclusive; and the relatively small sample of subjects in each collapsed diagnostic category should serve as a caution against premature conclusions. Classroom placements do tend to differ somewhat.

There are nonetheless some rather interesting trends in regard to certain *DSM III* groupings. For example, sex distribution in the somatic disorders category is in marked contrast to the high frequency of males in both the sample at large and in certain other categories in particular; i.e., schizophrenic/psychotic disorders and attention deficit disorders. This was accounted for primarily by a high number of subjects in this category with eating disorders, such as anorexia nervosa, in which females tend to predominate. Clinical impressions of this disorder also tend to support a high level of intellectual productivity as a defense mechanism, which tends to be reflected in the data in

TABLE 3

Educational Characteristics of Children in DSM III Categories

Diagnostic Disorders	Mean IQ	VIQ-PIQ Discrepancy	Underachievement		Special Education Classification*				
			Read.	Math.	1	2	3	4	5
Mental Retardation	67.4	-4.3	-2.4	-1.5	2	0	5	1	0
Schizophrenia/Psycho.	90.5	-5.2	-.9	-1.7	0	1	5	3	3
Somatic	108.7	3.9	-.8	.9	5	3	1	0	0
Anxiety/Affective	95.8	3.1	.3	-.8	4	2	3	0	0
Personality	100.6	-6.6	-.1	-2.8	2	1	3	0	1
Conduct, Aggressive	94.7	-10.3	-.8	-1.7	1	2	4	3	0
Conduct, Nonaggressive	87.0	-.4	-1.7	-1.4	0	1	4	3	3
Adjustment	93.8	-1.2	-1.7	-2.0	2	0	3	0	2
Attention Deficit	96.2	-1.7	-1.7	-2.4	0	1	8	0	1
TOTAL	92.6	-2.5	-1.1	-1.5	16	11	36	10	9

* **Legend:** 1 = regular class, 2 = resource room, 3 = self-contained class for mild handicaps, 4 = self-contained class for severe handicaps, 5 = residential class.

this study. Anxiety and affective disorders are also characterized by a similar level of relatively good achievement and less restrictive classroom placement.

The large number of subjects diagnosed as behaviorally disordered (i.e., conduct disordered or with adjustment disorders) is also interesting. One third of the sample are so diagnosed. Again, there are a high percentage of males (roughly three out of four) and some striking similarities in levels of underachievement. The more aggressive subjects in these groups, however, show a relatively high performance IQ and also tend towards slightly more normalized classroom environments. Although adjustment disorders, per se, are seen in *DSM III* as resulting from a recent acute "psychosocial stressor," subjects in this group do not necessarily appear any better off academically than subjects with conduct disorders, which are seen as more chronic conditions.

The subjects with attention deficit disorders in this sample are relatively low in achievement much the same as the behaviorally disordered groups described above. It is interesting that, even when one considers subjects with attention deficits as part of the behaviorally disordered group, this total group seems somewhat worse off in academic achievement in some areas than the schizophrenica/psychotic group. This agrees with observations of others who have questioned the general assumption that cognitive functioning in this latter group, which might be termed seriously emotionally disturbed, is indeed necessarily as low as that of other children with behavioral problems (Baker, 1979; Letteri, 1979; Vacc & Burt, 1980).

One can only conclude from this data that considerable caution is in order when attempting to generalize from psychiatric diagnosis to educational needs. Wide variation is the norm rather than the exception in each *DSM III* category. Other classification schemes, such as the Behavior Problem Checklist (Quay, 1972) or the Achenbach Scales (Achenbach, 1966), may be slightly more relevant to educational intervention; but, like *DSM III*, these may be useful only in establishing eligibility for federally mandated services and not entirely relevant to classroom programming. These instruments are, moreover, less specific and detailed than *DSM III*. Though the findings in the present study are, of course, preliminary in nature, they suggest that a certain skepticism continues to be healthy when applying psychiatric findings to school situations.

REFERENCES

Achenbach, T. M. The classification of children's psychiatric symptoms: A factor-analytic study. *Psychological Monographs,* 1966, *80* (No. 615).

American Psychiatric Association. *DSM III: Diagnostic and statistical manual of mental disorderrs.* Washington, D.C.: Author, 1980.

Baker, A. M. Cognitive functioning of psychotic children: A reappraisal. *Exceptional Children,* 1979, *45,* 344-348.

Epstein, M. H., Cullinan, D., & Sabatino, D. S. State definitions of behavioral disorders. *The Journal of Special Education,* 1977, *11,* 417-425.

Forness, S. R., & Cantwell, D. L. *DSM III* psychiatric diagnoses and special education categories. *Journal of Special Education,* 1982, *6,* 49-63.

Garrett, J. E., & Brazil, N. Categories used for identification and education of exceptional children. *Exceptional Children*, 1979, *45*, 291-292.

Johnson, V. Analysis of factors influencing special education decisions. *Journal of School Psychology*, 1980, *18*, 191-202.

Kelly, T., Bullock, L., & Dykes, M. Behavioral disorders: Teacher's perceptions. *Exceptional Children*. 1977, *43*, 316-317.

Letteri, C. A. The relationship between cognitive profiles, levels of academic achievement, and behavioral problems. in R. B. Rutherford & A. G. Prieto (Eds.), *Severe behavior disorders of children and youth* (Vol. 2). Reston, Va.: Council for Children with Behavioral Disorders, 1979.

Olson, J., Algozzine, B., & Schmid, E. Mild, moderate and severe EH: An empty distinction? *Behavioral Disorders*, 1980, *5*, 96-101.

Quay, H. C. Patterns of aggression, withdrawal, and immaturity. In H. C. Quay & J. S. Werry (Eds.), *Psychopathological disorders of childhood*. New York: Wiley, 1972.

SAS Institute. *SAS Users Guide*. Raleigh, N.C.: Statistical Analysis Systems, Inc., 1979.

Vacc, N. A., & Burt, M. A. Assessment of cognitive complexity with emotionally handicapped children. *Behavioral Disorders*, 1980, *5*, 180-185.

Wells, D., Stoller, L., Schmid, R., & Algozzine, B. Trends in definitions for emotionally handicapped and/or learning disabled adolescents. in R. B. Rutherford, A. G. Prieto, & J. E. McGlothlin. *Severe behavior disorders of children and youth* (Vol. 3). Reston, Va.: Council for Children with Behavioral Disorders, 1980.

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Social Skills Training for Withdrawn Children

Marilyn J. Haring

Encouraged by reports of successful interventions with withdrawn children (cf. Strain, Shores, & Timm, 1977), helping professionals increasingly have attempted to shape the social behavior of withdrawn children. Results of those efforts, however, have been mixed. For every reported success, there appear to be numerous failures in which social behavior did not increase or did not maintain over time.

Based on the literature and also on the author's experiences in working with withdrawn children, certain training issues seem especially important to the success of interventions with this population. The purpose of this paper is to identify and explore those issues: (a) Why social skills training? (b) Who should be trained — confederates or withdrawn children? (c) Should children be trained alone or in small groups? (d) What are effective training techniques? (e) What are successful training activities? (f) After training, should prompts be used? Discussion of these issues will focus on young children who infrequently interact with peers but who, as Scarlett (1980) suggested, fall within a normal range of intelligence.

ISSUES

Why Social Skills Training?

Social skills training is but one of the ways by which social behaviors have been increased. It can be a powerful and lasting intervention but may require more effort than some other approaches. Positive reinforcement, for example, has been used widely either with withdrawn children or with confederates to increase social interaction (Buell, Stoddard, Harris, & Baer, 1968; Kirby & Toler, 1970; Strain, Shores, & Kerr, 1976; Strain, Shores, & Timm, 1977; Strain & Timm, 1974; Walker & Hops, 1973). However, difficulties associated with positive reinforcement for increasing social behavior arise from two assumptions which can be faulty. First, often it is assumed that the withdrawn child has an adequate repertoire of social skills and simply needs reinforcement to use those skills. But many withdrawn youngsters do not possess even rough approximations of social behaviors which can be shaped readily by reinforcement. Second, it can be misleading to assume that intrinsic reinforcement (satisfaction) will result from social interaction and will maintain social behaviors of withdrawn children once contingent reinforcement has been withdrawn. Strain and Timm (1974), for example, found they could reinforce and increase social initiations by their withdrawn preschooler, but data in the final baseline revealed low rates of social initiations which were about the same as preintervention levels. Although

normally social individuals are reinforced by social interaction, withdrawn children often take several months before interaction by itself is reinforcing —assuming that, in fact, it does become reinforcing.

A second often-used approach to increase social behaviors, interaction with adults, also is problematic. Interaction with adults as an approach seems to arise informally when adults identify a withdrawn child and attempt to "bring him/her out" through increased attention. One positive result of adult attention can be a "spillover" effect in which peers interact more with the withdrawn child (Buell et al., 1968; Strain & Timm, 1974). However, observation of withdrawn children suggests that in some cases adult attention reinforces isolation from the youngster's peers and creates social dependency on adults. Withdrawn children, then, may not generalize social interaction to include peers if such interaction previously has been only with adults.

By virtue of the problems just cited for positive reinforcement and adult interaction, an alternative approach, training in social skills, seems appropriate for most withdrawn children. Even youngsters who would seem especially difficult to train for such reasons as lack of verbal behaviors can benefit from social skills training. Also contributing to the appropriateness of this approach is that there is no reason to suspect that training can be detrimental even if a child already has a repertoire of social behaviors. Such training should only help a child become more skilled and more likely to use those skills.

Because training in social skills seems especially promising, and because the two alternatives of positive reinforcement and adult interaction are already quite familiar to professionals, this discussion addresses issues which are related to training. Focus is on aspects of training that researchers have found particularly successful.

Who Should Be Trained — Confederates or Withdrawn Children?

The issue of who should be trained has arisen because recent studies demonstrated that trained peers (confederates) could increase the social behavior of withdrawn children (Haring & Ritchie, 1981; Strain, Shores, & Timm, 1977; Walker & Hops, 1973). Training confederates to engage a withdrawn child in social activity is an indirect approach for modifying withdrawn behavior of an isolated target child when compared with directly training the target child. The main advantage in training confederates appears to be the ease with which they can be trained. However, in a study by the author which will be described in this and following sections, four withdrawn preschoolers successfully completed social skills training which was identical to training for peer confederates (Haring, Note 1).

In Haring (Note 1), the target children averaged social interaction in less than 10% of the 10-second intervals during baseline observations, while other children in the preschool averaged social interaction in 44% of the intervals. Four training sessions (which will be described in following sections) were held for pairs of confederates and for pairs of target children. After training, an alternating treatments design (Barlow & Hayes, 1979; Kratochwill, 1978) was utilized to determine which approach was more effective in increasing social interaction of withdrawn children: Treatment A in which the withdrawn children were prompted to approach others or Treatment B in which confederates were prompted to approach the withdrawn children. As shown in Figure 1, Treatment

A was more successful. In addition, follow-up 5 months later revealed that the formerly withdrawn children were interacting with peers in the natural setting during approximately 50% of the observational intervals.

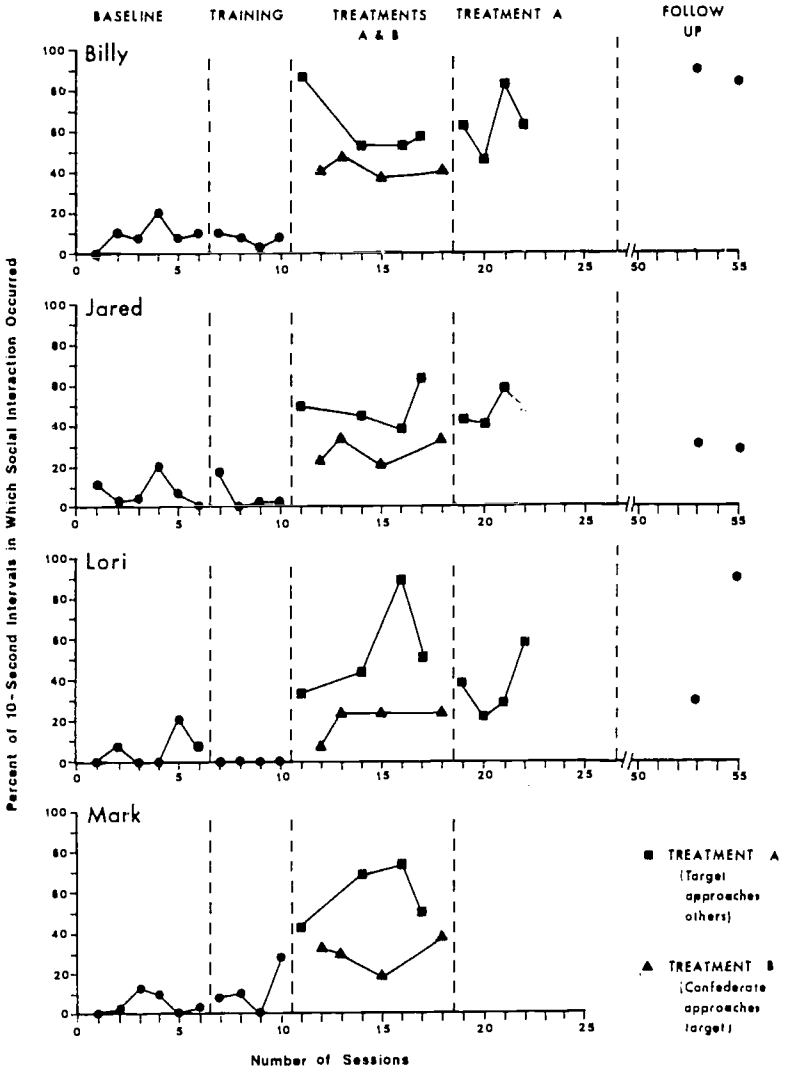

FIGURE 1. *Occurence of social interaction in 5 - 15 minute sessions.*

At the present time, this study appears to be the only direct comparison of training confederates vs. training target children, and it provides support for training those who actually need the social skills, i.e., withdrawn children.

Should Children Be Trained Alone or in Small Groups?

The author's preference for training children in pairs arises not only from opposition to training one child at a time but also from recognition of benefits in training children together. First, I will present the case against training a child alone.

When the goal of social skills training is for a youngster to interact with peers, it seems ironic to train him/her in a situation where he/she cannot interact with peers. In many ways, it is easier to focus on and work with one child at a time; but this convenience is outweighed by absence of a critical element for peer social interaction: another child. In addition, the very focus which is easier to achieve in a one-to-one situation may work against helping a withdrawn child become more social. That is, some children withdraw even more in an intense relationship with an adult.

On the other hand, the case is strong for training children in pairs, especially if done by two experimenters. In this situation, not only can children interact with children (as well as with adults), but they can participate in a moderate-sized group of four. Such a group encourages cooperation and interaction without allowing a withdrawn child to lose himself/herself in a crowd. But the greatest benefit derived from training two withdrawn children at a time may be that bond which seems to form between them. Perhaps this bond develops because they learn and experience success together, or perhaps it is due to social skills which are effective because the withdrawn children are at the same rudimentary social level. Whatever the reason, training in pairs seems quite effective in helping a withdrawn child find a friend among his/her peers.

What Are Effective Training Techniques?

There appears to be consensus in the literature on the techniques which are useful in training youngsters to approach and interact with peers. *Instructions*, for example, are important throughout training, beginning when the experimenter enlists the cooperation of the child toward achieving the goal of increased social interaction (either for himself if he is the target child, or for a withdrawn peer if he is a confederate). The youngster is instructed in such things as asking another child to play, persevering in the face of social nonresponse, sharing toys, and playing cooperatively.

Another technique of general importance in training session is *positive reinforcement*. In some studies, experimenters carefully specified repeated trials and schedules of reinforcement for correct responses (cf. Strain, Shores, & Timm, 1977), while in other studies, experimenters simply reinforced social behavior as it occured during training (cf. Haring & Ritchie, 1981). When reinforcement was given, social reinforcers such as praise and hugs were most common.

Modeling also is an effective training technique for social skills. Walker and Hops (1973) showed youngsters in their study a film of social interaction; but if experimenters are working in pairs, it is possible for one experimenter to model

social behaviors while the other draws attention to those behaviors. For example, if one experimenter shares a toy during a training session, the other can say, "That really shows us all how to share with someone." Then *role playing* can be employed in which one experimenter is the social initiator and the other is the social recipient. Next, an experimenter is the initiator and a youngster plays the recipient. Then youngsters play both roles.

Finally, *rehearsal* is a valuable technique, particularly when withdrawn children rather than confederates are being trained. Frequently these children lack verbal facility to initiate social interaction, but usually they respond well to rehearsing a simple expression such as, "Let's play." Withdrawn children typically begin saying these phrases in barely audible voices, but gain confidence and volume through rehearsal and reinforcement.

Although each of these techniques is useful when applied separately, in combination they provide even more effective social skills training.

What Are Successful Training Activities?

Training activities appear to work best if they are by nature conducive to group interaction (e.g., playing house or playing ball) as opposed to being activities children often engage in independently while in groups (e.g., shaping Play Doh or painting). Also, training activities should be fun and popular with the children. Playing store, for example, seems to be much more attractive than taking turns stringing beads, which can be a chore for some youngsters. In addition, activities and materials that are age-appropriate but a bit novel to the children usually are more successful. For example, youngsters generally are enthusiastic about playing with a toy cash register which has not yet been placed in the play area for all children to use.

Besides careful selection of activities and materials, other important training considerations involve sequencing of (a) activities in a single training session, and (b) sessions in a complete training package.

In Haring and Ritchie (1981) and Haring (Note 1), each of four training sessions began with a 2-to-5-minute warm-up activity led by the experimenters in which the children engaged in motor behaviors called for and accompanied by lyrics on musical records (e.g. "All join hands and circle to the right, then drop hands and skip to the left . . ."). Then, children and experimenters sat on the floor for 15 minutes and engaged in various activities designed to encourage social interaction:

Session 1 - Building of a structure with hollow plastic blocks and then taking turns passing a marble through the structure.
Session 2 - Block and marble activity, plus cooperatively completing a large, multicolored jigsaw puzzle of a butterfly.
Session 3 - All of preceding activities, plus free play with toy cars.
Session 4 - All of preceding activities.

Each session ended with a motor/musical activity similar to the warm-up.

In the activities used in each session, the experimenters facilitated social interaction between children by using the training techniques noted earlier —instructions, positive reinforcement, modeling, role playing, and rehearsal —and by dividing materials in such a way that cooperation was necessary for completing the activity. The activities in each session were sequenced so that children did something physically active during the warm up, sat and played for

12 to 15 minutes, and then engaged in physical activity at the end of the session. In this way, the preschoolers' attention and involvement remained high.

Sessions in the training package were sequenced so that youngsters engaged in increasing numbers of activities, but after the initial session some of the activities were familiar. Thus, children could practice being social with the same people and also the same activities and materials. However, with this format, children seemed to reach their limits of participation after four sessions, possibly because training was no longer novel.

After Training, Should Prompts Be Used?

This final issue is one of the most important addressed here. After a withdrawn child has been trained in social skills, there is no assurance that he/she actually will use the newly-acquired skills. On the contrary, after a few training sessions, it is somewhat unlikely that he/she is either confident or competent enough to exercise her social skills spontaneously. Thus, Haring (Note 1), Haring and Ritchie (1981), and Strain, Shores, & Kerr (1976) utilized prompts to facilitate social interaction (e.g., "You are playing so well with these blocks, why don't you ask Billy to join you?") In the treatment condition, then, social interaction was prompted and was an approximation to spontaneous interaction. The question remained, would prompted social behavior generalize to the natural environment where such prompts usually are not present (Timm, Strain, & Eller, 1979)?

