Presented is an annotated bibliography with approximately 250 entries relating to the severely and profoundly retarded. Citations are listed alphabetically by author under the following categories: assessments, measurements, evaluations; associations; attending behavior; behavior modification; books; classical conditioning; cognitive development; education; environmental design; inappropriate behaviors; institutionalization/community placement; language (expressive, general, imitation learning/receptive, and instruction following/receptive); miscellaneous (definition, prevalence, climate, psychotherapy); motor performance; music; parents; physical therapy/sensory stimulation; play time/activity; programs/program assessment; reference material (A-Z); research; self-help skills (dressing, feeding, general, teeth-brushing, and toileting); self-injurious behavior; socialization (A-Z); stereotypic behavior; vision (assessment, discrimination); vocational education/habilitation; vomiting. Information for each entry usually includes author, title, source, publication date, page number, and a brief summary. (SBH)
An Annotated Bibliography on the Severely and Profoundly Mentally Retarded

Compiled by

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and

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*Abstracts of the articles cited are in most cases those appearing with the article.*

"This paper focuses on the second but equally important criterion for the evaluation of the mentally retarded condition, viz., social adaptability. Furthermore going beyond assessment, the authors present a practical model for the specific remedial application of the personal-social findings with the Adaptive Behavior Checklist."


"A measure, toward the sum of Adjusted Behavior, was employed to count the types of social behavior severely and profoundly institutionalized retardates exhibit. Data pertaining to the relationship between the 'Sum of Adjusted Behavior' and CA to MA, age of institutionalization, gender, medical diagnosis, medication, and social behavior are discussed."


"Describes alterations made to produce a profound scale and a maladaptive scale. High competency levels of many items in the 1st half were dropped off and several entire items were deleted. All of them items were reworded to 'check as appropriate'. The latter portion was similarly modified but no items dropped. Tests of the modified scales are briefly discussed."


"Eighteen moderately retarded men (IQ range 30-55) were questioned to determine their understanding of pictures of homosexual embrace, masturbation, dating, marriage, intercourse, pregnancy, childbirth, drunkenness, and their knowledge of anatomical terminology." Results indicated: 1) In some cases the number of correct responses was as low as 2) the median for correct responses was 28%, and 3) only one individual correctly answered more than 50% of the questions. Correct responses were significantly correlated with WAIS Full Scale and Verbal IQs and the Adaptive Scale Domains of Socialization, Language, and Responsibility.


"Evaluated responsiveness to auditory stimulation in 15 severely retarded deaf-blind preschool children by measuring their operant choice between no sound at all and musical selections at 80dB SPL. A vibratory assist was employed for those Ss whose responses were inconclusive. This assistance proved to be crucial in helping some
of the Ss develop consistent listening response competence. Results obtained from testing with and without hearing aids led to speculations concerning the value of aids with some of the children.

Hamilton, T. L. and Budott, M. Learning potential among the moderately and severely mentally retarded. Mental Retardation, 1974, 12(4), 33-36.

"Investigated the feasibility of M. Budott and M. Friedman's learning potential paradigm as an assessment approach with moderately and severely retarded persons. Forty 12-22 year old institutionalized retardates were tested 3 times: initially, after 1 week, and after 1 month with a match-to-sample block design test. Twenty were randomly assigned to a 30 minute training session which occurred on the day prior to the 1st retest. Pretrained scores were positively correlated with Peabody Picture Vocabulary Test IQ. Improvement following training was not related to IQ, but was significantly related to 2 validity measures.


"Reliability and validity of Uzgiris and Hunt scales of sensomotor development were assessed with 63 severely and profoundly retarded children. It was found that: 1) scales were reliable and 2) ordinal suggested that scales could be used both reliably and validly with severely and profoundly retarded children."


"Administered two non-verbal tests in the Torrance Tests of Creative Thinking, Form B (Incomplete Figures and Circles Tests) to eight severely retarded individuals and to eight moderately retarded individuals. They found that: 1) moderately retarded demonstrated greater creative ability than the severely retarded on non-verbal creativity tests, and 2) the fluency trait was a better base measure of creativity than flexibility for both IQ groups.