Haring (Note 1) found high levels of unprompted social interaction 5 months after the treatment. This suggested that prompted social behavior did generalize. Of even more importance is the fact that after social behavior has maintained for that long, it is likely that such interaction has become reinforcing to the child. This brings the intervention to a most pleasing conclusion, and justifies a change in terminology from "withdrawn child" to "formerly withdrawn child."

CONCLUSIONS

This paper has explored issues that must be considered by each professional who seeks to help withdrawn children become more social. Although positive reinforcement and interaction with adults can increase youngsters' social behaviors, a growing body of literature has reported success with social skills training either for withdrawn children or for peer confederates who then socially engage the withdrawn children. In a study of increased social behavior by the present author, training for withdrawn children was compared to training for confederates, and results supported the direct approach of training withdrawn children.

It seems unlikely that any one approach to increasing social behaviors will be effective with every withdrawn child. However, to the extent that we can delineate the most promising interventions and related techniques and activities, each professional can avoid some of the pitfalls others have encountered. In that spirit, it appears that one effective way for increasing social behaviors is to train pairs of withdrawn children by means of varied behavioral techniques and interesting group activities, and then prompt them to interact with peers.

REFERENCE NOTE

1. Haring, M. J. *Social skills training for confederates or for isolates? A study utilizing both approaches.* Paper presented at the Fifth Annual Conference on Severe Behavior Disorders of Children and Youth, Tempe, November 1981.

REFERENCES

Barlow, D. H., & Hayes, S. C. Alternating treatments design: One strategy for comparing the effects of two treatments in a single subject. *Journal of Applied Behavior Analysis*, 1979, *12*, 199-210.

Buell, J., Stoddard, P., Harris, F. R., & Baer, D. M. Collateral social development accompanying reinforcement of outdoor play in a preschool child. *Journal of Applied Behavior Analysis*, 1968, *1*, 167-174.

Haring, M. J., & Ritchie, K. E. Encouraging social behavior in young children: A case study. *Arizona Personnel and Guidance Journal*, 1981, *7*, 31-32.

Kirby, F. D., & Toler, H. C. Modification of preschool isolate behavior: A case study. *Journal of Applied Behavior Analysis*, 1970, *3*, 309-314.

Kratochwill, T. R. *Single subject research: Strategies for evaluating change.* New York: Academic Press, 1978.

Scarlett, W. G. Social isolation from agemates among nursery school children. *Journal of Child Psychology and Psychiatry*, 1980, *21*, 231-240.

Strain, P. S., Shores, R. E., & Kerr, M. M. An experimental analysis of "spillover" effects on the social interaction of behaviorally handicapped preschool children. *Journal of Applied Behavior Analysis*, 1976, *9*, 31-40.

Strain, P. S., Shores, R. E., & Timm, M. A. Effects of peer social initiations on the behavior of withdrawn preschool children. *Journal of Applied Behavior Analysis*, 1977, *10*, 289-298.

Strain, P.S., & Timm, M. A. An experimental analysis of social interaction between a behaviorally disordered preschool child and her classroom peers. *Journal of Applied Behavior Analysis*, 1974, *7*, 583-590.

Timm, M. A., Strain, P. S., & Eller, P. H. Effects of systematic response-dependent fading and thinning procedures on the maintenance of child-child interaction. *Journal of Applied Behavior Analysis*, 1979, *12*, 308.

Walker, H. M., & Hops, H. The use of group and individual reinforcement contingencies in the modification of social withdrawal. In L. A. Hamerlynck, L. C. Handy, & E. J. Mash (Eds.), *Behavior change: Methodology, concepts, and practice.* Champaign, Ill.: Research Press, 1973.

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Providing Integrated School Experiences for Severely Handicapped Students

Susan Stainback and William Stainback

Students referred to as severely handicapped in this paper include those who have traditionally been classified as seriously emotionally disturbed, psychotic, autistic, schizophrenic, severely/profoundly mentally retarded and/or multiply handicapped. They are students who in the past were often excluded from public school programs. They were generally placed in special schools or residential treatment programs.

However, a growing number of special education classes for severely handicapped students are being located in regular neighborhood public schools. Recently, it has been pointed out that in addition to physically locating severely handicapped students in regular schools, every effort should be made to integrate severely handicapped students into as many regular school activities as possible (Stainback & Stainback, in press-b). In other words, severely handicapped students should *not* spend the entire day in the special class environment. There are many regular school activities (or environments) that severely handicapped students can participate in or at least partially participate in. For example, severely handicapped students can participate in the regular lunchroom, hallway and restroom environments. They also can participate in the regular class environment during many activities such as birthday parties, show and tell times, rest time, art, music and recess (Stainback, Stainback, & Jaben, 1981).

The authors have four purposes in this paper. The first is to review why it is important for severely handicapped students to be integrated with nonhandicapped students in regular school programs and activities. A second purpose is to outline how severely handicapped students can be integrated into regular school activities. The third is to discuss methods of promoting interactions between severely handicapped and nonhandicapped students when interactions do not spontaneously occur. The final purpose is to discuss direct observation procedures school personnel could use to assess the frequency and type of interactions that occur between severely handicapped and nonhandicapped students in integrated situations.

WHY INTEGRATION IS IMPORTANT

How can an individual be expected to learn to live in a *normal* community setting with *normal* people if he is placed in an *abnormal* setting with a group of *abnormal* people? In education circles, questions such as this are increasing in

frequency. As pointed out by Stainback and Stainback (1980a), the end result of six seriously disturbed children being placed in a segregated classroom with a special teacher is six disturbed children and one disturbed teacher.

In other words, people learn from people. If a normal child were to be placed in a special school or class with all disturbed children, he/she would probably over a period of time begin to display deviant or maladaptive behaviors. Logic would dictate that any child or anyone placed in an abnormal environment has a reduced chance of learning normal behaviors. If we accept the idea that it is difficult to learn normal behaviors in an environment where many abnormal behaviors are being displayed, we might conclude that a child who is disturbed has very little chance of learning more normal behaviors, if the only models available are children who display a variety of deviant behaviors. In short, anyone—normal or handicapped—reared in such an environment has a reduced chance of learning to display more normal behaviors.

This is not to imply that the only thing needed to change or "cure" children who display maladaptive behaviors is to place them in as normal an environment as feasible. This obviously would be an oversimplification. Placing such children in as normal an environment as possible, however, enhances the probability that they will learn to display a growing number of more normal behaviors. Conversely, placing such children in an abnormal environment, where nearly everyone displays deviant behaviors, reduces the probability of them learning to display more normal behaviors.

In addition, the success of nonhandicapped/severely handicapped integration efforts is important since both nonhandicapped and severely handicapped students can benefit from well-planned and organized integration experiences (Stainback & Stainback, 1981b). In integrated school environments, nonhandicapped students are provided unique opportunities to learn first hand about human differences and similarities and how to approach and interact with severely handicapped members of society. Researchers have found that nonhandicaped students who have had opportunities to interact with severely handicapped students hold more positive and accepting attitudes toward them than nonhandicapped students who have not had such opportunities (Voeltz, 1980). Such interactions can also reduce nonhandicapped students' fear of the severely handicapped and promote understanding and acceptance (McHale & Simmeonson, 1980; Stainback & Stainback, 1980b).Thus, nonhandicapped students can profit from interactions with severely handicapped students.

Severely handicapped students can also profit from interactions with nonhandicapped students. In integrated school situations, severely handicapped students are given opportunities for more expanded and normalized learning experiences. Egel, Richman and Koegel (1981) found that severely handicapped students can profit in regard to learning basic educational tasks from observing nonhandicapped student peer models. Guralnick (in press) found that severely handicapped students displayed fewer inappropriate play behaviors while interacting in integrated as opposed to segregated situations.

In summary, as stated by Brown, Branston, Hamre-Nietupski, Johnson, Wilcox and Gruenewald (1979):

> When severely handicapped and nonhandicapped students attend the same schools from the time they are very young, the chances of learning tolerance, understanding and acceptance of differences among people are enhanced substantially. It is experience with human differences that *prevents* fear and *promotes* understanding. (p. 7)

While logically it would not be appropriate for nonhandicapped and severely handicapped students to be integrated during certain academic and highly competitive tasks, there are numerous ways special and regular class teachers can work together cooperatively to provide integrated school experiences for severely handicapped students. For example, at the elementary school level, regular and special class teachers can help facilitate integration of severely handicapped students with nonhandicapped students by joining their classes together during selected activities such as homeroom, art, music, recess, Thanksgiving, and birthday parties, show and tell times, and/or rest periods. (Regular and special class teachers can team teach and/or supervise such activities. Since there are usually only five or six students in a special class for the severely handicapped, integrating such a class with a regular class during selected activities is not as difficult as it might, at first glance, appear to be.) There are other ways regular and special class teachers can help facilitate integration. For instance, they can encourage nonhandicapped students to visit the special education classroom(s) to work as tutors and/or simply to spend a little time with a severely handicapped friend. In addition, regular and special class teachers can work together to arrange opportunities for interaction between nonhandicapped and severely handicapped students in the school cafeteria, on the playground, at assembly programs, in the hallways and/or at the bus loading and unloading zones.

It should be noted that opportunities for interactions between severely handicapped and nonhandicapped students can be provided at all levels of schooling. For example, at the high school level severely handicapped and nonhandicapped students might interact during lunch or in some vocational training related activities. As noted above, there are numerous ways to provide opportunities for interaction. Two specific ways outlined by Stainback, Stainback, and Jaben (1981) of providing opportunities for interaction are discussed in more depth in the remainder of this section. The purpose in discussing them is to point out several critical factors that should be considered when providing opportunities for interaction.

Cooperative Work Projects

There are projects that need to be accomplished in any school that both severely handicapped and nonhandicapped students can work together to complete. The projects should be set up so that all students involved can contribute to their successful completion. Examples of some possible projects include decorating a school wall or bulletin board, planting flowers or shrubs on the school grounds, rearranging the cafeteria for an assembly, or making props for a school play.

An example of how a cooperative work project could be implemented follows. Special and regular classroom teachers might coordinate times at which their students could work together on designated projects. Following this the handicapped and nonhandicapped students would be jointly responsible for actually planning and carrying out the project(s) under the guidance of their teachers. One project might involve the planting and maintenance of a flower garden on school grounds. Discussions involving the students and teachers would have to take place to determine where the garden should be planted,

what flowers should be included, and how to arrange the students' time schedules to give them opportunities to work on the project. After the planning stage, the garden project could get under way. From one such project, other joint projects and activities could be planned.

It should be noted that the severely handicapped and nonhandicapped students should be appropriately the same chronological age and should work on age-appropriate activities. While many professionals in the past have felt that it was not possible, due to severe emotional and/or mental disabilities, for severely handicapped students to work on age-appropriate activities, this belief is changing (Brown, Branston, Hamre-Nietupski, Pumpian, Certo, & Gruenewald, 1979). There are numerous age-appropriate projects or activities to which severely handicapped students can make a meaningful contribution. A few examples were cited above. Also, the projects selected should be real and functional. It would be a mistake to have the students work on a "made up" project, one that has no real meaning or purpose. We have found that most students' enthusiasm wanes quickly when they are faced with nonfunctional, meaningless tasks. In short, any project selected should be age-appropriate, worthwhile, and challenging to both the nonhandicapped and severely handicapped students.

Joint Play

Joint play sessions can also be used to enhance positive interaction behaviors between the severely handicapped and nonhandicapped students. This method involves an organized play situation in which the regular and special teachers cooperatively plan group games and activities that both of their classes can jointly participate in during at least some of their recess periods. The games selected should be positive, high probability activities that are age-appropriate for the students. The games selected should also be arranged so that successful participation can be expected from both the handicapped and nonhandicapped.

Games that are not complicated, yet unique and enjoyable, are particularly useful. The games chosen, although not unnecessarily complicated, should present a challenge to both the severely handicapped and nonhandicapped. Often those involving the influences of the physical environment are fun, challenging, and a good learning experience. One set of games that meet these criteria for most children are parachute activities. One way to play a parachute game is to place a ball in the center and have the children grasp the edge of the parachute. The object of the game is for the children to knock the ball off by lifting their arms and hands and getting air under the parachute. While this game can be played without an excess of rules and complicated movements, it is an enjoyably novel experience for most chidlren and presents a challenge to them. It should be noted that for children who have poor grasp or arm movement in either of the classes, this particular activity may not be applicable or may require modification. The emotional, social, physical as well as other abilities of the children involved should influence game selection.

A word of optimism about what severely handicapped students can do should be inserted here. Unfortunately, we sometimes determine that a game (activity or project) is too complex for some students, especially severely handicapped students, when it is *not* too complex or difficult. The real problem is our own inability to adapt the activity and/or physical/social environment so

the student(s) can participate (at least partially) and/or to provide the students with the kind of assistance necessary for them to participate. Brown, Bramston-McClean, Baumgart, Vincent, Falvey, and Schroeder (1979) have pointed out that severely handicapped students have been excluded or excused from numerous activities because they culd not perform "adequately". They also outlined ways in which severely handicapped students can participate or partially participate in activities we may consider too complex or difficult for them. The reader is referred to Brown and associates (1979) for additional information.

Finally, to carry out joint play successfully, training some severely handicapped students in appropriate play behavior may be necessary. This training may also be needed for some members of the nonhandicapped class. Both decreasing inappropriate play behavior—such as refusal to play, lack of sustained play, and/or throwing toys or objects—as well as the building of appropriate behaviors such as learning to play cooperatively and sharing, may need to be included in play training sequences.

PROMOTING INTERACTIONS

Interactions between severely handicapped and nonhandicapped students do not always spontaneously occur when opportunities for interactions are provided (Nietupski, Hamre-Nietupski, Stainback & Stainback, in press). It may be necessary for teachers to promote interactions.

Thus, the purpose of this section is to delineate and describe three methods teachers could use to promote interactions between severely handicapped and nonhandicapped students: (a) classroom organization, structure and materials; (b) training the severely handicapped in interactional skills; and (c) training the nonhandicapped to interact with the severely handicapped.

Classroom Organization, Structure, and Materials

Hamre-Nietupski (Note1) has found that dividing an integrated class into small heterogeneous groups facilitates interactions among students of various developmental levels to a greater degree than attempting to obtain interactions with one or two larger groups. Thus, teachers may want to consider arranging large groups of students in integrated situations into small heterogeneous groups. In addition to organizing the class into small heterogeneous groups, the specific type of small group structure to be used needs to be carefully considered. Johnson and Johnson (1980) describe three group structures that can be used in an integrated classroom situation. These are *cooperation* or positive goal interdependence, *competition* or negative goal interdependence, and *individualistic learning* or no interdependence. In a cooperative group structure the group as a whole is assigned a common goal and everyone is encouraged to work together to reach the goal. In other words, if the group's goal is to be reached, all students must coordinate their efforts to achieve the goal. Johnson and Johnson (1980) have found that the cooperative group structure produces significantly more positive interactions between handicapped and nonhandicapped students than either the competitive or individualistic group structure.

A third classroom organization factor that has been found to influence

student interactions are the types of materials, toys and activities provided. Quilitch and Risley (1973) found that children tend to play alone or together depending on the types of materials and toys available. For example, in their study during an organized play period when materials such as wagons and balls were available, the children interacted more often as opposed to when materials such as crayons and puzzles were available, which, or course, can more readily be used in isolated play. Stainback, Stainback, and Jaben (1981) have related the implications of these and other similar findings specifically to the severely handicapped. They have advocated the use of social-type materials, toys, and activities that can be used with students across a wide range of abilities to help facilitate interactions between students of varying developmental levels.

Training the Severely Handicapped

A second approach to promote positive severely handicapped/nonhandicapped interactions is to focus on enhancing the severely handicapped students socialization skills. The rationale is that if the severely handicapped develop appropriate social skills, the nonhandicapped will tend to interact with them more often. Thus, the discussion presented in this section focuses on procedures for training the severely handicapped to engage in direct social interactional behaviors with nonhandicapped students in integrated settings.

Strain and his associates (Strain & Kerr, 1980) have successfully used teacher prompts to elicit interactional behaviors from severely withdrawn, isolated students. Teacher prompts typically involve verbal or gestural-motoric prompts directed toward the isolated student(s). In addition to teacher prompting, peers have been recruited to prompt the social behaviors of such students. This technique is referred to as *peer social initiation* (Strain & Kerr, 1980). Recent investigations have indicated the effectiveness of this procedure with elementary age autistic students (Ragland, Kerr, & Strain, 1978). In the peer social initiation procedure, a peer or peers prompt the severely handicapped student(s) to engage in social interactions by making social bids to them. More specifically, in the research by Strain and his associates selected peers have been trained to make social bids to isolated children, with the purpose of increasing the handicapped student's rate of social responding and social interactions.

Severely handicapped students' social interactional behaviors have been increased through direct reinforcement also. As part of a larger study, Russo and Koegel (1977) investigated a way of improving the social interactional behaviors of an autistic student. They investigated the effects of a behavior modification specialist reinforcing the social interactions of a 5-year-old autistic student. The study was conducted in a regular classroom. The specialist provided the autistic student with token and social reinforcers (first on a continuous, then intermittent schedule) whenever she displayed appropriate social behaviors toward her nonhandicapped peers such as borrowing a toy and/or sharing candy. The social interactional behaviors of the student increased significantly. After the student's social behaviors were being maintained at a satisfactory rate, the teacher was trained to administer the intervention strategy. The social behavior of the autistic student maintained after the intervention was taken over by the teacher.

Training Nonhandicapped Students

A third approach to promote severely handicapped/nonhandicapped interactions is to directly train nonhandicapped students to interact with severely handicapped students. Recently several professionals have advocated this approach (Hamre-Nietupski, (Note 1); Stainback & Stainback, 1982a). One of the main rationales is that research (Guralnick, 1980) has shown that in integrated free play situations, at least, that nonhandicapped students show a definite preference for interacting with other nonhandicapped students rather than severely handicapped students. Also, some nonhandicapped students have been found to reject and/or to be cruel to handicapped students in integrated situations (Jones, 1972). Therefore, teachers wishing to promote interactions between the severely handicapped and nonhandicapped may need to modify the attitudes and interactional behaviors of the nonhandicapped toward the severely handicapped. As Voeltz (1980) noted:

> If researchers document that nonhandicapped children exhibit an intolerance for their handicapped peers that includes a willingness to engage in overtly cruel behavior, this should posit a challenge to educators rather than a limitation. Surely, such behavior of presumable normal children is as susceptible to change as the behavior of severely handicapped children, now apparently acquiring skills once thought unattainable. (p. 463)

Recently, methods and materials have been developed for educating nonhandicapped students about severely handicapped students (Nietupski, Hanre-Nietupski, Schuetz & Ockwood, 1980; Stainback & Stainback, (1981a). Many of these methods go beyond teaching nonhandicapped students about handicapping conditions. The focus is on modifying nonhandicapped student's attitudes and behaviors toward severely handicapped students through instructional programs about individual differences and controlled positive experiences with severely handicapped students.

DIRECT OBSERVATIONAL PROCEDURES

The following is a description of direct observation procedures that teachers could use to measure the frequency and type of interactions that occur between severely handicapped and nonhandicapped students in integrated situations.

School personnel can assess interactions by observing nonhandicapped and severely handicapped students when they are in play or work situations and simply recording their interactions. During the past few years researchers have developed observational instruments for directly observing interactions between preschool and school age peers in naturalistic settings (e.g., Guralnick, 1980; Strain & Kerr, 1980). Many of these observational instruments could be adapted for use by school personnel to measure interactions between nonhandicapped and severely handicapped students.

An observation isntrument employed by Strain and Timm (1974) and Strain, Kerr and Ragland (1979) could be used to measure nonhandicapped/severely handicapped student interactions. The coding system for the instrument includes two general classes of interaction behaviors, motor-gestural and vocal-verbal, along with negative and positive topographical features. In addition, whether the interaction behavior is initiated or received is noted. Each coded item is operationally defined. (The operational definitions can be found in Strain & Timm, 1974, p. 584.) As in most observational coding systems,

behaviors are recorded on a coding sheet specifically designed to assist the observer in collecting the designated information. Behaviors are recorded in a continuous manner on one student at a time. The interaction behaviors that each nonhandicapped and severely handicapped student displays are coded according to the previously noted categories (e.g., positive/negative, initiated/-responded). By using such an observation coding system, school personnel can determine how much and what type of interactions occur between nonhandicapped and severely handicapped students.

More indepth and varied data can be collected through such an observation coding system by simply modifying and/or expanding the behavior categories to be coded. For example, duration as determined by recording the beginning and ending time of a social behavior, and the specific type of activity the target subject is engaged in (i.e., observer, isolate, parallel, game, cooperative, or fantasy) has been used in an observation coding system by Tremblay, Strain, Henderson and Shores (in press). Another modification of the coding system used by Strain and his associates was developed by Stainback and Stainback (Note 2). This instrument is specifically designed to measure the social behavior of nonhandicapped and severely handicapped students in integrated school settings. The coding system uses a momentary time sampling rather than a continuous observation approach. The observer is cued (by a tape recorder) every 15 seconds and the observer notes what the target subject is doing when cued. More specifically, the observer notes at 15-second intervals whether an interaction is occurring. If so, coding of three characteristics regarding the interaction (physical-verbal, positive-negative, initiated-received) plus whether the interaction occurred on a group or individual basis, and the sex of the peer(s) the target subject was interacting with is done. As with the other coding systems, each category of behavior is operationally defined and a coding sheet is used by the observer.

Thus, observation coding systems can involve complex to simplistic behaviors and be selected or designed to meet the data collection needs for specific students in specific settings. Selection or development of an observation coding system should be an individual consideration of each teacher. Also, due to the nature of the data being collected and the supervisory demands on the teacher, it is generally most appropriate to collect the data in an integrated (severely handicapped and nonhandicapped) free play or joint work activity period in which both the regular and special teachers are present (so one can observe and the other can supervise). The teachers' supervisor or another colleague may periodically do interater reliability checks to monitor the reliability of the instrument throughout its use.

It should be noted that while direct observation of interaction behaviors in a school situation does not necessarily have to be a difficult or complex task, preparation time usually is necessary. Prior to the use of any observation coding system, whether it be a published or custom-made system, the individual(s) serving as the observer(s) should engage in practice sessions until they become proficient in the use of, and comfortable with, the system. Also prior to the actual use of the system, interater reliability of the coding system should be determined. In addition, as noted above, periodic interater reliability checks should occur throughout the time the observational system is used. The reader is referred to Cartwright and Cartwright (1974) for additional information on how to construct and use direct observation systems.

Data collected with an observational coding system can be used in a variety of ways. For example, the specific types and frequency of severely handicapped and nonhandicapped interactions that occur in various school environments can be evaluated. This data could be analyzed to determine if there is a need for intervention to promote more frequent positive interactions. In addition to evaluating the need for intervention, observational data can be used to determine the effectiveness of intervention programming throughout the intervention process.

FINAL NOTE

Because of the growing national concern for the education of all handicapped children, the Congress of the United States passed Public Law 94-142 in 1975 that mandated free and appropriate education of all handicapped children in the *least restrictive environment* (LRE). While this law has been cited repeatedly to support the rights of mildly handicapped students to be educated in the LRE, it should be noted that the law also addresses the rights of severely handicapped students to be educated in the LRE. This law, The Education of All Handicapped Children Act, provided implementation power and incentive for educators to begin seriously addressing the needs of severely handicapped students in the most normalized environment possible. Since this legislation, both research findings (Stainback & Stainback, 1982b) and experience has shown that severely handicapped students can be successfully provided educational services within regular community public schools (Hamre-Nietupski & Nietupski, 1981). In addition, it has been found that both severely handicapped and nonhandicapped students who share interaction experiences in integrated situations can benefit educationally and socially from such experiences with no detrimental effects for either group (see Stainback & Stainback, 1981b).

Based on experience and research evidence, many professional educators have recently accepted the position that the least restrictive educational environment for severely handicapped students is the regular neighborhood public schools. This is evidenced in part by the fact that in 1979, The Association for the Severely Handicapped (TASH) adopted a resolution calling for the education of severely handicapped students with their nonhandicapped peers in regular schools.

REFERENCE NOTES

1. Hamre-Nietupski, S. *Sensitizing the nonhandicapped person to severely handicapped students in regular public school settings.* Paper presented at the National Conference of The Association for the Severely Handicapped, Los Angeles, Calif., 1980.
2. Stainback, S. and Stainback, W. A nonhandicapped/severely handicapped social interactin observational instrument. Unpublished manuscript, University of Northern Iowa, 1981.

REFERENCES

Brown, L., Branston-McClean, M., Baumgart, D., Vincent, L., Falvey, M., & Schroeder, J. Utilizing the characteristics of a verity of current and subsequent least restrictive environments as factors in the development of curricular content for severely handicapped students. *AAESPH Review*, 1979, *4*, 407-424.

Brown, L., Branston, M., Hamre-Nietupski, S., Johnson F., Wilcox, B., & Gruenewald, L. A rationale for comprehensive longitudinal interactions between severely handicapped students and nonhandicapped students and other citizens. *AAESPH Review*, 1979, *4*, 3-14.

Brown, L., Branston, M., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenewald, L. A strategy for developing chronological age-appropriate and functional curricular content for severely handicapped adolescents and young adults. *Journal of Special Education*, 1979, *13*, 81-90.

Cartwright, C., & Cartwright, G. *Developing observational skills*. New York: McGraw-Hill, 1974.

Egel, A., Richman, G., & Koegel, R. Normal peer models and autistic children learning. *Journal of Applied Behavior Analysis*. 1981, *14*, 3-12.

Guralnick, M. Social interactions among preschool children. *Exceptional Children*, 1980, *46*, 248-253.

Guralnick, M. J. The social behavior of preschool children at different developmental levels: Effects of group composition. *Journal of Experimental Child Psychology*, in press.

Hamre-Nietupski, S., & Nietupski, J. Integral involvement of severely handicapped students within regular public schools. *Journal of the Association for the Severely Handicapped*, 1981, *6*, 30-39.

Johnson, D., & Johnson, R. Integrating handicapped students into the mainstream. *Exceptional Children*, 1980, *47*, 90-98.

Jones, R. L. Labels and stigma in special education, *Exceptional Children*, 1972, *38*, 553-564.

McHale, S. M., & Simeonsson, R. J. Effects of interaction on nonhandicapped children's attitudes toward autistic children. *American Journal of Mental Deficiency*, 1980, *85*, 18-24.

Nietupski, J., Hamre-Nietupski, S., Schuetz, G., & Ockwood, L. (Eds.), *Severely handicapped students in regular schools*. Milwaukee: Milwaukee Public Schools, 1980.

Nietupski, J., Hamre-Nietupski, S., Stainback, S., & Stainback, W. Preparing school systems for longitudinal integration efforts. In N. Certo, D. Donder, & R. York (Eds.), *Public schools and the integration of severely handicapped students*. Baltimore: Paul H. Brookes, in press.

Quilitch, H. R., & Risley, T. R. The effects of play materials on social play. *Journal of Applied Behavior Analysis, 1973, 6*, 573-578.

Ragland, E. U., Kerr, M. M., & Strain, P. S. Effects of social initiations on the behavior of withdrawn autistic children. *Behavior Modification*, 1978, *2*, 265-578.

Russo, D. C., & Koegel, R. L. A method for integrating the autistic child into a normal public school classroom. *Journal of Applied Behavior Analysis*, 1977, *10*, 579-590.

Stainback, S., & Stainback, W. Some trends in the education of children labeled behaviorally disordered. *Behavioral Disorders,* 1980, *5,* 240-249. (a)

Stainback, S., & Stainback, W. *Educating children with severe maladaptive behaviors.* New York: Grune & Stratton, 1980. (b)

Stainback, S., & Stainback, W. Educating nonhandicapped students about severely handicapped students: A human differences training model. *Education Unlimited,* 1981, 3, 17-19. (a)

Stainback, S., & Stainback, W. Nonhandicapped students perceptions of severely handicapped students. *Education and Training of the Mentally Retarded,* in press. (a)

Stainback, W., & Stainback, S. A review of research on interactions between severely handicpped and nonhandicapped students. *The Journal of the Association for the Severely Handicapped,* 1981, *6,* 23-29. (b)

Stainback, W., & Stainback, S. The need for research on training nonhandicapped students to interact with severely handicapped students. *Education and Training of the Mentally Retarded,* 1982, *17,*6-11. (a)

Stainback, W., & Stainback, S. Social interactions between autistic students and their peers. *Behavioral Disorders,* 1982, *7,* 75-81. (b)

Stainback, W., & Stainback, S. A severely handicapped integration checklist. *Teaching Exceptional Children,* in press. (b)

Stainback, W., Stainback, S., & Jaben, T. Providing opportunities for interaction between severely handicapped and nonhandicapped students. *Teaching Exceptional Children,* 1981, *13(3),* 72-75.

Strain, P. S. & Kerr, M. M. Modifying children's social withdrawal: Issues in assessment and clinical intervention. In M. Hersen, R. Eisler, & P. Miller (Eds.), *Progress in behavior modification, (Vol. 2).* New York: Academic Press, 1980.

Strain, P. S., Kerr, M. M., & Ragland, E. U. Effects of peer-mediated social initiations and prompting/reinforcement procedures on social behavior of autistic children. *Journal of Autism and Developmental Disorders,* 1979, *9,* 41-54.

Strain, P. S., & Timm, M. A. An experimental analysis of social interaction between a behaviorally disordered child and her classroom peers. *Journal of Applied Behavior Analysis,* 1974, *7,* 583-590.

Tremblay, A., Strain, P. S., Hendrickson, J. M., & Shores, R. E. Social interactions of normally developing preschool children: Using normative data for subject and target behavior selection. *Behavior Modification,* in press.

Voeltz, L. M. Children's attitudes toward handicapped peers. *American Journal of Mental Deficiency,* 1980, *84,* 455-464.

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The Employment Readiness of the Autistic Compared with the Severely Handicapped

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ABSTRACT

A comparison of observable employment readiness skills possessed by adolescents classified as and placed in public educational settings in classes for the severely handicapped was reported. The subjects were drawn from populations in the states of California and Montana. The total group was divided into a number of subsamples by handicapping conditions including a subsample of autistic individuals. It was found that although the autistic varied statistically from the other groups and from the sample as a whole in respect to total skills posessed, the autistic rated significantly high only in the domain of work skills. A further examination revealed a number of areas within the work behavior and work skills domain in which the subgroup classified as autistic consistently showed reduced skill levels.

This preliminary study provides a number of implications for teaching and training of the adolescent and young adult with autism. These include prevocational training for the autistic which should be directed toward a number of specific work behaviors, general curriculum approaches should be constructed parallel to that which is needed for other severely handicapped individuals, and the need for further and more complete employment readiness training and reserarch in reference to the adolescent autistic.

Recently it has been pointed out that there is an increasing concern for the unique needs of the handicapped adolescent and young adult. This increased concern is reflected in the new demands being placed on secondary educators. Educators are expected to become innovators in the area of curriculum, particularly vocational curriculum, for students involved in special education programs (Wimmer, 1981). However, information is limited concerning the effects of schooling, composition of prevocational and vocational training, and skill and behavior limitations of the severely handicapped adolescent and young adult. There is a steadily increasing amount of research which is rapidly filling this void of knowledge.

In the case of the adolescent and young adult with autism, however, not only is research almost nonexistent, but there has been only a very reluctant acknowledgment and growth of interest in these individuals on the part of the professional community. Only a few brief discussions of the vocational functioning levels of this group may be found in the literature. These discussions are

centered around employment and residential living rather than the actual skills and behaviors, or the lack of such, exhibited by individuals or the group. Wing (1972) and Brown (1977) are two of several authors who have addressed the issues involving vocational placement. However, theirs are not research-based conclusions. There have also been longitudinal followup studies by Kanner (1971), Rutter, Greenfield, and Lockyer (1967), and DeMyer, Barton, DeMyer, Norton, Allen, and Steele (1973). These studies, although providing a set of predictors which can be used in establishing the prognosis of a child with autism, do not provide information concerning educational directions or indication of vocational training areas. The educator is faced with numerous unanswered questions concerning the composition of an appropriate curriculum for the vocational preparation of the young adult with autism.

In the recent past the case has been clearly made for the development of a secondary curriculum which addresses the functioning and needs levels of the handicapped individual after leaving the school setting (Bellamy & Wilcox, 1980; Wimmer, 1981). Agreement does exist that a major component of the secondary curriculum should be training which leads to employment readiness.

Existing educational practice in many states has been to place the autistic in schools which serve the severely and multihandicapped. Those classified as autistic are, in fact, often subsequently placed in self-contained classrooms in such a school; this practice tends to insure that adolescents with autism are exposed to service and curriculum orientations similar to the severely handicapped. The validity of this practice has not been demonstrated. In fact, questions concerning the appropriateness of this practice have been expressed (Bellamy & Wilcox, 1980).

The following study attempts to fill some of the voids in our knowledge about the autistic. It attempts to examine the correlations between the employment readiness skill levels of the severely handicapped and the autistic. The study also identifies a number of specific skills and behaviors in which the autistic as a group may be deficient, thus providing initial points of emphasis for curriculum development for the autistic.

METHOD

Subjects

The subjects in this study were 115 severely or multihandicapped adolescents as defined by the regulations governing public education in the states of California and Montana. All subjects were enrolled in educational settings and were randomly selected by their classroom teachers. These self-contained classrooms were located at the state hospitals, special education schools, and integrated high schools. The ages of the subjects ranged from 11 to 21 years with mean age being 16.5 years. No control was established for intelligence or adaptive behavior. The students' previous prevocational training varied from 0 to 3 years. None of the individuals had been employed in competitive settings. A subgroup composed of 11 individuals identified as autistic as drawn from the original sample. The mean age of these 11 individuals was 15.0 years.

Procedures

Each student was evaluated by use of a teacher administered, criterion referenced assessment. This evaluation provided scores in the areas of work behaviors, work skills, self-help, safety, and transportation. Specific questions were designed to provide a basis for teachers to make decisions as to curriculum directions and teaching approaches. As reported elsewhere (Hilton, in press), the tool was designed to evaluate the employment readiness of the severely handicapped. The input and evaluation of the panel of experts was obtained to provide measures of the content and construct validity. Further, the evaluation was shown to discriminate ($p < .05$) between employed and previously nonemployed severely handicapped individuals. Approximately 15% of the sample was retested to determine interrater reliability while another 15% was simultaneously tested by two evaluators. In both cases the measure was shown to be reliable ($p < .05$).

To provide a statistical comparison of group functioning levels the measure was scored in the following manner. Alternatives provided within each of the items were assigned a number ranging from 1 to 5. Highest functioning levels received score values of 5. Skilllevels falling between these extremes received sscore values of 2 to 4. Skills not observed by the teacher ornot applicable to an individual were equated with the lowest level of functioning. Total scores for each employment readiness domain were compiled along with a test total for each individual.

The autistic subsample was compared by means of the *t* test to the remaining multi and severely handicapped sample. Further subsamples were identified by handicapping condition—mentally retarded, deaf-blind, cerebral palsied, and mentally retarded with other major handicapping conditions. Each of these subgroups was also compared by means of the *t* test to the autistic group.

In addition to the above comparisions, the domains of work skills and work behavior for the total sample were analyzed to determine those specific behaviors and skills in which the sample functioned below a level considered to be acceptable in sheltered work settings in terms of either semi-independent functioning or accepted skill level in terms of output.

RESULTS

The comparison of the autistic subsample to the remainder of the severely handicapped sample was completed by use of the *t* test. This statistical analysis indicated the autistic sample differed significantly from the remainder of the sample in the work skills domain. This difference in turn was primarily responsible for the significant difference ($p < .01$) between the total scores of the two groups. In the domains of work behaviors, self-help, safety, and transportation, the scores of the two groups were quite similar. The results of these comparisons are reported in Table 1.

The comparison of the autistic with other subgroups showed all other subgroups to exhibit employment skills levels which were significantly lower than those of the autistic. Further, the deaf-blind subgroup (N=6) was significantly lower in all domains compared, and the cerebral palsied group (N=8) was significantly lower in skill level than the autistic group in all categories except for work behaviors.

TABLE 1

Correlations of the Autistic and Severely Handicapped Employment Readiness Skills and Behaviors

	M	SD	t
Work Behaviors			
Autistic	82.55	20.02	1.52
Severely Handicapped	92.89	32.13	
Work Skills			
Autistic	85.36	28.42	4.75*
Severely Handicapped	136.31	65.85	
Self-Help			
Autistic	34.45	19.74	1.71
Severely Handicapped	45.15	19.80	
Safety			
Autistic	35.00	16.77	1.41
Severely Handicapped	42.63	19.57	
Transportation			
Autistic	39.09	19.56	0.60
Severely Handicapped	42.06	21.23	
Total			
Autistic	276.45	24.27	2.97**
Severely Handicapped	359.86	14.04	

Note: *Autistic* N=*11*, *Severely Handicapped* N=*113*, * $p < .001$, ** $p < .01$

Analysis of specific items in the employment skills and employment behavior domains revealed no clear differences between the autistic subsample and the remainder of the severely handicapped sample. The deficits identified in the autistic group were also present in the severely and multihandicapped group. Because of their possible implications to teachers of both groups, Table 2 reports the specific skills on which the two groups were identified as not being able to function at either a semi-independent level or at a production level which is acceptable for sheltered employment without direct supervision.

The above skill and behavior deficits were not found at the stated level for all severely handicapped or autistic young adults evaluated. They are rather the mean functioning levels on specific skills. Individual cases ranged from independent functioning to complete assistance required on each item reported.

TABLE 2

Specific Deficit of the Autistic and Severely Handicapped Subsamples

Skill	Mean Functioning Level
Can learn to an established proficiency a simple five or more step assembly or sorting task in	3 hours or more
Can select big or little item	only with verbal directions or visual cues
Can count up to 50 objects	only with verbal directions or visual cues
Can reliably measure with a ruler or yardstick to	1 inch
Can discriminate a shorter or longer object in a group of	four to five similar objects
Can match objects to a provided length	only with verbal directions or visual cues
Will at the appropriate time appear at assigned work station	only with verbal directions or visual cues
Can complete a learned task of two parts or more	three times as slow as a nonhandicapped
Can follow a one or more part written set of directions	only with verbal directions or visual cues
Can attend to an assigned task for	5 to 10 minutes maximum
When frustrated, on task behavior	decreases by more than 20%
Can discriminate between work and break time	only with verbal direction or visual cues
Displays minor disruptive behavior which does not involve others	6 to 10 times per week
Changes in work routine or schedule causes work to	decrease more than 20% but less than 50%
Will work without leaving work station when only prompted and/or reinforced for	up to 29 minutes maximum
Can communicate the need for clarification of instruction	only with verbal directions or visual cues
Can communicate the need to change tasks	only with verbal assistance or visual clues

DISCUSSION

The findings seem to indicate that the work skills of adolescents and young adults with autism are somewhat elevated in comparison to the work skills of the severely and multihandicapped. On the other hand, other employment readiness skills of the autistic appear to parallel those possessed by the severely handicapped does not indicate the need for an alternative curriculum, but rather that the classroom teacher should develop educational experiences based upon the individual needs of the student.

This study seems to refute the belief that the autistic present behaviors which limit their employability. No significant difference in employment behaviors was indicated by the data.

These findings present some question concerning the rationale for the segregation of the autistic from other severely and multihandicapeed individuals. The majority of skills evaluated in this study showed the two groups to be fairly consistent in skill functioning levels. It would seem that the autistic should be integrated with other severely and multihandicapped on the basis of their proficiency and/or deficits in skills and behaviors rather than by a mere label.