"Administered Corvian and Escalona's Scales for Object Permanence and Spatial Relationships and Uzgiris and Hunt Scales to 64 severely and profoundly retarded children. When compared, both sets of scales found that: 1) scoring reliability was very high, 2) total scores did not vary as a function of subject characteristics or testing conditions, 3) differences in item difficulty was not significantly correlated with those reported for non-retarded infants, and 4) it took less time to administer the Uzgiris and Hunt Scales but Object Permanence showed a ceiling effect and the internal consistency of the Spatial Relationship was low."

In this study 45 mentally retarded individuals were screened for hearing acuity by behavioral responses to auditory environmental stimuli. The use of the described procedure proved to be a useful screening method with this population.


"Monthly testing on a series of Piaget object tasks was carried out on 1 to 6 year old profoundly, severely and moderately retarded children. Forty nine subjects were followed for 1 to 1.5 years or to criterion; 18 subjects were followed for shorter periods. Three general patterns occurred among the non-criterion subjects and approximately equal frequency: a) little or no change, b) marked variability, and c) relatively steady upward change from month to month."

ASSOCIATIONS


"Describes the development of the American Association for the Education of the Severely/Profoundly Handicapped (AAESPH), its goals, its focus on communication, and its future.


"Describes the committee for the study and care of the severely retarded (CESAP) which was created in 1966 to: a) organize services for the specialized care of Parisian children with IQ's of less than 50, and b) conduct information, research and teaching activities."

ATTENDING BEHAVIOR


"During training with an adult, two retarded children were presented three tasks, each associated with a different training regime (extinction, contingent or non-contingent reinforcement). The contingent task required discriminative properties, whereas other tasks did not. Control was maintained on familiar and unfamiliar settings and with novel adults. When tasks were presented in combination, subjects manipulated the contingent task. During choice probes the three tasks were presented simultaneously; the subjects chose the contingent and non-contingent tasks almost equally and never chose the extinction tasks. Results were replicated when reinforcement
contingencies assigned to tasks were changed."

Wright, J. E. Generalization from four methods for the training of attending with
Dissertation Abstracts International, 1972, 32, 6665B-6666B. (University 
Microfilms No. 72-15, 873)

BEHAVIOR MODIFICATION

Bateman, S. Application of Premack's generalization on reinforcement to modify occupu-
tional behavior in two severely retarded individuals. American Journal of 
Mental Deficiency, 1975, 79, 604-610.

"Successfully employed Premack's principle in an rehabilitation setting 
in order to increase the time two severely retarded adults spend working on less preferred activities."

Foster, S. E. Use of behavior modification techniques in behavior training of 
severely and profoundly retarded children. Slow Learning Child, 1974, 21(1), 
24-37.

"Discusses the techniques used by researchers to modify behavior prob-
lems of the severely and profoundly retarded. Unfortunately, it is 
punishment which seems to have had some measure of success when severe 
self-injurious behavior has been involved. Mild and moderate punish-
ment has been found ineffectual if there were no alternate responses 
which would produce reinforcement. Severe punishment suppressed a 
response totally and for a long time, inhibited other responses, and 
increased frequency of response if it produced reinforcement. Aggres-
sive behavior, including self-inflicted wounds, is dealt with by tech-
nological innovations, environmental alterations; and other means. 
Training methods sometimes used are said to be either too lenient or 
too cruel, but no one workable system has yet been established."