Skills and behaviors which indicate employment readiness of the severely handicapped can be identified and classroom teachers can evaluate the functioning levels of these students. It is also possible to identify specific areas in which the severely and multihandicapped, as well as the autistic, demonstrate deficits in functioning. Educators need to make decisions to address these deficiencies based upon factors such as the ultimate functioning of the individual, the student's remaining years in school, and other skills critical to the functional independence of the young adult.

The results of the preliminary study must be viewed with caution. There are weaknesses inherent in this study which may limit the ability to generalize its results. Further research with greater sampling is indicated. Such research will reduce the majority of concerns.

Expanded research into the employment readiness skills of the young adult with autism must be conducted. This research should address factors including: (a) the effect intelligence has on differences found in the skill levels of subsamples within the population of severely and multihandicapped; (b) the identification of the necessary components of an effective prevocational program for the severely handicapped and the autistic; and (c) the determination of age and/or grade level at which functional skills orientation including employment readiness skills should commence.

In conclusion, the examination of the vocational and functional skills of the severely handicapped and autistic adolescents and young adults must be continued. If schools and teachers are to more appropriately serve the autistic, increased attention must be focused on the young adult, and the research questions posed above should be addressed.

REFERENCES

Bellamy, G. T., & Wilcox, B. Secondary education for severely handicapped students: Guideline for quality services. In B. Wilcox & A. Thompson (Eds.), *Critical issues in educating autistic children and youth.* Washington, D.C.: DOE Office of Special Education, 1980.

Brown, G. E. *From self-stimlulation to prevocational training—A total program for autistic children.* Washington, D.C.: Office of Education, 1977. (ERIC Document Reproduction Service No. ED V39 176)

DeMyer, M. K., Barton, S., DeMyer, W. E., Norton, J. A., Allen, J., & Steele, R. Prognosis in Autism: A followup study. *Journal of Autism and Childhood Schizophrenia*, 1973, *3*, 199-246.

Hilton, A. L. A vocational readiness measure for the severely handicapped (Doctoral dissertation, University of Southern California, 1980). *Dissertation Abstracts International,* in press.

Kanner, L. Followup study of eleven autistic children originally reported in 1943. *Journal of Autism and Childhood Schizophrenia*, 1977, *1*, 119-145.

Rutter, M., Greenfield, D., & Lockyer, L. A. A five to fifteen year followup study of infantile psychosis. Vol. II, Social and behavioral outcome. *British Journal of Psychiatry*, 1967, *113*, 1183-1199.

Wimmer, D. Functional learning curricula in the secondary schools. *Exceptional Children*, 1981, *47*, 610-616.

Wing, L. *Autistic children.* New York: Brunner Mazel, 1972.

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The Use of Nonverbal Piagetian Tasks to Assess the Cognitive Development of Autistic Children

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ABSTRACT

Twelve autistic, 12 normal, and 12 trainable mentally retarded children, aged 4 to 9, were administered six tasks designed to assess Piagetian concepts. All of the tasks required the child to locate a food reward hidden in one box among several. The boxes varied in size, shape, color, number, and physical arrangement as a function of the particular concept being tested. The paradigm was designed to eliminate the possible confounding effects of linguistic and attention deficits on Piagetian task performance. It was hypothesized that the presence of such deficits in autistic children interferes with their performance on tests designed to measure intellectual development and status. The procedures successfully reduced the confounding effects of language and attention deficits, with the result that the performance of autistic children was comparable with that of normal children and superior to that of TMR children.

Piagetian tasks have had to be extensively modified in order to extend the range of populations to which the theory might be applied (Braine, 1959). Examples can be found in the literature for populations of developmentally disabled children (Furth, 1966; Woodward, 1961), children and adults from non-Western societies (Lancy & Strathern, in press; Lancy, Souviney, & Kada, in press), very young children (Gelman, 1972; Siegel, 1971, 1973), and nonhuman primates (Wise, Wise, & Zimmerman, 1974; Woodruff, Premack, & Kennel, 1978). In many cases these studies have resulted in a reassessment of the intellectual capacity or developmental quotient of the population in question. In particular, modifications which eliminate the requirement for the subject to make a verbal response yield higher levels of performance than is usually obtained with the standard procedures (Furth, 1966; Gelman, 1972; Siegel, 1973).

Modified Piagetian procedures seemed to offer an opportunity to gain insight into the intellectual development of autistic children. A recent definition (Rutter, 1978) of the syndrome highlights the following symptoms: (a) a failure to develop social relationships, (b) language retardation, and (c) ritualistic or

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compulsive phenomena (i.e., an insistence on sameness and stereotyped repetitive movements). With respect to intellectual ability, Kanner (1943), the first clinician to isolate autism as a distinctive disorder, has claimed that their intellectual abilities could be considered normal. Subsequent studies (e.g., Gittleman & Birch, 1967; Lockyer & Rutter, 1969) have either ignored the issue or claimed very low intelligence.

Several scholars have applied a Piagetian framework to the study of the intellectual development of autistic children (Alpern, 1967; Curcio, 1978). Their conclusions are more detailed but no more optimistic than those cited above. Bettelheim's (1967) comments are representative:

> Autistic children do not seem to have truly mastered the last stage of sensorimotor development in which the constancy of objects is acquired as a concept; how inadequately they achieve the tasks typical for what Piaget calls the preoperational period of development; not to mention the all important cognitive structures achieved only during middle childhood, the so-called subperiod of concrete operations. (p. 454)

Ornitz (1971) extends this line of reasoning to argue that the autistic child fails to achieve sensorimotor integration and that social and linguistic incompetence result from this failure, rather than being the primary causes of the autistic condition. Recent empirical studies in which the Uzigiris and Hunt object permanence scales were used with samples of autistic children appear to confirm that they are "stuck" at the sensorimotor state (Thatcher, 1977). All of the studies which draw on Piagetian theory refer to the strongly egocentric character of the autistic child's orientation and behavior, and this egocentrism is supported by clinical accounts (e.g., Lovaas, 1966, 1977; Lovaas, Koegal, & Schreibman, 1979; Rimland, 1964).

However, two factors led us to believe that the intelligence of autistic children may be masked by their linguistic and attentional deficits. The linguistic deficiencies of autistic children have been consistently documented (Baker, Cantwell, Ritter, & Barlaic, 1976), rendering suspect the several studies in which performance measures were inextricably linked with language ability. As noted, the use of nonverbal Piagetian tasks has led to substantial improvement in performance for several other language deficient populations.

The attention deficit is also widely documented, and Freeman and Ritvo (1976) see this as interfering "with the development and expression of cognitive abilities which in the normal child define his intelligence" (p. 31). There are treatment programs in which attention is brought under stimulus control, and studies using this learning theory framework have shown that autistic children are capable of learning complex discriminations in addition to acquiring communication skills (Lovaas, 1977; Risley & Wolf, 1967).

Our first goal, then, was to try to modify Piagetian procedures to minimize the requirements for communication with the tester and to increase the likelihood that the child would remain attentive. A second goal was to compare autistic children with normal and trainable mentally retarded (TMR) children to try to discover to what extent and in what areas their intellectual abilities might differ. A final goal was to vary the age range of both subjects and stage-specific tasks so that an assessment could be made of the rate of cognitive development in the three populations.

METHOD

Design Considerations

We were confronted with several critical problems in our search for an appropriate methodology. The attention deficit problem presented the least difficulty since Lovaas and his colleagues (1977) have developed systematic procedures for holding the child's attention so that learning therapy can progress. Essentially, this consists of rewarding the child for paying attention and punishing the child for straying far off task. Typically, in an early session the child is seated in a small chair and told, "Look." Food is placed in the child's mouth as a reward for any glance in the direction of the therapist. Later, reinforcement is contingent on closer and closer approximations to an attentive gaze. When the child's attention strays off-task he is punished by a loud "No." It takes from 2 weeks to 6 months to shape the "look" response.

All of our autistic subjects had been at least partially socialized to this kind of therapy session. An essential feature of our method, then, was to arrange a food reward for correct responses, and to present each cognitive task in a repeated trials-learning format. The issue of whether or not children can acquire Piagetian concepts in a laboratory or experimental context is, of course, subject to a lively debate (For reviews see Beilin, 1971; Brainerd, 1973, 1978). The Genevan school has conducted learning experiments in recent years but remains profoundly skeptical of studies which employ an operant conditioning paradigm (Inhelder, Sinclair, & Bovet, 1974). As will become apparent shortly, however, our operant procedures do have the "self-discovery" feature which the Genevans consider to be the *sine qua non* of experimentally induced cognitive development.

The second problem, to test autistic children's cognitive performance uncontaminated by their obvious language deficit, was of greater difficulty. As Siegel (1978) points out "there seems to be no way of determining, with the traditional Piagetian task, the relative contributions of cognitive and linguistic deficiencies when the child fails to achieve the correct solution (p. 45)." She has developed nonverbal tasks and shown in a series of studies that "young children's concepts . . . exist independently of, and prior to, even the simplest language used to refer to these parameters." (Siegel, 1978, p. 50). A review of the literature on nonverbal assessment of Piagetian concept development revealed, however, that in a majority of the past studies nonverbal referred only to the response portion of the task; instructions, cues, and other aspects of the tasks were indeed verbal and required considerable communication between experimenter and subject (Miller, 1976). In fact, in the training literature alluded to earlier, one of the most successful approaches was based on the explicit formulation and presentation to the child of *verbal rules* (e.g., Beilin, 1965). This is a serious problem because the language deficit of autistic children is as much a reception as a production phenomenon. Their social withdrawal makes them extremely difficult to communicate with in any modality. Trial use of the procedures which Siegel (1971, 1973) had developed and which do not require the child to comprehend or use language indicated that the two-dimensional stimuli did not hold the attention of autistic subjects.

The existing literature, then, seemed to offer only a single paradigm in the Piagetian tradition that would be appropriate for our purposes; namely, the object permanence tasks. These involve no verbal interchange whatsoever and

are ultimately to inspire us in the design of all the tasks in the battery. That is, all the tasks involve having the child *search for* a *food reward which has been hidden.*

A study done some years ago in Europe (Babska, 1965) suggested the use of various kinds of *boxes* in which the food reward could be hidden. By varying the shape, size, color, and number of boxes in the stimulus array, a great variety of concepts could be programmed. For any concept, the correct instance would contain the food reward.

The last problem to be faced concerned task selection. We wanted to select a series of tasks which would be representative of the Piagetian or neo-Piagetian tradition but which would also represent a range from sensorimotor through preoperational to concrete thought. If previous investigators were correct, and if egocentric behavior is a necessary and sufficient indicator of egocentric thought, we would expect to find autistic children firmly entrenched in the sensorimotor period. On the other hand, if we were correct in guessing that previous studies had underestimated their cognitive development, we would expect our 4- to 9-year-old autistic subjects to perform at the preoperational and concrete operational levels. As indicated, the sensorimotor tasks presented no problem. Preoperational tasks are scarce; the stage is usually inferred from a failure on the concrete operations tasks, but we constructed two tasks, ordination and classification, which we believe are appropriate to this stage. Seriation/transposition was not difficult to implement, and success on seriation is a good predictor of later performance on class inclusion, and conservation of weight, mass, and volume (Tomlinson-Keasey, Eisert, Kahl, Hardy-Brown, & Keasey, 1979). Finally, Siegel's (1973) conservation of number task was also relatively easy to adapt to our paradigm.

Subjects

The 12 autistic subjects were chosen from the 20 active treatment cases in the UCLA Autism Project. Choice of subjects was based on availability for testing. No selection was made either prior to or during testing. That is, no child had to be eliminated because of failure to respond on the tasks. The autistic group consisted of nine boys and three girls, with a mean age of 6 years and a range of 4 to 9 years. All of the children had been diagnosed autistic by a licensed clinical psychologist, who is not associated with either this study or the Project. All of the children had been partially or totally mute and scored in the retarded IQ range on a battery of both standard and nonverbal intelligence tests, including the Leiter, Peabody, and Standford-Binet. Our subjects had been in treatment from 6 months to 6 years, during which time most had made considerable progress; thus the sample represents a range from severe to mild autism. Specifically, at the time of this study four children were virtually mute and could respond only to simple commands (e.g., "Look", "Sit"); four had only echolalic speech but could respond to more complicated commands (e.g. "Give me blue block."); and four had achieved an impressive repertoire of expressive language. However, all of the subjects continued to exhibit self-stimulatory behaviors (e.g., gazing, finger-twirling, saliva swirling), inappropriate social behaviors, and attenuated social interaction.

Twelve normal children, seven boys and five girls were selected from the UCLA University Elementary School to match the autistic group on age.

Twelve trainable mentally retarded children, six boys and six girls, were selected from the two TMR classes in a West Los Angeles school for special populations. These children had received a battery of tests which included the Leiter at the beginning of the school year. All of their IQ's were within the range of 25 to 50. Ages were comparable to the normal and austistic groups (See Table 1).

Tasks

Object permanence. The object permanence tasks were adapted from Uzigiris and Hunt (1977). The four subtasks chosen were: *visible hiding* (sensorimotor — stage 4); *visible displacement* (sensorimotor — stage 5); *invisible hiding* (sensorimotor — stage 6); and *invisible displacement* (preoperational stage). Three identical unpainted boxes (10cm x 10cm x 10cm), with hinged lids and rectangular slits in the back, were used. For the first subtask, the child observed the food object being placed in one of the three boxes (A, B, C) and was told to "get it." If the child opened the box which contained the reward, the child was scored by an independent observer as having made a correct response. However, if an incorrect response was made, the child was shown the correct box but not given the food reward. This procedure was continued, varying the location of the reward among the three boxes, until the child made three correct choices in a row. Three consecutive correct choices in a row were the criteria level for all the tasks in the battery. On the next subtask, the reward was first placed in A, then taken out and placed in B, all in full view of the child. On subsequent trials, the displacement was from B to C, C to A, and so on. For the third subtask, the experimenter kept the reward concealed in her hand and placed it in one of the boxes varying placement on subsequent trials. For the fourth subtask, *invisible displacement,* the procedure was the same except that the experimenter removed the reward through a slit in the *back* of the *initial* box and transferred it to one of the other boxes, the reward being hidden from the child's view at all times.

Ordination. For the ordination task, four unpainted boxes made of plywood of varying height (20cm, 16cm, 12cm, 8cm) but equal bases (10cm x 10cm) were lined up in a row in front of the child, spaced approximately 6cm apart. Again, each box had a hinged top. The child was either instructed to close his eyes or, with the more uncooperative subjects, assistance was given. Often it was necessary to turn the child's chair completely around. The reward was hidden in the box second from the experimenter's right. After each trial, the boxes were shifted around, but the reward always was placed in the box occupying the same ordinal position, regardless of the height of the box. The experiment was continued until the subject made three correct choices in a row or until 25 trials had elapsed. This aspect of procedure was maintained in the remaining tasks.

Classification. Six boxes were used in this task, although only three were present on any given trial. The six boxes were as follows: a green cylinder (12cm x 10cm), a blue rectangle (7cm x 10cm x 10cm), a blue truncated pyramid (9cm x 10cm), and three different wedge shaped boxes. Two wedges (8cm x 16cm x 16cm) differed only in color, one being blue and the other green, while the third was larger (10cm x 20cm x 20cm) and painted green. Three triads were used: Small blue wedge + green cylinder + blue pyramid; blue rectangle + small green

wedge + green cylinder; and large green wedge + green cylinder + blue pyramid. The three triads allowed counterbalancing of size, shape, and color so that, over trials, shape was the only reliable cue. Thus a correct response was scored when the child chose the wedge-shaped box. Ordinal position/location was rendered irrelavant by randomizing the placement of the three boxes.

Conservation of number. Four identical white boxes (10cm x 10cm x 10cm) were used in this task. On the face of each box was a randomly arranged collection of blue dots. One box had two dots, a second had three, a third had four, and the fourth had six. The experimenter had laid out *n* (2, 3, 4, or 6) raisins (or peanuts) in a line in front of the subject. The subject then covered his eyes and the experimenter placed the raisins in the appropriate box (e.g., three raisins were placed in the box with three dots). Over trials, *n* varied randomly, but the raisins were always in the box whose dots were equivalent in number to the raisins presented at the begining of the trial.

Seriation. The boxes employed for ordination were used again in the seriation task (heights of 20cm, 16cm, 12cm, 8cm), but not that these tasks were adapted from Siegel's (1971) nonverbal paradigm. We did not vary either the number or the position of the stimuli over trials which she had done. The reward was always placed in the second highest (16cm) box. The ordinal position and location of the boxes were randomized over trials.

Transposition. The transposition task immediately followed the seriation task. While the child covered his eyes, the tallest (20cm) box was removed and a box shorter (4cm) than the remaining three was added. The correct box was still the second highest, but this was now the 12cm box.

PROCEDURE

All subjects were tested in a 3m x 6m office equipped for observation. The boxes were placed on a 61cm high white table and the subject was seated directly opposite the experimenter. Initially, a few boxes were arranged haphazardly on the table for the children to explore and play with. This initial period provided an opportunity to compare the orienting responses of the children. After 3 minutes of free play, the boxes were removed, and a single box was placed in front of the child. This box was 10cm x 10cm, with a hinged top. The experimenter put a food reward (raisin, candy, or peanut changed over trials to avoid satiation) into the box. The child was told to "get it." If the child took the food reward, the experimenter placed a second reward in the box, this time closing the lid. Again, the child was told to "get it." These two steps were alternated and repeated until the child quickly and reliably opened the box, took out the reward, and ate it. Testing on object permanence then began, followed by ordination, classification, conservation of number, seriation, and transposition, in that order.

RESULTS

During the initial play session, there were no striking differences between the three groups of children. The autistic children tended more often to stare at a particular box and the TMR children tended to stare at their surroundings. Both of these groups were far more prone to staring, in general, than were the normal children. All of the autistic and normal subjects looked at, handled, and opened

the boxes spontaneously. Few TMR children did so. Some differences in behavior emerged during testing. Compared to normal and TMR children, autistic children more often handled boxes roughly when they were unable to retrieve the reward; one went so far as to throw them off the table. More striking was the fact that the autistic children took about three times longer to test than normal children and twice as long as TMR children. All children were tested in at least two sessions separated by several days. However, one autistic child required four sessions, each lasting about 40 minutes, and several required three such sessions, whereas the normal children were tested in two sessions, each lasting a maximum of 35 minutes. A given trial tended to be much longer for the autistic children. They had difficulty orienting to the task. When told to look, these children continued to stare at the lights or at their hands in such an intense manner that other stimuli went unnoticed (see also Lovaas, 1977). Furthermore, preventing them from peeking was often a very involved procedure. Following the *get it* command, several behaviors might again intervene before the child actually reached for and opened a box. These behaviors included the following: eye elevation, rubbing fingers together in repetitive fashion, drooling and swirling saliva in the mouth, flapping of hands, and other sterotypes.

The tasks varied in difficulty. Children were scored as passing if they made a criterion run of three correct responses in a row within 25 trials, except on the transposition task where three correct responses within five trials was required for a passing score. By these criteria all children passed all the object permanence tests; 92% passed classification; 64% passed ordination; 53% passed seritation; 36% passed conversation of number; and 19% passed transposition. The data from all the tasks save object permanence were subjected to scalogram analysis (Guttman, 1944). The coefficients of reproducibility (.97) and scalability (.89) were well within the accepted range.

Object permanence presented no problem for any of the children. However, TMR children generally required more trials to reach criteria. We found no support for claims that autistic children remain at the sensorimotor stage (Ornitz, 1971), that they are unable to progress beyond stage 5 of object permanence (Thatcher 1977), or that they function at the intellectual level of an infant (Alpern, 1967). The classification task was somewhat more difficult than object permanence. Normal children talked a lot during this task. They named the shapes; for example, wedge was "triangle"; they noted the colors, and sometimes picked the odd color. They also noted size; and many gave evidence that they understood that they were being asked, in effect, to find a pattern. However, we have no evidence that this verbalizing mediated discovery of the concept (Nelson, 1974; Potter, 1979), as neither the autistic nor TMR children verbalized to any degree, and yet they did well on the task. Some children also spontaneously verbalized in the ordination task, saying things like, "Oh, they're a family." Our correct choice evidently was of low salience to the children; they converged on the tallest box and/or on the boxes at either end of the row. Ordination was clearly more difficult than classification. Seriation was only slightly more difficult than ordination. However, it may be that children extinguish any ordinal-response preference very quickly on the seriation task since it had been previously rewarded in the ordination task. Children were considered to have passed the transposition test if they reached criteria in five or fewer trials. Only eight children were successful on this task. Conservation of number showed the most striking "stage" effect. Although none of the TMR

children were successful, all the normal and autistic children aged 6 to 9 years were. Only two children younger than 6 years (69 and 70 months) achieved conservation of number. The normal children were far morelikely than were children in the other groups to make reference to the "numerosity" aspect of the task by counting the dots or the raisins, by name the set size, or, more casually, by saying, "There are lots this time."

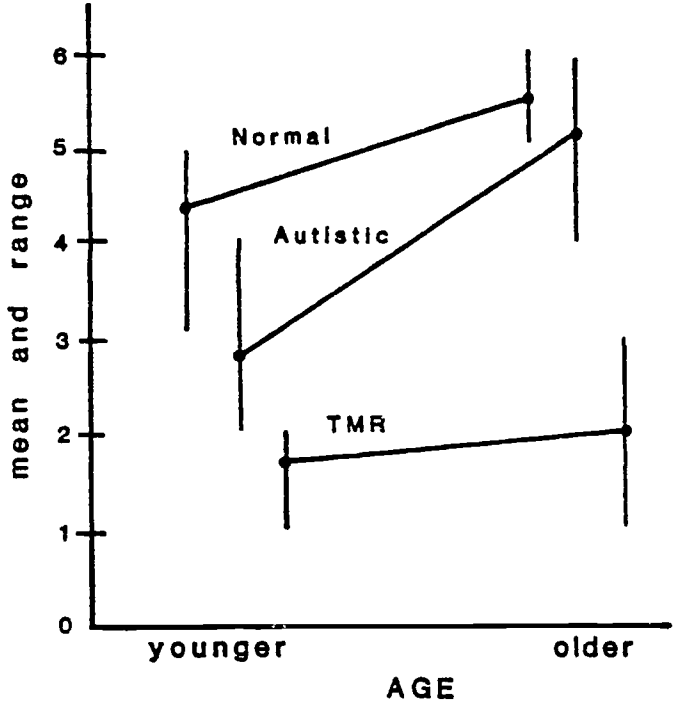

FIGURE 1. *Number of Concepts Acquired.*

Figure 1 displays the data in terms of the number of concepts (out of 6) acquired. Six children from each group were assigned to the younger age level (mean age = 55.6 months) and six to the older age level (mean age = 83.6 months). The developmental effect was most pronounced for the autistic group, indicating that their growth is at least partially a function of improved linguistic skills as a result of therapy.

A more detailed presentation of the results in terms of trials to criteria is shown in Table 1. Statistical analyses were carried out on these measures. A 3 (group) × 2 (age level) MANOVA yielded significant effects for Group, F (10,52) = 9.11, p<.001; Age, F (5, 26) = 11.46, p<.001; and the interaction, F (10,52) = 2.43, p<.02. Univariate ANOVAs indicated that, for autistic children, the age effect was significant at the .05 level or beyond on five tasks (all but ordination); for normal children, the effect was significant on four tasks (all but object permanence and classification — a clear ceiling effect); and for TMR children, none of the age effects reached significance. Planned comparisons were undertaken between groups at each age level. There was no difference in performance between normal and autistic children at the younger (Hotelling's T^2 (5.6) = 3.04,

NS) or older (T^2 (5,6) = 1.80, *NS*) age levels. Differences between autistic and TMR children were significant at both the younger (T^2(4,7) = 4.11, $p<.05$) and older (T^2 (5,6) = 24.65, $p<.001$) age levels.

TABLE 1

Performance on Tasks Expressed as Mean Number of Trials to Criteria

	Age Group					
	Normal	Younger Autistic	TMR	Normal	Older Autistic	TMR
Object Permanence	.3	1.0	2.6	0	.1	1.5
Classification	6.3	9.3	13.0	3.5	4.0	13.8
Ordination	17.2	13.8	*	4.7	6.8	22.8
Seriation	13.3	20.3	*	4.2	10.3	*
Conservation of Number	17.3	*	*	3.7	8.7	*
Mean age in months	54.5	55.3	56.8	84.5	82.2	84.2
	6	6	6	6	6	6

*All failed to reach criteria

DISCUSSION

Because of the linguistic and attentional deficits of autistic and retarded children, traditional measures of intelligence and cognitive development are inappropriate. The present study addressed these methodological considerations through the use of a unique nonverbal battery of concept/discovery tasks. These tasks incorporate many of the positive features of Piagetian testing while also eliminating certain problematic features of the clinical interview method. Thus, the present tasks assessed the cognitive development of children without the need for verbal instruction or verbal response. Furthermore, motivation was supplied within the paradigm in a nonverbal fashion.

The results indicate a progression of concept mastery with increased chronological age for the autistic and normal children. The older autistic and normal children acquired more concepts and in fewer trials than younger children in these two groups. All of these children passed the object permanence scales and the classification task. As task difficulty increased, age and group effects became more pronounced (Table 1). Every normal and autistic child in the older group reached criteria on the ordination and seriation tasks while only a few of the younger children passed. Moreover, none of the younger autistic children reached criteria on conversation of number or transposition; however, all of the older normal children and 67% of the older autistics passed conservation of number. Transposition yielded similar age discriminations: Only one younger child passed, while 50% of both the older autistic and normal children succeeded.

lack the potential for cognitive growth beyond the sensorimotor stage. It is not clear, however, whether this potential might fail to be realized in intractable cases. The resolution of this issue will have to await the testing of older autistic children whose condition has not been ameliorated by treatment.

In contrast to the normal and autistic children, a developmental trend was not observed in the mentally retarded group. All of the mentally retarded children failed the seriation, conservation of number, and transposition tasks. However, all passed the object permanence task and only a few failed the classification task. This failure to find developmental effects in the retarded group is consistent with the literature reviewed by Weisz and Zigler (1979). They conclude on the basis of numerous studies that cognitive development is related more to mental age than chronological age with retarded children.

Our results also accord very well with recent concept attainment studies (e.g., Siegel, Lees, Allan, & Bolton, in press; Wetherby & Gaines, in press) in which language-impaired and normal children were compared. These studies also find a slight advantage accrues to normal children, especially as the tasks become more difficult or advanced.

The striking parallels in the performance of autistic and normal children have many implications for treatment and diagnosis. First, these tasks are an effective means of assessing cognitive development in populations which have severe communication and attentional problems. Thus, there are opportunities now for more refined diagnostic efforts with autistic, aphasic, and deaf individuals. Finally, the present data have implications for the controversy surrounding the degree to which autistic children may be permanently retarded or immobilized at some early stage in their development (Curcio, 1978; DeMeyer, 1974; Lockyer & Rutter, 1969; Rutter, 1978; Thatcher, 1977). The results indicate that, whatever other problems they may have, autistic children do not seem to

REFERENCES

Alpern, G. D. Measurement of "untestable" autistic children. *Journal of Abnormal Psychology*, 1967, *72*, 478-496.

Babska, Z. The formation of the conception of identity of visual characteristics of objects seen successively. In P. H. Mussen (Ed.), *European research in cognitive development/monographs for the Society for Research in Child Development*, 1965, *30* (2), 112-124.

Baker, L., Cantwell, D., Rutter, M., & Barlaic, L. Language and autism. In E. Ritvo (Ed.), *Autism: Diagnosis, current research, and management*. New York: Spectrum Publications, 1976.

Beilin, H. The training and acquisition of logical operations. In M. F. Rosskoph, L. P. Steffee, & L. S. Taback (Eds.), *Piagetian cognitive developmental research and mathematical education*. Washington, D.C.: National Council of Teachers of Mathematics, 1971.

Beilin, H. Learning and operational convergence in logical thought development. *Journal of Experimental Child Psychology*, 1965, *2*, 317-339.

Bettleheim, B. *The empty fortress*. New York: Free Press, 1967.

Braine, M. D. S. The ontogeny of certain logical operations: Piaget's formulation examined by nonverbal methods. *Psychological Monographs*, 1959, *73* (5), 1-43.

Brainerd, C. J. Neo-Piagetian training experiments: Is there any support for the cognitive-development stage hypothesis? *Cognition*, 1973, *2*, 349-370.

Brainerd, C. J. Learning research and Piagetian theory. In L. S. Siegel & C. J. Brainerd (Eds.), *Alternatives to Piaget*. New York: Praeger, 1978.

Curcio, F. Sensorimotor functioning and communication in mute autistic children. *Journal of Autism and Childhood Schizophrenia*, 1978, *8*, 281-292.

DeMeyer, M. K. Motor, perceptual motor, and intellectual disabilities of autistic children. In L. Wing (Ed.), *Early childhood autism* (2nd ed.). London: Pergamon, 1974.

Freeman, B. J., & Ritvo, E. R. Cognitive assessment. In E. R. Ritvo (Ed.), *Autism: Diagnosis, current research, and management*. New York: Spectrum Publications, 1976.

Furth, H. *Thinking without language: Psychological implications of deafness*. New York: Free Press, 1966.

Gelman, R. Logical capacity of very young children: Number invariance rules. *Child Development*, 1972, *43*, 75-90.

Gittleman, M., & Birch, H. G. Childhood schizophrenia: Intellect, neurologic status, perinatal risk, prognosis, and family pathology. *Archives of General Psychiatry*, 1967, *17*, 16-25.

Guttman, L. A basis for scaling qualitative data. *American Sociological Review*, 1944, *9*, 139-150.

Inhelder, B., Sinclair, H., & Bovet, M. *Learning and the development of cognition*. Cambridge, Mass: Harvard University Press, 1974.

Kanner, L. Autistic disturbances of affective contact. *Nervous Child*, 1943, *2*, 217-250.

Lancy, D. F., & Strathern, A. "Making-Twos": Pairing as an alternative to taxonomic mode of representation. *American Anthropologist*, in press.

Lancy, D. F., Souviney, R., & Kada, V. Conservation of length among the Imbonggu. *International Journal of Behavioral Development*, in press.

Lockyer, L., & Rutter, M. A 5 to 15-year followup study of infantile psychosis III: Psychological aspects. *British Journal of Psychiatry*, 1969, *115*, 865-882.

Lovaas, O. I. Program for establishment of speech in schizophrenic and autistic children. In J. K. Wing (Ed.), *Early childhood autism: Clinical, educational, and social aspects*. London: Pergamon Press, 1966.

Lovaas, O. I. *The autistic child: Language development through behavior modification*. New York: Irvington, 1977.

Lovaas, O. I., Koegel, R., & Schreibman, L. Stimulus overselectivity in autism: A review of research. *Psychological Bulletin*, 1979, *86*, 1236-1254.

Miller, S. A. Nonverbal assessment of Piagetian concepts. *Psychological Bulletin*, 1976, *83*, 405-430.

Nelson, K. Concept, word, and sentence: Interrelations in acquisition and development. *Psychological Review*, 1974, *81*, 267-285.

Ornitz, E. M. Childhood autism: A disorder of sensorimotor integration. In M. Rutter (Ed.), *Infantile autism: Concepts, characteristics, and treatment*. London: Churchill-Livingstone, 1971.

Potter, M. C. Mundane symbolism: The relations among objects, names, and ideas. In N. R. Smith & M. B. Franklin (Eds.), *Symbolic functioning in childhood*. Hillsdale, N.J.: LEA, 1979.

Rimland, B. *Infantile autism*. New York: Appleton-Century-Crofts, 1964.

Risley, T. R., & Wolf, M. M. Establishing functioning speech in echolalic children. *Behavior Research and Therapy*, 1967, 5, 73-88.

Rutter, M. Diagnosis and definition of childhood autism. *Journal of Autism and Childhood Schizophrenia*, 1978, *8*, 139-161.

Siegel, L. S. The sequence of development of certain number concepts in preschool children. *Developmental Psychology*, 1971, 5, 357-361.

Siegel, L. S. The role of spatial arrangement and heterogeneity in the development of aspects of numerical equivalence. *Canadian Journal of Psychology*, 1973, *27*, 351-355.

Siegel, L. S. The relationship of language and thought in the preoperational child: A reconsideration of nonverbal alternatives to Piagetian tasks. In L. S. Siegel & C. J. Brainerd (Eds.), *Alternatives to Piaget*. New York: Praeger, 1978.

Siegel, L. S., Lees, A., Allan L., & Bolton, B. Nonverbal assessment of Piagetian concepts in preschool children with impaired language development. *Educational Psychology*, in press.

Thatcher, M. An application of Piaget's theory to autistic children. *Dissertation Abstracts International*, 1977, *38*, 919.

Tomlinson-Keasey, C., Eisert, D. C., Kahl, L. R., Hardy-Brown, K., & Keasey, B. The structure of concrete operational thought. *Child Development*, 1979, *50*, 1153-1163.

Uzigiris, I. C., & Hunt J. McV. *Assessment in infancy: Ordinal scales of psychological development*. Urbana: University of Illinois Press, 1975.

Weisz, J. R., & Zigler, E. Cognitive development in retarded and nonretarded persons: Piagetian tests of the similar sequence hypothesis. *Psychological Bulletin*, 1979, *86*, 831-851.

Wetherby, A.M., & Gaines, B. Cognition and language development in autism. *Journal of Speech and Hearing*, in press.

Wise, K. L., Wise, L. A., & Zimmermann, R. R. Piagetian object permanence in the infant rhesus monkey. *Developmental Psychology*, 1974, *10*, 429-437.

Woodruff, G., Premack, D., & Kennel, K. Conservation of liquid and solid quantity by the chimpanzee. *Science*, 1978, *202*, 991-994.

Woodward, M. Concepts of number of the mentally subnormal studied by Piaget's method. *Journal of Child Psychology and Psychiatry*, 1961, *2*, 249-259.

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Analysis of the Response Contingent Time-Out Literature with Behaviorally Disordered Students in Classroom Settings

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The purpose of this review is to analyze the clinical and experimental literature relative to the use of response contingent time-out with behaviorally disordered children and youth in classroom settings. While there has been extensive literature on the use of time-out with a variety of exceptional populations, e.g., mildly and moderately retarded children (Doleys, Wells, Hobbs, Roberts, & Cartelli, 1976; Foxx & Shapiro, 1978; Gresham, 1979; Sajwaj, Twardosz, & Burke, 1972; Spitalnik & Drabman, 1976), severely and profoundly retarded children and youth (Calhoun & Lima, 1977; Clark, Rowbury, Baer, & Baer, 1973; Duker, 1975; Miles & Cuvo, 1980; Murphy, Ruprecht, & Nunes, 1979; White, Nielson, & Johnson, 1972), and retarded and psychotic adults (Bostow & Bailey, 1969; Cayner & Kiland, 1974; Davis, Wallace, Liberman, & Finch, 1976; Finch, Wallace, & Davis, 1976; Mansdorf, 1977; Matson, Ollendick, & DiLorenzo, 1980), this review is limited to an analysis of time-out with children and youth labeled as behaviorally disordered or emotionally disturbed. Studies were considered relevant to this population if three critera were met: (a) The students were labeled behaviorally disordered, emotionally disturbed, emotionally handicapped, disruptive, negativistic, autistic, psychotic, aggressive, encopretic, oppositional, acting-out, or chronic tantrumers; (b) mental retardation was not noted as a characteristic of the students; and (c) the dependent measures were behaviors that occured with such a frequency, duration, or intensity as to be considered indicative of behavioral disorders.

In addition, while there have been a number of studies depicting the use of time-out in institutional or ward settings (Barton, Guess, Garcia, & Baer, 1970; Burchard & Tyler, 1965; Freeman, Somerset & Ritvo, 1976; Husted, Hall, & Agin, 1971; Tyler & Brown, 1967; Wolf, Risley, & Mees, 1964) and home settings (Allison & Allison, 1971; Bean & Roberts, 1981; Forehand, Roberts, Doleys, Hobbs & Resick, 1976; Hanley, Perelman, & Honan, 1979; Hawkins, Peterson, Schweid, & Bijou, 1966; Johnson, Whitman, & Barloon-Noble, 1978; Luiselli, 1980; Patterson, 1972; Scarboro & Forehand, 1975; Varni, Boyd, & Cataldo, 1978; Wahler & Fox, 1980), this review is limited to an analysis of time-out

interventions conducted in regular and special classrooms in the public school, classrooms in day-care centers and special schools, and special classrooms in residential treatment facilities.

DEFINITION OF TIME-OUT

Response contingent time-out, or time-out from positive reinforcement (Leitenberg, 1965), is a behavior reduction procedure whereby "access to the sources of reinforcement is removed for a particular time period, contingent upon the emission of a (maladaptive) response" (Sulzer-Azaroff & Mayer, 1977, p. 281).

Time-out is a form of "off-set punishment" (Rutherford, 1982, 41-64; Rutherford & Neel, 1978, 69-76) where behavior is suppressed by withdrawing the opportunity for reinforcement for a period of time following the occurrence of the behavior. The process of time-out is predicated on the assumption that the time-in (Solnick, Rincover, & Peterson, 1977) environment from which the individual is removed must be reinforcing. Thus, time-out is subjectively aversive because it involves removal from the reinforcing time-in setting. The empirical test of whether time-out is a punishment procedure is whether the maladaptive behaviors subsequently decrease in frequency. For example, if a student were placed in time-out for extremely aggressive verbal and physical behavior and if the aggressive behavior subsequently decreased, then time-out would serve as punishment for the aggressive behavior.

METHODS

The authors analyzed 33 published articles containing 40 studies using time-out with behaviorally disordered students in educational settings. Each study was analyzed as to subject criteria, experimental criteria, and procedural criteria. Subject criteria included the number, sex, age or grade, setting, and label of the students whose behavior was followed by a time-out contingency. All of the 40 studies provided information relative to these five subject variables. Experimental criteria included the type of research design used, whether reliability data were collected, and whether objective, repeated, and long-term followup data were collected. Procedural criteria included whether concurrent or time-in treatments were provided and whether fixed, consistent, and short time-out durations were employed. In addition, it was noted whether the time-out interventions were successful in decreasing the target behaviors.

RESULTS

Six types of response contingent time-out are reported in the intervention literature in behavioral disorders. These types of time-out involving varying degrees of restriction are: planned ignoring, planned ignoring plus restraint, contingent observation, reduction of response maintenance stimuli, exclusion, and seclusion. The 40 studies in this review were grouped and analyzed according to these six types of time-out.