Gladstone, R. W. The development and generalization of behavior modification tech-
niques by high school students working with retarded children (Doctoral dissertation, University of Kansas, 1973). Dissertation Abstracts International, 1974, 34, 6237B-6238B. (University Microfilms No. 74-12, 560)

Hamilton, J. L. Application of the learning potential paradigm to severely mentally 
Microfilms No. 73-21, 426)

Kaprowy, E. A. Primary reinforcement, a token system, and attention criteria and 
feedback procedures with profoundly retarded in a verbal training classroom 
International, 1975, 36, 2498B. (Order Microfiche copy from National Library 
of Canada at Ottawa)

Karan, O. C. The effect of an experimenter controlled fixed ratio schedule of rein-
fforcement on the subsequent self-reinforced behaviors of mentally retarded ado-
lescents and adults (Doctoral dissertation, University of Wisconsin, 1974). 
Dissertation Abstracts International, 1974, 35, 3019B-3020B. (University 
Microfilms No. 74-19, 559)

"Three non-professional trained and paid undergraduates were used in a behavior modification program for a profoundly retarded 22 year old male whose parents, though they had reservations about behavior modification, agreed to it. The 4 target behaviors were dressing, undressing, toileting and cooperative play. Measures taken on these behaviors showed improvements during the course of the training and on tests conducted during a 1 year follow-up. Results are discussed in terms of the use and availability of undergraduates in such programs, the analysis of complex skills into component behaviors, and the positive reaction of the parents to the program."


"Explains how task analytic assessment can be used by classroom teachers and other community service agents to assess the level of functioning of severely retarded individuals."


"Behavioral effects of stimuli paired with reinforcement were investigated in a complex FI chain schedule with six mentally retarded Ss. The chain schedule permitted the assessment of increments in responding in the presence of an SD for briefly presented stimuli previously paired with candy reinforcement as well as changes in responding subsequent to stimulus presentation. Consistent response rate increases failed to emerge in the presence of the SD associated with stimuli paired with reinforcement. Responding for all Ss increased immediately subsequent to briefly presented paired stimuli. Results were consistent with an increased emotionality or frustration interpretation."


McNamee, S. and Peterson, J. Observed versus potential behavior in the follow-up results in a typical behavior modification program. *Catalog of Selected Documents in Psychology*, 1974 (Fall), 4, 131.

"A modification of Bryant's study of the transfer of positive and negative learning in severely subnormal subjects was attempted. A third condition, where neither positive nor negative learning could be transferred, was added. Fifty-two adult non-institutionalized SSN trainees demonstrated transfer in all three conditions. Transfer was greatest in the positive learning condition, intermediate in the negative learning condition and least in the non-specific learning condition. Two interpretations offered are: 1) a significant degree of transfer which cannot be attributed to specific approach-avoidance learnings, occurs with naive subjects, and 2) such general transfer effects are inevitably confounded with specific transfer effects in the traditional transfer experiment design."


"...studied punishment effects in a severely retarded girl under a multiple-concurrent design, using 6 different responses in 2 successive stimulus situations. Differential reinforcement of other behavior and fixed-internal reinforcement schedules were also used to evaluate interaction with punishment. Results show that many of the assumptions about punishment are unjustified and that its effects are complex and dependent on multiple variables."


"Describes the behavior modification programs used in educating a severely retarded 5 year old boy."


"This paper reviews the components of overcorrection, the rationale for its use, the two types of overcorrection training reported, the levels of instructional assistance, and some common misinterpretations. And it suggests extensions to the vocational and social development of the severely/profoundly handicapped."

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"Attempted to: 1) determine if manual guidance would be feasible with institutionalized mentally retarded children, and 2) compare its effectiveness with other standard learning procedures, i.e., modeling and trial and error. Two studies were conducted. The first study focused on the manipulation of a simple response, that is, reaching for a stimulus in a two-choice discrimination task; the second study involved a more complex response, grasping and using a stick as a tool in acquiring an object beyond normal reach. Results appear to demonstrate clearly that manual guidance and imitation learning techniques are effective means of teaching some kinds of behaviors to mentally retarded individuals."


"Male and female voices were used to determine preference for voice among profoundly retarded adult males. Ss were first exposed to a situation where button pressing resulted in either a 250- or a 2000-Hz tone and then to a situation in which a male and female voice was associated with each button. Statistically significant differential preference was not exhibited to either type of stimulus although the female voice did appear to be more effective."