TABLE 1
Planned Ignoring Time-Out Studies

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Wasik, Senn, Welch, & Cooper (1969)	2	F	7 yrs.	Agressive	Special Kinder-garten	ABAB A=baseline B=planned ignoring time-out + seclusion time-out	.90 to 1.00	Inappropriate behaviors (desirable behaviors at the wrong time or place) & unacceptable behaviors (aggression or resistance)	Social reinforcement for desirable behaviors	3 checks within 3 months	Indefinite for planned ignoring & 5 minutes seclusion	Decreased inappropriate & unacceptable behaviors	Planned ignoring for inappropriate & seclusion for unacceptable behaviors
Sibley, Abbott, & Cooper (1969)	1	M	5 yrs.	Aggressive	Special Kinder-garten	ABCAC A=baseline B=planned ignoring time-out C=planned ignoring time-out + seclusion time-out	.86 to 1.00	Inappropriate & unacceptable behaviors	Social reinforcement for desirable behaviors	—	Indefinite for planned ignoring & 5 minutes seclusion	Decreased inappropriate & unacceptable behaviors	Planned ignoring for inappropriate & seclusion for unacceptable behaviors
Pierce (1971)	1	F	12 yrs.	Emotionally disturbed	Regular Classroom	Case study	—	Verbal & physical "crazy" behaviors	—	—	Indefinite	Decreased "crazy" behaviors (subjective)	Reinforce peers to institute planned ignoring time-out for "crazy" behaviors
Pinkston, Reese, Le Blanc, & Baer (1973)	1	M	3 yrs.	Aggressive	Special Preschool	ABABAB A=baseline B=planned ignoring time-out	.92	Motor or verbal aggression: biting, pinching, yelling, etc.	Social reinforcement for appropriate peer interaction	1 month	Indefinite	Decreased aggression from 28% to 6% of peer interactions	—

TABLE 1 (continued)

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
MacArthur & Hawkins (1974)	1	M	8 yrs.	Emotionally disturbed	Regular Classroom	ABAB A=baseline B=planned ignoring time-out	.75 to 1.00	Out-of-turn vocalizations, out-of-seat, & attention to work or teacher	Edible, token & social reinforcement + drug therapy	3 months (subjective)	5 minutes	Decreased vocalizations from above 20% to below 10%; out-of-seat from 32.2% to below 1%; increased attention from below 15% to above 69%	Special in-class therapist (mother)
Plummer, Baer, & Le Blanc (1977)	1	F	5 yrs.	Autistic	Special Preschool	Multiple baseline across teachers ABA + A=paced instructions with planned ignoring time-out B=paced instructions	.92	Disruptions: hoarding or grabbing play material, teasing activities, echolia & tantrums	Paced instructions & social reinforcement for appropriate contact with materials	—	1 minute	Increased disruptions in time-out condition	Time-out was a negative reinforcer
	1	M	5 yrs.	Autistic	Special Preschool	Multiple baseline across teachers with ABCBDBC A=baseline B=paced instructions + reinforcement C=paced instructions + reinforcement + planned ignoring time-out D=paced instructions alone	.92	Inappropriate eating behaviors: throwing food, rocking in chair, finger playing, etc.	Paced instructions & social reinforcement for appropriate eating behaviors	—	10 seconds	Increased inappropriate eating in time-out condition	Time-out was a negative reinforcer

Scott (1977)	1	M	8 yrs.	Encopretic	Special School	ABCB A=baseline B=teacher control C=planned ignoring time-out	—	Soiling episodes	Social reinforcement for nonsoiling	—	—	Decreased soiling from 11 to 1.3 per week	Special in-class therapist (nurse)
Miller & Kratochwill (1979)	1	F	10 yrs.	Chronic Complainer	Regular Classroom & Home	Multiple baseline across settings	.96 home .98 school	Complaints of stomach aches	—	4 weeks 6 weeks 8 weeks 1 year	Indefinite (rest of day)	Decreased complaints in home from 1.4 to .06 per day & in school from .16 to .06 per day	Sent to room to "rest"
Harris & Wolchik (1979)	1	M	6 yrs.	Autistic	Special Day School	ABACAADACAC A=baseline B=DRO C=over-correction D=planned ignoring time-out	.82	Self-stimulation	—	—	10 seconds	Increased self-stimulation from 12.4 to 31.06 per session during time-out	Correction more effective than planned ignoring time-out
	1	M	5 yrs.	Autistic	Special Day School	ABACADAD A=baseline B=planned ignoring time-out C=over-correction D=DRO	.82	Self-stimulation	—	—	10 seconds	Decreased self-stimulation from 9.8 to 5.1 per session during time-out	Correction more effective than planned ignoring time-out
	1	M	6 yrs.	Autistic	Special Day School	ABACADAD A=baseline B=DRO C=planned ignoring time-out D=over-correction	.89	Self-stimulation	—	—	10 seconds	Increased self-stimulation from 14.7 to 18.3 per session during time-out	Correction more effective than planned ignoring time-out
	1	M	7 yrs.	Autistic	Special Day School	ABACADA A=baseline B=DRO C=planned ignoring time-out D=over-correction	.90	Self-stimulation	—	—	10 seconds	Decreased self-stimulation from 27.4 to 17.9 per session during time-out	Correction more effective than planned ignoring time-out

* reliability

Planned Ignoring Time-Out

Of the time-out studies analyzed 13 involved the use of planned ignoring time-out (see Table 1). Planned ignoring is a procedure where the teacher systematically turns away, removing his or her social attention from the student for a set period of time contingent upon each instance of the maladaptive behavior. The premise behind planned ignoring time-out is that teacher attention during time-in is reinforcing and that removal of that attention will suppress maladaptive behavior.

Of the 13 studies which used planned ignoring, 12 employed experimental designs, 11 collected reliability data, 2 collected objective, repeated, and relatively long-term followup data, 7 provided for enriched time-in, and 7 provided a fixed, consistent, and short time-out duration. While only the Pierce (1971) study can be classified as a case study, that is a report of an intervention procedure lacking both baseline and reliability data relative to the dependent measure, many of the remaining 12 planned ignoring studies contain a number of design and procedural flaws. These flaws include failure to provide reversal and reinstatement data, failure to provide objective, repeated, and long-term followup data, failure to specify the duration of the time-in period, and failure to provide for enriched time-in.

Only 4 of these studies (MacArthur & Hawkins, 1974, pp. 342-353; Pinkston, Reese, LeBlanc, & Barr, 1973; Sibley, Abbott, & Cooper, 1969; Wasik, Senn, Welch, & Cooper, 1969) reported reversal and reinstatement data relative to time-out while 3 others reported multiple baseline data across teachers (Plummer, Baer, & LeBlanc, 1977) or across settings (Miller & Kratochwill, 1979). While Wasik et al. (1969) and Sibley et al. (1969) presented reversal and reinstatement data relative to a combination of planned ignoring time-out for inappropriate behavior and seclusion time-out for unacceptable behavior during this intervention, they failed to provide these data for the planned ignoring time-out in isolation. The question remains whether the presence of the more restrictive seclusion time-out, although contingent upon different behaviors, may have influenced the effectiveness of the less restrictive planned ignoring time-out intervention.

The four studies reported by Harris and Wolchik (1979) involving young autistic children were designed to analyze the relative effects of planned ignoring time-out, DRO, and overcorrection on self-stimulatory behavior. While overcorrection was shown to be superior to planned ignoring time-out and DRO in each of the four cases, specific time-out return to baseline and reinstatement data were not collected. An interesting finding with Harris and Wolchik's study was that the self-stimulatory behavior of two of their four autistic children actually increased during the time-out contingency.

Plummer et al. (1977) also found that planned ignoring time-out functioned as a negative reinforcer rather than a punisher in their two studies with autistic 5-year-olds. Disruptions and inappropriate eating behaviors increased during the time-out phase indicating that perhaps time-in was aversive and maladaptive behaviors increased because they functioned to escape or avoid the time-in environment.

An important question relative to the effects of time-out, or other behavioral interventions for that matter, is whether the effects of the intervention maintain and generalize following the termination of the time-out contingency. Maintenance and generalization are reported as followup data. Of these 13 studies 9

reported no followup data and, of the remaining 4 studies, 1 reported a 1-month, one-shot followup and another a 3-month subjective report of maintained effects. The Miller and Kratochwill (1979) study reported systematic followup at 4-week, 6-week, 8-week, and 1-year intervals and Wasik et al. (1969) reported 3 followup data checks over a 3-month period.

Another issue in evaluating the implementation of time-out is the duration of the time-out period. Gast and Nelson (1977a, 1977b) proposed that the length of the time-out period, that is the amount of time spent behaving appropriately before release from the time-out contingency, should be fixed, consistent, and relatively short (e.g., no more than 5 minutes). Of the 13 planned ignoring studies reviewed here, 5 studies reported 10-second time-out periods, 1 study reported a 1-minute time-out duration, 1 reported a 5-minute duration, while 6 either failed to report or reported indefinite duration data.

Accumulated evidence suggests that time-out appears to be most effective as a behavior reduction procedure when time-in (e.g.,. the environment from which the individual is removed) is enriched with reinforcers (Solnick et al, 1977). In planned ignoring, as in the other types of time-out, time-in must be relatively more reinforcing than time-out for time-out to be effective. If the time-in environment is not reinforcing, then removal from time-in may not be aversive. Enrichment of time-in is likely to enhance the effectiveness of time-out. A procedural paradox occurs, however, in those studies which have a systematic program for reinforcing behaviors which are incompatible with the maladaptive responses which are consequated with time-out. It is difficult to determine whether behavior change is due to time-out, enriched time-in, or a combination of both time-out and enriched time-in. Of the studies which attempted to enrich the time-in environment (which included systematic reinforcement of time-in behaviors) concurrent with time-out, none evaluated the effects of these interventions components separately.

Seven of the studies included in the planned ignoring category involved systematic and extensive application of social reinforcers during the time-in period, while MacArthur and Hawkins (1974, pp. 342-353) also provided edible and token reinforcers during time-in. Interestingly, as noted earlier, the two Plummer et al. (1977) studies, while providing for enriched time-in, reported increased disruptive and inappropriate behaviors during the planned ignoring phases of the study. On the other hand, while Harris and Wolchik (1979) did not provide direct enrichment of time-in, two of their subjects' self-stimulations decreased while the self-stimulatory behaviors of the other two subjects increased during the time-out phase.

In summary, while three of the planned ignoring studies (Miller & Kratchowill, 1979; Pinkston et al., 1973; Wasik et al., 1969) met the experimental criteria and two of the studies MacArthur & Hawkins, 1974, pp. 342-353; Plummer et al., 1977) met the procedural criteria, none of the 13 planned ignoring studies met all of the experimental and procedural criteria analyzed in this review.

Planned Ignoring Plus Restraint Time-Out

A variation of the planned ignoring time-out procedure involves adding physical restraint to the removal of adult attention. Restraint in this context involves physically holding but not otherwise interacting with the child contingent upon the maladaptive behavior. This procedure, commonly used with tantrumming

TABLE 2
Planned Ignoring Time-Out Plus Restraint Studies

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Carlson, Arnold, Becker, & Madsen (1968)	1	F	8 yrs.	Tantrumer	Regular Classroom	Case Study	—	Tantrums	Stars exchangeable for class party	1 year (subjective)	Indefinite	Decreased tantrums	Increased tantrums on follow-up in new classroom
Luiselli, Reisman, Helfen, & Pemberton (1976)	1	M	7 yrs.	Autistic	Self-contained classroom	Multiple baseline across behaviors + ABCACA A=baseline B=reinforcement C=planned ignoring time-out + restraint	.93 & .82	Self-stimulation: clapping & rocking	Social reinforcement for not clapping & rocking	7 weeks	20 seconds	Decreased clapping from 25% to 1.3% & rocking from 15.3% to 4.1%	Both behaviors failed to reversed
Solnick, Rincover, & Peterson (1977)	1	F	6 yrs.	Autistic	Self-contained Classroom	ABABCAD A=baseline B=planned ignoring time-out C=opportunity to self-stimulation D=restraint of self-stimulation	.88 to .98	Tantrums	Edible & social reinforcement for correct responses	—	10 seconds	Increased tantrums from 2.56 to 15.5 per session during planned ignoring time-out & decreased to 2.0 during restraint of self-stimulation	Planned ignoring time-out not effective when opportunity to self-stimulation available
Noll & Simpson (1979)	1	M	6 yrs.	Emotionally disturbed	Self-contained Classroom	ABAB A=baseline B=planned ignoring time-out + physical restraint	.96 to 1.00	Verbal aggressions: profane & vulgar language in response to staff instructions or requests	Social reinforcement for task completion	—	30 seconds	Decreased verbal aggressions from 85.4 to 1.0 per day	"Basket hold" time-out

* reliability

or self-stimulatory behaviors of young children, is designed to control the behavior in question while not providing additional attention to the behavior in terms of verbal interactions, eye contact, or other forms of social reinforcement for the maladaptive behaviors.

Four articles reporting the use of planned ignoring plus restraint time-out were analyzed (see Table 2). The first, a case study by Carlson, Arnold, Becker and Madsen (1968), involved a short-term decrease in the number of tantrums emitted by an 8-year-old girl in a regular classroom. The time-in environment was enriched by stars earned for nontantrum behavior, which were exchangeable for a class party. No control or reliability data were reported and tantrums increased again on followup.

The other three studies in this category involved a self-stimulating autistic 7-year-old boy (Luiselli, Reisman, Helfen, & Pemberton, 1976), a tantrumming autistic 6-year-old girl (Solnick et al., 1977), and a verbally aggressive, emotionally disturbed 6-year-old boy (Noll & Simpson, 1979). These studies presented adequate baseline and reliability data, concurrent social reinforcement during time-in, and fixed, consistent, and short time-out durations. Solnick et al. (1977), however, did not collect reversal and reinstatement data relative to the restraint factor and neither the Solnick et al. (1977) nor the Noll and Simpson (1979) studies provided followup data relative to the long-term effects of this time-out contingency. While the Luiselli et al. (1976) study failed to collect repeated followup data, it met all of the other experimental and procedural criteria for adequate investigation of the effects of time-out. However, they found that the frequency of self-stimulatory behaviors did not change during the reversal or the reinstatement phases.

This failure to reverse, coupled with the failure to collect reversal or reinstatement data in the Carlson et al. (1968) and Solnick et al. (1977) studies seriously limits the degree to which behavior change can be attributed to the planned ignoring plus restraint contingency in these studies. Only the Noll and Simpson (1979) study presents controlled data supporting the effectiveness of this time-out contingency.

Contingent Observation Time-Out

Contingent observation time-out is a relatively nonrestrictive time-out procedure where, contingent upon the occurrence of the maladaptive behavior, the child is removed from the group's activity to the periphery of the group where he or she can continue to watch but not otherwise participate for a period of time contingent upon a specified behavior.

Although Porterfield, Herbert-Jackson, and Risley coined the term "contingent observation" in 1976, Baer, Rowbury, and Baer (1973) reported a similar procedure three years before. Three well-constructed studies (see Table 3) investigated the effects of this time-out procedures with two negativistic preschoolers (Baer et al., 1973), with 26 disruptive toddlers (Porterfield et al., 1976), and with a disruptive toddler (Tyroler & Lahey, 1980). In the Baer et al. (1973) study, the child was seated in her chair in the middle of the classroom for 1 minute contingent upon each instance of failure to comply with an instruction. After 1 minute of quiet observation the child could return to the group activity. Porterfield et al. (1976) moved the toddler to the periphery of the large group for 1 minute contingent upon the emission of disruptive behaviors. The child was

instructed to sit quietly and watch the group activity but to not interact with the group members. As in the other study, 1 minute of quiet observation resulted in the child returning to the group. Tyroler and Lahey (1980) instituted a similar 1-minute contingent observation procedure in a replication of the Porterfield et al. (1976) study.

These three studies reported adequate reliability data, reversal and reinstatement data, and concurrent social reinforcement during time-in. While Porterfield et al. (1976) reported followup data at 1-and 3-month intervals, neither Baer et al. (1973) nor Tyroler and Lahey (1980) reported followup data. In the Porterfield et al. (1976) study, time-out varied between 30 and 60 seconds, whereas both Baer et al. (1973) and Tyroler and Lahey (1980) employed a fixed 1-minute time-out duration.

Apart from the relatively minor limitations noted above, the carefully controlled experimental procedures employed in these three studies indicate that contingent observation time-out may be an effective behavior reduction procedure with young children with minor behavioral problems.

Reduction of Response Maintenance Stimuli Time-Out

Reduction of response maintenance stimuli time-out involves the systematic enrichment of the time-in environment through the addition of reinforcing stimuli and then withholding access to these stimuli contingent upon maladaptive behaviors. A laboratory prototype of this category of time-out was devised by Baer (1962) who provided young children with cartoons and then withheld access to the cartoons for set time intervals contingent upon thumbsucking behaviors. When the children put their thumbs in their mouths, the cartoons were stopped. Thumbsucking decreased significantly.

Foxx and Shapiro (1978) devised a time-out ribbon for five disruptive, severely retarded children in a classroom setting. The procedure involved having the children wear "special" brightly colored ties or ribbons when they exhibited appropriate behavior. These ties signaled the teacher and other adults that the children were to receive high levels of social and edible reinforcement because they were behaving appropriately. When a child misbehaved, the time-out ribbon was removed for up to 3 minutes. Adults in the classroom did not provide social or edible reinforcers during that time. Disruptive behaviors decreased significantly.

In the two studies reviewed here which used reduction of response maintenance stimuli time-out specifically with behaviorally disordered children (see Table 4), Kubany, Weiss, and Sloggett (1971) investigated the use of a "good behavior clock" with the disruptive behaviors of a 6-year old emotionally handicapped boy and Devine and Tomlinson (1976) reported on the use of a "work clock" in reducing disruptive behaviors of 129 third and fourth graders.

Kubany et al.'s (1971) good behavior clock involved establishing a large 15-minute timer as a signaling device so that every 2 minutes of appropriate behavior on the part of the emotionally handicapped student resulted in a treat being placed in the sharing jar to be distributed by the student to his classmates and himself at the end of the school day. As long as he behaved appropriately (defined as being in his seat and talking only with permission), the clock continued to run and he earned a treat for every 2 minutes of running time. If he was disruptive — out-of-seat or talking without permission — the clock was

stopped for as long as his disruption continued. Kubany et al. (1971) reported that disruptive behavior dropped from 88% during baseline to less than 15% at the end of the study.

A work clock procedure described by Devine and Tomlinson (1976) involved placing a large 60-minute timer in seven third and fourth grade classrooms. The purpose of the clock was to signal a group contingency whereby as long as all class members were in their seats, talking only when called upon, and attending, the clock continued to run. The students were told at the beginning of each class how much clock time must accumulate (typically 15 to 20 minutes less than the total time of the period) before free time could be earned at the end of the period. If during the period a student was disruptive by leaving his or her seat, talking out, or not attending, the clock was stopped until the pupil complied with the rule, at which time the clock was started again. When the clock completed its cycle, all work stopped and whatever time remained in the period was free time. Devine and Tomlinson (1976) reported that disruptive behaviors decreased markedly for nonreferral students.

The Kubany et al. (1971) and Devine and Tomlinson (1976) studies presented some interesting similarities and differences with regard to their procedures and results. Both reported similar levels of reliability (.88 and .85 respectively), one-shot followup data was collected at about the same time (2 months and 5 weeks respectively), both employed group contingencies (group treats and group free-time respectively), and disruptions constituted the dependent measure. The differences included different design and analysis procedures (single-subject reversal design versus pretest-posttest comparison group design), different time-out durations (15 seconds of quiet following each disruption versus clock off only as long as disruption lasted), and different results (significant reduction of disruptions versus significant reduction of disruptions for nonreferred students only).

Apart from failure to collect repeated followup data, both studies presented controlled data supporting the effectiveness of reduction of response maintenance stimuli time-out in reducing disruptive behaviors. Perhaps the failure of this time-out contingency to reduce the frequency of disruptions among referred students in the Devine and Tomlinson study was influenced by the lack of a fixed time-out duration.

Exclusion Time-Out

Exclusion time-out is a behavior reduction procedure in which the student is removed from the reinforcing time-in setting for a specified period of time. Exclusion time-out essentially goes up one step beyond contingent observation time-out; contingent upon the misbehavior, the student is totally removed from the reinforcing environment. Exclusion time-out, however, stops short of seclusion time-out in that a total isolation area is not provided during time-out. Examples of exclusion include removal of the child from the cafeteria contingent upon inappropriate eating behaviors (Henricksen & Doughty, 1967) 2 minutes of being seated outside the classroom for disruptive and assaultive behaviors in the classroom (Briskin & Gardner, 1968), and systematic suspension from the public schools for bizarre and aggressive behaviors (Brown & Shields, 1967; Keirsey, 1969, pp. 89-113; Shier, 1969, pp. 114-123.)