"Observed 3 severely retarded adult inpatients when they were allowed to press a button for candy on various FR schedules of reinforcement. Results demonstrate that the size of the required fixed ratio was directly related to the length of the postreinforcement pause. However, fixed-ratio size had no effect on response rate when responding resumed following the postreinforcement pause."


BOOKS


Kent, L. R. Language acquisition program for the severely retarded. Champaign, Ill.: Research Press, 1974.


CLASSICAL CONDITIONING


"Trace and delay classical eyelid conditioning were compared in severely and profoundly retarded young adults at 5 interstimulus (ISIs) from 350 to 1400 MSEC. The trace CS had a duration of 50 MSEC and the delay CS terminated with the offset of the US. Trace and delay CSs were equally effective at 350 MSEC ISI, but at longer ISIs delay conditioning was superior to trace conditioning. Data previously collected using the same CS and ISI conditions with nonretarded subjects showed no trace-delay difference at any ISI tested. Comparisons between present and past data indicated a trace conditioning deficit for the retarded subjects at ISIs of 500 MSEC or more. Following conditioning some subjects were shifted from trace to delay CS conditions and vice versa. Results indicated that the trace CS was an effective stimulus."


"Employed trace and delay classical conditioning procedures to evaluate the effects of conditioned stimulus input recruitment and trace decay processes on the trace conditioning deficit of severely and profoundly retarded subjects. Found that subjects conditioned through trace procedures responded at a significantly lower level than subjects conditioned through delay procedures. Suggest that stimulus trace decay as opposed to input recruitment accounts for poor trace conditioning performances.

COGNITIVE DEVELOPMENT


"Studied 23, 17-52 year old severely subnormal (SSN) adults for their ability to reproduce and transpose matrices. SS could


transpose the matrices at an MA equivalent to the CA at which children normally do. Ability to reproduce the same matrices was not in evidence prior to the ability to transpose them, as in normal children. It is suggested that cognitive development in SSN is qualitatively different from that of normal children."


"Presents results of a study of differences in cognitive styles between normal and mentally deficient 9-14 year old children. Two groups of institutionalized SS, microencephalopithric and severely retarded were examined in depth with a wide variety of instruments. It was found that the Ss performed better than could be explained by neuropsychological operations according to genetic theory. There was also far more heterogeneity of cognitive styles than among normals, with no reliance on language. It is concluded that re-education should concentrate on the individual and his culture rather than trying to re-establish normal development."


"Replicated G. G. Gullop's study of self-recognition in Experiment I with 26 profoundly retarded, ambulatory male inpatients. Experiment II employed a criterion task, suggested by the psychoanalytic conception of primary narcissism, using an additional 20 Ss. Results of both studies indicate no unequivocal support that the profoundly retarded can recognize self and they appear less capable than chimpanzees or normal 7 month old human infants. Failure to install self-recognition subsequent to mirror training is discussed and suggestions for further research was offered."


"Studied developments in cognitive processes in the early preschool years by observing the actions that young children perform upon objects, while relating them by a special relation or attribute. Matchings tasks and material for spontaneous handling were given to 23 severely subnormal children and to 31, 19-42 month old. It is suggested that one aspect of early cognitive development is increasing selectively in sequences of matching actions."

EDUCATION


"Guidelines are presented on the following topics: 1) aims, 2) objectives, 3) awareness training, 4) motor training for the cerebral palsied, 5) stages of walking, 6) use of behavior modification, 7) ocular motor training, 8) rhythm therapy, 9) swimming training, and 10) swimming for multiply involved physically handicapped."

"Describes the use of varied teacher tutorial programs for teaching verbal and non-verbal skills to severely retarded children."


"With the trend toward an increasing percentage of severely and profoundly retarded individuals in residential institutions for the mentally retarded, the role of the educator in regard to programming, for these residents needs examination. This editorial attempts to consider some of the problems involved in this area, their possible causes, and recommendations for correction."