All three studies reviewed which focused on classroom applications of exclusion time-out (see Table 5) reported significant reductions in disruptions and

TABLE 4
Reduction of Response Maintenance Stimuli Time-Out

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Kubany, Weiss, & Sloggett (1971)	1	M	6 yrs.	Emotionally Handicapped	Self-Contained Classroom	ABAB A=baseline B=time-out	.88	Disruptions: out-of-seat & talking without permission	Positive group contingencies based upon child's behavior	2 months	15 seconds	Decreased disruptions from 88% to 13%	"Good behavior clock"
Devine & Tomlinson (1976)	129	M/F	3rd & 4th	Mildly Disruptive	Regular Classroom	Pretest/ Posttest	.85	Disruptions: hitting, noisy, destructive & being in inappropriate area of classroom	Group free time for work completion	5 weeks	Indefinite: As long as disruption continued clock stayed off	Significantly decreased disruptive behaviors for non-referred students only	"Work clock"

*reliability

TABLE 5
Exclusion Time-Out Studies

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Briskin & Gardner (1968)	1	F	3 yrs.	Disruptive & Difficult to Control	Nursery School	ABAB A=baseline B=exclusion time-out	.96	Disruptions: screaming, throwing things, crying, whining, not waiting turn, biting, hitting, etc.	Social reinforcement for socially acceptable behaviors	30 days	2 minutes	Decreased disruptions from 59% to 6%; disruptions failed to reverse	Removed from classroom

TABLE 5 (continued)

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concu.rent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Firestone (1976)	1	M	4 yrs.	Aggressive	Nursery School	AB A=baseline B=exclusion time-out	.92 (only one check)	Physical & verbal aggression: striking, kicking destroying others' property, pulling, hitting, commanding, threatening, teasing, & verbal conflicts	—	—	2 minutes	Decreased physical aggression from 20% to 1.7% & verbal aggression from 3.7% to .53%	Placed in corner of classroom
Pease & Tyler (1979)	15	11M 4F	7 to 14 yrs.	Behavioral and/or Learning Problem Children	Self-Contained Classroom	BABCD B=teacher determined time-out duration A=baseiine C=student determined time-out duration D=teacher determined time-out duration based upon average duration in C	—	Disruptions: hitting, swearing, refusing to work, etc.	Teacher vs. student specified time-out durations	—	5 minutes	Decreased disruptions from 10.7% to 3.5% per student per 10 days	Sent to time-out area in classroom

* reliability

aggressions. However, each study contained at least one major methodological flaw which seriously limits generalization of the findings to similar problem situations. For example, the Briskin and Gardner (1968) study met such design and procedural criteria for effective time-out as precise response definition, high interobserver reliability, a four-stage ABAB evaluation design, concurrent time-in enrichment with social reinforcement, objective although short-term and one-shot followup data, and short fixed time-out duration; e.g., 2 minutes. However, the disruptive behaviors of the nursery school child continued to decrease during the reversal period. This failure to accomplish reversal raises the question of whether exclusion time-out was the primary factor in controlling disruptions and leaves upon the possibility that other variables (such as the presence of the mother in the classroom) may have been responsible for the significant changes in the child's behavior.

In the Firestone (1976) study, exclusion time-out was contingent upon physical aggression of another nursery school child. The author observed concomitant decreases in verbal aggression, isolate play, and teacher-child interactions, as well as increase in activity level and cooperative interactions with others. There are three serious methodological flaws in this study which limit its replicability. First, a return to baseline was not attempted, leaving in question whether change was due to factors other than exclusion time-out. Second, followup data indicating whether behavioral changes maintained and generalized over time were not collected. Third, the reliability of the behavioral observations in this study is questionable. The number of observers is unclear, the difficulty of doing 15-second interval recording for 2 hours daily covering five general response categories is never adequately addressed, and the one-shot reliability check is inadequate to confirm interobserver reliability.

The third exclusion time-out study reviewed here involved applying a 5-minute removal to a time-out area of the classroom contingent upon the disruptive behaviors of 15 children in a self-contained classroom for students with behavioral and learning problems. Pease and Tyler (1979) found that both teacher and student determination of the duration of the time-out period resulted in significant decreases in the number of classroom disruptions by the students. However, since reliability data were collected only on teacher behaviors and not student disruptive behaviors, no reliable conclusions can be drawn relative to the efficacy of exclusion time-out with these disruptive students. In addition, Pease and Tyler (1979) failed to collect followup data.

While removing a student from the classroom for misbehavior is a common practice in some schools, there appear to be no systematic studies of the effects of exclusion time-out with behaviorally disordered children and youth in classroom settings. While the Briskin and Gardner (1968) study met all of the experimental and procedural criteria except for collection of repeated followup data, the failure of this study to achieve a reversal effect, coupled with the fact that the other two studies in this category failed to meet even a majority of the criteria, seriously limits any generalizations about the effectiveness of exclusion time-out.

Seclusion Time-Out

Seclusion time-out, the most controversial of the time-out procedures (Smith, 1981; Polsgrove, in press; Smith, in press), involves removing the student from the classroom setting and placing him or her in a specially designed isolation

TABLE 6
Seclusion Time-Out Studies

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Slaone, Johnstone, & Bijou (1967)	1	M	4 yrs.	Emotionally Disturbed	Special Preschool	ABC A=baseline B=seclusion time-out in remedial classroom C=seclusion time-out in regular classroom	.93	Aggression: oppositional physical assaults, verbal assaults, & destructive behaviors. Excessive fantasy play	Social reinforcement for cooperative & friendly behavior	10 months (subjective)	2 minutes	Decreased aggressions from 15 to 3 per day & fantasy play from 35% to 4%	Seclusion time-out for aggression & planned ignoring time-out for fantasy play
Mattos, Matt-son, Walker, & Buckley (1969)	6	M	4th to 6th	Behaviorally Disordered	Self-contained Classroom	BAC B=seclusion time-out A=baseline C=seclusion time-out for minor disruptions/ exclusion from school for major disruptions	.70 to 1.00	Disruptions: talking, walking around classroom, throwing objects, & swearing	Group token economy	2 weeks	10 minutes	Decreased disruptions from 49% to 23%	Greatest attention to task with both token economy & time-out
Wahler (1969)	1	M	5 yrs.	Oppositional	Home & Regular Classroom	ABAC A=baseline B=seclusion time-out, & DRO at home C=seclusion, time-out, & DRO at home & school	.90 to .97	Failure to comply with requests or demands	Social reinforcement for cooperative behaviors	—	5 minutes	Decrease oppositional behavior	Emphasis on training parents & teachers to enrich time-in
Ramp, Ulrich, & Dulaney (1971)	1	M	9 yrs.	Disruptive	Regular Classroom	ABCA A=baseline B=instructions C=seclusion time-out	.99 (only one check)	Disruptions: out-of-seat & talking	—	—	5 minutes	Decreased out-of-seats from 23.7% to .09% & talking from 17.1% to .26% per 15 minute session	Delayed se-clusion time-out

Drabman & Spitalnik (1973)	6	—	9 to 11 yrs.	Emotionally Disturbed	Residential Facility Classrooms	Multiple baseline across behaviors + ABA A=baseline B=seclusion time-out	.82 to 1.00 for aggression & .80 to .95 for out-of-seat	Disruptions. aggression & out-of-seat	—	—	10 minutes	Decreased aggressions from 28% to .37% & out-of-seat from 9% to 1.1%	"Pseudo time-out"
Lahey, McNees, & McNees (1973)	1	M	10 yrs.	Disruptive	Self-contained classroom	ABCAC A=baseline B=over-correction C=seclusion time-out	.91	Obscene "verbal tic"	—	4 weeks	1 minute	Decreased obscentities from 2 to 0 per minute	Seclusion time-out more effective than over-correction
Sachs (1973)	1	M	10 yrs.	Emotionally Disturbed	Self-contained Classroom	ABABAC A=baseline B=seclusion time-out C=seclusion time-out & sign	.90 to 1.00	Inappropriate behaviors: disrupt class, damage equipment & injure others	—	—	5 minutes	Decreased inappropriate behavior from 23 to less than 3 per 5 minute session	Sign placed on room door not to talk to occupant
	1	M	13 yrs.	Emotionally Disturbed	Self-contained Classroom	ABCDAD A=baseline B=verbal reprimand C=seclusion time-out D=planned ignoring time-out	—	Self-stimulation; spinning, hand waving, repetitive gutteral sounds	—	—	30 seconds	Decreased self-stimulation from 6 to 0 per 5 minute session	Reinforced self-stimulation in reversal
	1	M	5 yrs.	Emotionally Disturbed	Self-contained Classroom	AB A=baseline B=seclusion time-out	—	Uncooperative behavior: refused to obey 3 commands in a row	Social reinforcement for obeyed commands	—	5 minutes	Decreased uncooperative behaviors from 100% to 15% per 2 hour period	Placed in darkened 5 ft. x 5 ft. room
Spencer & Gray (1973)	2	M	Pre-school	Disruptive	Regular Kinder-garten	ABAB A=baseline B=seclusion time-out	.90	Inappropriate behavior: pushing/ hitting others, throwing etc.	—	—	3 minutes (extra 10 minutes if not quiet in time-out)	Decreased inappropriate behaviors from 100% to 19% & 29%	"Time-out box"

TABLE 6 (continued)

Study	N	Sex	Age/ Grade	Label	Setting	Design	r*	Dependent Measure(s)	Concurrent Treatment(s)	Follow-up	Length of Time-Out	Results	Comments
Streedbeck & Pommer 1974)	1	F	8 yrs.	Disruptive	Residential Facility Classroom	AB A=baseline B=seclusion time-out	—	Out-of-seat	Edible reinforcement for in-seat	20 weeks (5 days)	5 minutes (for every third out-of-seat)	Increased in-seat behavior from 19% to 90.5%	Corresponding decrease in one-to-one teaching time needed
Reichla, Brubakken, &Tetreault (1976)	1	M	5 yrs.	Psychotic	Residential Facility Classroom	ABCD A=baseline B=social reinforcement C=seclusion time-out D=combined B & C	94	Perserverative speech	Social reinforcement for non-perserverative speech	6 months	2 minutes	Decreased perseverative speech from 23 to 7.6 per half-hour	Seclusion time-out more effective than reinforcement of incompatible behavior
Webster (1976)	1	M	13 yrs.	Acting-Out	Regular Classroom	ABC A=baseline B=verbal reprimands C=seclusion time-out	—	Aggression: throwing objects, hitting others with hands or objects, kicking, biting, & pushing	—	8 weeks	Indefinite	Decreased aggressions from 4.8 to less than 1 per day	Textbooks taken to time-out
Smith (1981)	1	F	11 yrs.	Autistic	Special Day School	AB A=baseline B=seclusion time-out	—	Self-injurious behavior: screaming, face slapping, & head banging	—	1 month	Indefinite (asked at 1 minute intervals to come out of time-out)	Decreased self-injurious behaviors	Teacher asked child to come out of time-out
	1	M	10 yrs.	Autistic	Special Day School	Case Study		Screaming	—	1 month 2 months	Indefinite (free to return)	Decreased number of time-outs	Measured number of time-outs not number of screams

* reliability

room or cubicle for a short period of time contingent upon some misbehavior. Whelan and Haring (1966) were the first to report the use of a time-out or isolation room in the modification of the maladaptive behaviors of emotionally disturbed children in the classroom. This type of time-out, which Whelan (1968) equated with the psychoeducational procedure of antiseptic bouncing (Long & Newman, 1965, pp. 442-452), has come under a great deal of judicial and legislative scrutiny in institutions for the retarded, the delinquent, and the mentally ill, as well as in the public schools. In the Wyatt vs. Stickney (1972) decision, the court held that the right to treatment in an institution included the right to be free from prolonged isolation. While seclusion time-out may be permitted if less restrictive means for controlling behavior are not feasible, therapeutic time-out can only be for 1 hour or less. The Morales vs. Turman (1974) decision requires due process hearings for all time-out procedures which involve isolation for over 1 hour. With this judicial monitoring of seclusion time-out procedures in mind, Gast and Nelson (1977a, 1977b) developed a set of guidelines for time-out in the classroom.

Of the studies analyzed 15 dealt with seclusion time-out (see Table 6). While precision and caution in implementing each of the various time-out procedures are extremely important, the need for procedures that are systematically planned, carefully supervised, and continually evaluated is most crucial in the case of seclusion time-out (Gast & Nelson, 1977a, 1977b). Unfortunately, at least 10 of the 15 studies reviewed contained one or more serious methodological flaws which not only make replication difficult or impossible, but also suggest serious question as to the ethics of implementing this most restrictive procedure with behaviorally disordered children and youth in the schools without valid and reliable evidence of its efficacy. The remaining 5 of the 15 studies have some methodological or procedural shortcomings which limit the degree of generalization that can be made from their findings.

The two most serious methodological flaws in these 10 studies are failure to provide return to baseline or reversal data and failure to report reliability data relative to the dependent measures. Studies which failed to report reversal data include Reichle, Brubakken, and Tetreault (1976), Sloane, Johnstone, and Bijou (1967), Streedbeck and Pommer (1974), and Webster (1976), as well as 1 of the 3 studies reported by Sachs (1973), and the 2 studies reported by Smith (1981). Without reversal data, behavioral change cannot conclusively be attributed to the seclusion time-out contingency.

While maladaptive behaviors decreased in each of the seven studies during the intervention phase, only through reversal would it have been possible to attribute these decreases to seclusion time-out and not to changes in teacher attending behaviors, changes in peer reactions to maladaptive behaviors, or any of a number of other uncontrolled variables accompanying the time-out contingency.

Seven studies either failed to report reliability data or reported inadequate reliability data on the dependent measures.

Two of the studies reported by Sachs (1973), the two studies reported by Smith (1981) with behaviorally disordered children, the Streedbeck and Pommer (1974) study, and the Webster (1976) study did not include the collection of interobserver reliability data. Ramp, Ulrich, and Dulaney (1971) reported a one-shot post hoc measure of reliability. In each of these seven studies the dependent measures were either relatively high frequency behaviors or were

broad enough in scope to be open to subjective interpretation on the part of the observer.

Sachs (1973) reported two cases involving seclusion time-out. In the first time-out was contingent upon the self-stimulatory behavior of a 13-year-old emotionally disturbed boy, while in the second the uncooperative behavior of a 5-year-old emotionally disturbed boy resulted in time-out. Self-stimulation, in the first case, was defined as spinning, handwaving, and gutteral sounds. This high frequency, multiple response definition would make accurate, consistent behavioral observation and recording difficult. Without reliability data relative to the response definition, it is difficult to determine whether the data collected in this case were truly representative of the student's behavior. The uncooperative behavior of the 5-year-old student in the second case was defined as failure to obey three commands in a row. Compliance and noncompliance were completely based upon the teacher's subjective interpretation. Again, without reliability data it is impossible to determine whether the teacher's observations of the student's behaviors represented his actual behavior throughout the study.

Similarly, the two studies reported by Smith (1981) with emotionally disturbed children contained unreliable definitions of such high frequency self-injurious behavior as screaming, face slappng, and head banging. This, in addition to the fact that baseline rates of these behaviors were over 1,000 instances a day, make any interpretation of the efficacy of seclusion time-out in this study impossible due to lack of reliability data. Likewise, without having a standardized definition of the intensity or duration of the screaming behaviors in the second case, it would be difficult to determine whether the teacher and the aide consequated the same class of behaviors with seclusion time-out.

The observer in the Streedbeck and Pommer (1974) study collected duration data on the percentage of out-of-seat behavior the child emitted during structured and unstructured classroom activities. The subjective nature of determining whether classroom activities were structured or not and whether the student was in or out of his/her seat during these different types of activities seriously limits the reliability of the data.

Webster (1976) defined aggression as throwing objects, hitting others with hands or objects, kicking, biting, and pushing. Again, no data were reported supporting the reliability of these high frequency, multiple response definitions. This flaw, coupled with the previously noted failure to collect reversal data, makes any conclusions drawn from the Webster (1976) study speculative at best.

The observers in the Ramp et al., (1971) study collected 10-second interval recording data over a 15-minute period daily. They reported a one-time reliability check at the end of the study relative to out-of-seat and talking out behaviors. Although reliability was .99, it is difficult to ascertain whether observations would have been similarly reliable at all stages of the study.

Of the five studies which reported both reversal and reliability data, four (Drabman & Spitalnik, 1973; Sachs, 1973; Spencer & Gray, 1973; Wahler, 1969) failed to report any followup data, and Lahey, McNees, and McNees (1973) only provided followup data at the end of four weeks. These five studies, in addition to eight of the other ten seclusion time-out studies reviewed, failed to report repeated, long-term, and objective followup data. The lack of adequate followup data in these studies makes it difficult to determine the long-term effects of seclusion time-out.

Of the four studies reporting long-term data, Smith (1981), Streedbeck and Pommer (1974), and Webster (1976), as noted earlier, failed to collect either reversal or reliability data; and Reichle et al. (1976) did not collect reversal data, which seriously limits the reliability and validity of their subsequent followup data.

A procedural limitation of 9 of the 15 seclusion time-out studies is the apparent lack of systematic effort to enrich the students' time-in setting to enhance the effectiveness of the time-out contingency. Of the 6 studies which provided enriched time-in, Reichle et al. (1976), Sachs (1973), Sloane et al. (1967), and Wahler (1969) employed social reinforcement for behaviors incompatible with the maladaptive behaviors which resulted in time-out. Mattos, Mattson, Walker, and Buckley (1969) provided token reinforcement and Streedbeck and Pommer (1974) provided edible reinforcers for incompatible behaviors.

Another procedural limitation in 4 of the 15 seclusion time-out studies is the failure to set fixed, consistent, short-term time-out durations. The Webster (1976) study and the 2 Smith (1981, in press) studies used indefinite time-out period. The acting-out student in the Webster (1976) study was sent to time-out for the remainder of the class period in which he/she acted out, while the autistic students in the Smith (1981) studies were asked to come out of time-out every minute until they chose to come out in the first case and were free to return to time-in at any time they wanted in the second case. The disruptive child in the Streedbeck and Pommer (1974) study was sent to time-out for every third instance of out-of-seat behavior.

Finally, the Smith (1981) study of an autistic 10-year-old boy was also limited by the lack of baseline data, making comparison of the time-out intervention with past levels of screaming behaviors impossible. In addition, Smith (1981) reported the results of this case in terms of the decrease in the number of time-outs (the independent variable)and not as a decrease in the number of screams (the dependent variable). Thus, any change may have been in the number of teacher behaviors (e.g., placing the student in time-out) and not in the number of child behaviors (e.g., screams).

None of the 15 seclusion time-out studies met all of the experimental criteria for adequate analysis of the effects of this intervention procedure — 7 studies failed to collect reversal data, 6 studies failed to provide reliability data, and 12 studies failed to collect objective, repeated, and long-term followup data. This lack of appropriately controlled research relative to this most restrictive and controversial of intervention techniques is ethically and scientifically unfortunate.

CONCLUSION

Much of the research on the use of time-out with behaviorally disordered children and youth in classroom settings fails to meet the experimental and procedural criteria for adequate analysis of time-out. As can be seen in Table 7, only one of the 40 studies in this review (Porterfield, et al., 1976) met all five experimental and procedural criteria for effective time-out. Only two other studies (Miller & Kratchowill, 1979; Wasik et al., 1969) met all three experimental criteria, while only 15 of the 40 studies met the two procedural criteria analyzed.

TABLE 7

Summary of Experimental and Procedural Criteria in Forty Time-Out Studies

+ = Present
- = Absent

Studies		EXPERIMENTAL CRITERIA: Research Design	EXPERIMENTAL CRITERIA: Reliability Data	PROCEDURAL CRITERIA: Long-Term Follow-Up Data	PROCEDURAL CRITERIA: Objective, Repeated, Enriched Time-In	PROCEDURAL CRITERIA: Fixed, Consistent, Short-Term Time-Out Duration
Planned Ignoring						
Wasik et al.	(1969)	+	+	+	-	+
Sibley et al.	(1969)	+	+	-	-	+
Pierce	(1971)	-	-	-	-	-
Pinkston et al	(1973)	+	+	-	-	+
MacArthur & Hawkins	(1974)	+	+	-	+	+
Plummer et al.	(1977)					
	(a)	+	+	-	+	+
	(b)	+	+	-	+	+
Scott	(1977)	+	-	-	-	+
Miller & Kratochwill	(1979)	+	+	+	-	-
Harris & Wolchik	(1979)					
	(a)	+	+	-	+	-
	(b)	+	+	-	+	-
	(c)	+	+	-	+	-
	(d)	+	+	-	+	-
Planned Ignoring & Restraint						
Carlson et al.	(1968)	-	-	-	-	+
Luiselli et al.	(1976)	+	+	-	+	+
Solnick et al.	(1977)	+	+	-	+	+
Noll & Simpson	(1979)	+	+	-	+	+
Contingent Observation						
Baer et al.	(1973)	+	+	-	+	+
Porterfield et al.	(1976)	+	+	+	+	+
Tyroler & Lahey	(1980)	+	+	-	+	+
Reduction of Response Maintenance Stimuli						
Kubany et al.	(1971)	+	+	-	+	+
Devine & Tomlinson	(1976)	+	+	-	-	+
Exclusion						
Briskin & Gardner	(1968)	+	+	-	+	+
Firestone	(1976)	-	+	-	+	-
Pease & Tyler	(1979)	+	-	-	+	-
Seclusion						
Sloane et al.	(1967)	-	+	-	+	+
Mattos et al.	(1969)	+	+	-	+	+
Wahler	(1969)	+	+	-	+	+
Ramp et al.	(1971)	+	+	-	+	-
Drabman & Spitalnik	(1973)	+	+	-	+	-
Lahey et al.	(1973)	+	+	-	+	-
Sachs	(1973)					
	(a)	+	+	-	+	-
	(b)	+	-	-	+	-
	(c)	-	-	-	+	+
Spencer & Gray	(1973)	+	+	-	+	-
Streedbeck & Pommer	(1979)	-	-	+	-	+
Reichle et al.	(1976)	-	+	+	+	+
Webster	(1976)	-	-	-	-	+
Smith	(1981)					
	(a)	-	-	-	-	+
	(b)	-	-	+	-	+

On the basis of this review, it would appear that, while response contingent time-out from planned ignoring to seclusion may be a valuable behavioral intervention procedure in particular classroom settings, there is strong need for further controlled research on this procedure which focuses on providing: (a) adequate reliability data relative to the dependent behaviors in question; (b) systematic collection of reversal and reinstatement data; (c) objective, repeated, and long-term followup data; (d) appropriate procedures which control for the effects of enriched time-in; and (e) fixed, consistent, and relatively short durations of the time-out period. Systematic, tightly controlled, applied analysis of response contingent time-out will contribute significantly to confidence in this procedure as a viable intervention with behaviorally disordered students in the classroom.

REFERENCES

Allison, T. S., & Allison, S. L. Time-out from reinforcement: Effect on sibling aggression. *Psychological Record*, 1971, *21*, 81-86.

Baer, D. M. Laboratory control of thumb sucking by withdrawal and representation of reinforcement. *Journal of the Experimental Analysis of Behavior*, 1962, *5*, 525-528.

Baer, A. M., Rowbury, T., & Baer, D. M. The development of instructional control over classroom activities of deviant preschool children. *Journal of Applied Behavior Analysis*, 1973, *6*, 289-298.

Barton, E. S., Guess, D., Garcia, E., & Baer, D. M. Improvements of retardates' mealtime behaviors by time-out using multiple baseline techniques. *Journal of Applied Behavior Analysis*, 1970, *3*, 77-84.

Bean, A. W., & Roberts, M. W. The effect of time-out release contingencies on changes in child noncompliance. *Journal of Abnormal Child Psychology*, 1981, *9*, 95-105.

Bostow, D. E., & Bailey, J. B. Modification of severe disruptive and aggressive behavior using brief time-out and reinforcement procedures. *Journal of Applied Behavior Analysis*, 1969, *2*, 31-37.

Briskin, A. S., & Gardner, W. I. Social reinforcement in reducing inappropriate behavior. *Young Children*, 1968, *24*, 84-89.

Brown, E. R., & Shields, E. Results of systematic suspension: A guidance technique to help children develop self-control in public school classrooms. *Journal of Special Education*, 1967, *1*, 425-437.

Burchard, J., & Tyler, V. O. The modification of delinquent behavior through operant conditioning. *Behavior Research and Therapy*, 1965, *2*, 245-250.

Calhoun, K. S., & Lima, P. P. Effects of varying schedules of time-out on high and low-rate behaviors. *Journal of Behavior Theory and Experimental Psychiatry*, 1977, *8*, 189-194.

Carlson, C. S., Arnold, C. R., Becker W. C., & Madsen, C. H. The elimination of tantrum behavior of a child in an elementary classroom. *Behavior Research and Therapy*, 1968 *6*, 117-119.

Cayner, J. J., & Kiland, J. R. Use of time-out with three scizophrenic patients. *Journal of Behavior Therapy and Experimental Psychiatry*. 1974, *5*, 141-145.

Clark, H. B., Rowbury, T., Baer, A. M., & Baer, D. M. Time-out as a punishing stimulus in continuous and intermittent schedules. *Journal of Applied Behavior Analysis*, 1973, *6*, 443-455.

Davis, J. R., Wallace, C. J., Liberman, R. P., & Finch, B. E. The use of isolation to suppress hallucinatory speech. *Journal of Behavior Therapy and Experimental Psychiatry*, 1976, *7*, 269-275.

Devine, V. T., & Tomlinson, J. R. The "workclock": An alternative to token economies in the management of classroom behaviors. *Psychology in the Schools*, 1976, *13*, 163-170.

Doleys, D. M., Wells, K. C., Hobbs, S. A., Roberts M. W., & Cartelli, L. M. The effects of social punishment on noncompliance: A comparison with time-out and positive practice. *Journal of Applied Behavior Analysis*, 1976, *9*, 471-482.

Drabman, R. S., & Spitalnik, R. Social isolation as a punishment procedure: A controlled study. *Journal of Experimental Child Psychology*, 1973, *16*, 236-249.

Duker, P. Intra-subject controlled time-out (social isolation) in the modification of self-injurious behavior. *Journal of Mental Deficiency Research*, 1975, *19*, 107-112.

Finch, B. E., Wallace, C. J., & Davis, J. R. Behavioral observations before, during, and after brief isolation (time-out). *Journal of Nervous and Mental Disease*, 1976, *163*, 408-413.

Firestone, P. The effects and side effects of time-out on an aggressive nursery school child. *Journal of Behavior Therapy and Experimental Psychiatry*, 1976, *6*, 79-81.

Forehand, R., Roberts, M. W., Doleys, D. M., Hobbs, S. A., & Resick, P. A. An examination of disciplinary procedures with children. *Journal of Experimental Child Psychology*, 1976, *21*, 109-120.

Foxx, R. M., & Shapiro, S. T. The time-out ribbon: A non-exclusionary time-out procedure. *Journal of Applied Behavior Analysis*, 1978, *11*, 125-136.

Freeman, B. J., Somerset, T., & Ritvo, E. R. Effect of duration of time-out in suppressing disruptive behavior of a severely autistic child. *Psychological Reports*, 1976, *38*, 124-126.

Gast, D. L., & Nelson, C. M. Time-out in the classroom: Implications for special education. *Exceptional Children*, 1977, *43*, 461-464. (a)

Gast, D. L., & Nelson, C. M. Legal and ethical considerations for the use of time-out in special education settings. *Journal of Special Education*, 1977, *11*, 457-467. (b)

Gresham, F. Comparison of response cost and time-out in a special education setting. *Journal of Special Education*, 1979, *13*, 199-208.

Hanley, E. M., Perelman, P. F., & Homan, C. I. Parental management of a child's self-stimulatory behavior through time-out and DRO. *Education and Treatment of Children*, 1979, *2*, 305-310.

Harris, S. L., & Wolchik, S. A. Suppression of self-stimulation: Three alternative strategies. *Journal of Applied Behavior Analysis*, 1979, *12*, 185-198.

Hawkins, R. P., Peterson, R. F., Schweid, E., & Bijou, S. W. Behavior therapy in the home: Amelioration of problem parent-child relations with the parent in the therapeutic role. *Journal of Experimental Child Psychology*, 1966, *4*, 99-107.

Henricksen, K., & Doughty, R. Decelerating undesired mealtime behavior in a group of profoundly retarded boys. *American Journal of Mental Deficiency*, 1967, *72*, 40-44.

Husted, J. R., Hall, P., & Agin, B. The effectiveness of time-out in reducing maladaptive behavior of autistic and retarded children. *Journal of Psychology*, 1971, *79*, 189-196.

Johnson, M. R., Whitman, T. L., & Barloon-Noble, R. A home-based program for a preschool behaviorally disturbed child with parents as therapists. *Journal of Behavior Therapy and Experimental Psychiatry*, 1978, *9*, 65-70.

Keirsey, D. W. Systematic exclusion: Eliminating chronic classroom disruptions. In J. D. Krumboltz & C. E. Thorensen (Eds.) *Behavioral counseling: Cases and techniques*. New York: Holt, Rinehart & Winston, 1969.

Kubany, E. S., Weiss, L. E., & Sloggett, B. B. The good behavior clock: A reinforcement/time-out procedure for reducing disruptive classroom behavior. *Journal of Behavior Therapy and Experimental Psychiatry*, 1971, *2*, 173-179.

Lahey, B. B., McNees, M. P., & McNees, M. C. Control of an obscene "verbal tic" through time-out in an elementary school classroom. *Journal of Applied Behavior Analysis*, 1973, *6*, 101-104.

Leitenberg, H. Is time-out from positive reinforcement an aversive event? *Psychological Bulletin*, 1965, *64*, 428-441.

Long, N. J., & Newman, R. G. Managing surface behavior of children in school. In N. J. Long, W. C. Morse, & R. G. Newman (Eds.), *Conflict in the classroom*. Belmont, Calif.: Wadsworth, 1965.

Luiselli, J. K. Controlling distruptive behaviors of an autistic child: Parent-mediated contingency management in the home settings. *Education and Treatment of Children*, 1980, *3*, 195-204.

Luiselli, J. K., Reisman, J., Helfen, C. S, & Pemberton, B. W. Control of self-stimulatory behavior of an autistic child through brief physical restraint. *School Applications of Learning Theory*, 1976, *9*, 3-13

MacArthur, M., & Hawkins, R. P. The modification of several classroom behaviors of an emotionally disturbed child in a regular classroom. In R. Ulrich, T. Stachnik, & J. Mabry (Eds.), *Control of human behavior: Behavior modification in education, (Vol. 3)*. Glenview, Ill.: Scott, Foresman, 1974.

Mansdorf, I. J. Reinforcer isolation: An alternative to subject isolation in time-out from positive reinforcement. *Journal of Behavior Therapy and Experimental Psychiatry*, 1977, *8*, 391-393.

Matson, J. L., Ollendick, T. H., & DiLorenzo, T. M. Time-out and the characteristic of mentally retarded institutionalized adults who do and do not receive it. *Mental Retardation*, 1980, *18*, 181-184.

Mattos, R. L., Mattson, R. H., Walker, H. M., & Buckley, N. K. Reinforcement and aversive control in the modification of behavior. *Academic Therapy*, 1969, *5*, 37-52.

Miles, C. L., & Cuvo, A. J. Modification of the disruptive and productive classroom behavior of a severely retarded child: A comparison of two procedures. *Education and Treatment of Children*, 1980, *3*, 113-121.

Miller, A. J., & Kratochwill, T. R. Reduction of frequent stomachache complaints by time-out. *Behavior Therapy*, 1979, *10*, 211-218.

Morales v. Turman, 383 F. Supp. 53, E. D. Tex. (1974).

Murphy, R. J., Ruprecht, M., Nunes, D. L. Elimination of self-injurious behavior in a profoundly retarded adolescent using intermittent time-out, restraint, and blindfold procedures. *AAESPH Review, 1979, 4*, 334-335.

Noll, M. B., & Simpson, R. L. The effects of physical time-out on the aggressive behaviors of a severely emotionally disturbed child in a public school setting. *AAESPH Review*, 1979, *4*, 399-406.

Patterson, R. L. Time-out and assertive training for a dependent child. *Behavior Therapy*, 1972, *3*, 466-468.

Pease, G. A., & Tyler, V. O. Self-regulation of time-out duration in the modification of disruptive classroom behavior. *Psychology in the Schools*, 1979, *16*, 101-105.

Pierce, M. L. A behavior modification approach to facilitating a disturbed child's school re-entry by teaching time-out procedures to the child's classmates. *School Applications of Learning Theory*, 1971, *2*, 1-6.

Pinkston, E. M., Reese, N. M., LeBlanc, J. M., & Baer, D. M. Independent control of a preschool child's aggression and peer interaction by contingent teacher attention. *Journal of Applied Behavior Analysis*, 1973, *6*, 115-124.

Plummer, S., Baer, D. M., & LeBlanc, J. M. Functional considerations in the use of procedural time-out and an effective alternative. *Journal of Applied Behavior Analysis*. 1977, *10*, 689-705.

Polsgrove, L. Return to baseline: Some comments on Smith's reinterpretation of seclusion time-out. *Behavioral Disorders*, in press.

Porterfield, J. K. Herbert-Jackson, E., & Risley, T. R. Contingent observation: An effective and acceptable procedure for reducing disruptive behavior of young children in a group setting. *Journal of Applied Behavior Analysis*, 1976, *9*, 55-64.

Ramp, E., Ulrich, R., & Dulaney, S. Delayed time-out as a procedure for reducing disruptive classroom behavior: A case study. *Journal of Applied Behavior Analysis*, 1971, *4*, 235-239.

Reichle, J., Brubakken, D., & Tetreault, G. Eliminating perserverative speech by positive reinforcement and time-out in a psychotic child. *Journal of Behavior Therapy and Experimental Psychiatry*, 1976, *7*, 179-183.

Rutherford, R. B. Theory and research on the use of aversive procedures in the education of moderately behaviorally disordered and emotionally disturbed children and youth. In F. H. Wood & K. C. Lakin (Eds.) *Punishment and aversive stimulation in special education.* Reston, Va.: Council for Exceptional Children, 1982.

Rutherford, R. B., & Neel, R. S. The role of punishment with behaviorally disordered children. In R. B. Rutherford & A. G. Prieto (Eds.), *Severe behavior disorders of children and youth.* Reston, Va: Council for Children with Behavioral Disorders, 1978.

Sachs, D. A. The efficacy of time-out procedures in a variety of behavior problems. *Journal of Behavior Therapy and Experimental Psychiatry*, 1973, *4*, 237-242.

Sajwaj, T., Twardosz, S., & Burke, M. Side effects of extinction procedures in a remedial classroom. *Journal of Applied Behavioral Analysis*, 1972, *5*, 163-175.

Scarboro, M. E., & Forehand, R. Effects of two types of response-contingent time-out on compliance and oppositional behavior of children. *Journal of Experimental Child Psychology*, 1977, *19*, 252-264.

Scott, E. A. Treatment of encopresis in a classroom setting: A case study. *British Journal of Educational Psychology*, 1977, *47*, 199-202.

Shier, D. A. Applying systematic exclusion to a case of bizarre behavior. In J. D. Krumboltz & C. E. Thoresen (Eds.), *Behavioral counseling: Cases and techniques.* New York: Holt, Rinehart & Winston, 1969.

Sibley, S. A., Abbott, M. S., & Cooper, B. P. Modification of the classroom behavior of a disadvantaged kindergarten boy by social reinforcement and isolation. *Journal of Experimental Child Psychology*, 1969, *7*, 203-219.

Sloane, H. N., Johnstone, M. K., & Bijou, S. W. Successive modification of aggressive behavior and aggressive fantasy play by management of contingencies. *Journal of Child Psychology and Psychiatry*, 1967, 8, 217-226.

Smith, D. E. P. Is isolation room time-out a punisher? *Behavioral Disorders*, 1981, *6*, 247-256.

Smith, D. E. P. Time-out as reduced environmental stimulation (RES): Reply to Polsgrove. *Behavioral Disorders*, in press.

Solnick, J. V., Rincover, A., & Peterson, C. R. Some determinants of the reinforcing and punishing effects of time-out. *Journal of Applied Behavior Analysis*, 1977, *10*, 415-424.

Spencer, R. J., & Gray, D. F. A time-out procedure for classroom behavioral change within the public school. *Child Study Journal*, 1973, *3*, 29-38.

Spitalnik, R., & Drabman, R. A classroom time-out procedure for retarded children. *Journal of Behavior Therapy and Experimental Psychiatry*, 1976, *7*, 17-21.

Streedbeck, D., & Pommer, D. The combination of positive reinforcement and time-out contingencies to control out-of-seat and accompanying disruptive behavior. *School Applications of Learning Theory*, 1974, *6*, 15-24.

Sulzer-Azaroff, B., & Mayer, G. R. *Applying behavior analysis procedures with children and youth*. New York: Holt, Rinehart & Winston, 1977.

Tyler, V. O., & Brown, G. D. The use of swift, brief isolation as a group control device for institutionalized delinquents. *Behavior Research and Therapy*, 1967, *5*, 1-9.

Tyroler, M. J., & Lahey, B. B. Effects of contingent observations on the disruptive behavior of a toddler in a group setting. *Child Care Quarterly*, 1980, *9*, 265-274.

Varni, J. W., Boyd, E. F., & Cataldo, M. F. Self-monitoring, external reinforcement, and time-out procedures in the control of high-rate tic behaviors in a hyperactive child. *Journal of Behavior Therapy and Experimental Psychiatry*, 1978, *9*, 353-358.

Wahler, R. G. Setting generality: Some specific and general effects of child behavior therapy. *Journal of Applied Behavior Analysis*, 1969, *2*, 239-246.

Wahler, R. G., & Fox, J. J. Solitary toy play and time out: A family treatment package for children with aggressive and oppositional behavior. *Journal of Applied Behavior Analysis*, 1980, *13*, 23-39.

Wasik, B. H., Senn, K., Welch, R. H., & Cooper, B. R. Behavior modification with culturally deprived school children: Two case studies. *Journal of Applied Behavior Analysis*, 1969, *2*, 181-194.

Webster, R. E. A time-out procedure in a public school setting. *Psychology in the Schools*, 1976, *13*, 72-76.

Whelan, R. F. The relevance of behavior modification procedures for teachers of emotionally disturbed children. In P. Knoblock (Ed.) *Intervention approaches in educating emotionally disturbed children*. Syracuse, N.Y.: Syracuse University Press, 1968.

Whelan, R. F., & Haring, N. G. Modification and maintenance of behavior through systematic application of consequences. *Exceptional Children*, 1966, *32*, 281-289.

White, G. D., Nielson, G., & Johnson, S. M. Time-out duration and the suppression of deviant behavior in children. *Journal of Applied Behavior Analysis*, 1972, *5*, 111-120.

Wolf, M. M., Risley, T. R., & Mees, H. I. Application of operant conditioning procedures to the behavior problems of an autistic child. *Behavior Research and Therapy*. 1964, *1*, 305-312.

Wyatt v. Stickney, 344 F. Supp. 387, M. D. Ala. (1972).

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