"This article is intended to acquaint teachers and educators with the training methodology used over the last decade in residential and other non-school settings with profoundly retarded persons. Problems unique to the profoundly retarded and suggested areas for program emphasis are presented to provide a frame of reference for future curriculum development."


"Notes that education of mentally retarded children has moved progressively from health care and training orientation to an educational enterprise. Feels have ended up with a watered down curriculum for these individuals. So developed a curriculum with 5 levels of teacher planning (level of philosophy, curriculum, syllabus, work program and lesson plans)."

"Presents the rationale for providing services for the severely and profoundly mentally retarded school age child. Recent research on the education of the trainable mentally retarded and the educable mentally retarded is reviewed. It is suggested that the public school can become more democratic in its organization and in its integration of the retarded when a broader range of the retarded is included."


"A system (TARC) was presented which would enable educators of the severely and profoundly retarded to develop a curriculum from instructional objectives based upon a behavioral assessment technique. The system consists of the following stages: 1) TARC Assessment Inventory (to assess self-help, motor, communication and social skills), 2) TARC Profile (gives a graphic picture of individual strengths and weakness), 3) TARC Instructional Objectives (rank orders skills, skills with highest rank are priority items in terms of ed. programming), and 4) TARC Curriculum Selection (makes available a listing of all known available canned programs)."


"Two severely retarded Down's Syndrome boys were first taught to match printed words to each other and to match dictated words to their corresponding pictures, but were still incapable of matching the printed words to their pictures or of reading the printed words orally. They were next taught to match the dictated to the printed words and were then able to read the words orally and with comprehension. The learned equivalences of dictated words to pictures and to printed words transferred to the purely visual equivalence of printed words to pictures. The success of the mediated-transfer paradigm suggests that inability to achieve crossmodal transfer of stimulus equivalences is not necessarily the cause of reading deficiency in severe retardation and provides a technique for introducing reading to severely retarded children."


"States as a premise the need for innovation in special education. Suggestions offered include use of epidemiologic as well as
psychometric models of retardation, and the value of basic studies of the ecology of early mental growth. Original data are presented on retarded mental development, and two conceptual schemas are offered, the first for the integration of research, service and planning, the second for the development of instructional significance in developmental data."


"Argues for the need for special classes for severely and profoundly retarded children. The limitations of existing regular classes and the creation of resource rooms as substitutes for special education programs are discussed, and the need for trained personnel and lifelong planning for these children in emphasized."

Soule, D. Teacher bias effects with severely retarded children. American Journal of Mental Deficiency, 1972, 77, 208-211.

"This study was designed to examine the effect of experimentally induced teacher bias, or expectancy, on the subsequent behavior of institutionalized severely retarded children when the bias effects were a result of optimistic psychological reports to cottage parents. No effects of teacher bias were found."


"Authors suggest that some erotic areas in which future teachers of severely and profoundly retarded children must have a thorough knowledge of are: 1) diagnostic evaluation, 2) curriculum, 3) methodology, 4) interdisciplinary team work, 5) field work, 6) parent training, and 7) prosthetic aids and that it is the responsibility of universities to provide such knowledge in order to prepare competent teachers."


"This article examined some of the primary instructional methods needed to effectively enhance the growth and development of the profoundly handicapped. Primary methods discussed included: 1) the relaxation of the child before initiating training, 2) positioning of the child, 3) active involvement of the child, and 4) language stimulation."

"Studied use of reinforcement to improve counting behavior of a male retardate 19 years old. Thirty sessions of 30 minutes each were conducted for pointing and counting from 1 through 5. Phases of the experiment were baseline, experimental, baseline, and reinstatement. Social reinforcement consisted of praise, putting on the shoulders and kicking under the table. Results suggest a combination of motivational and learning phenomena. Accuracy of counting increased."


"Several basic components of instructional programs for severely handicapped students were delineated and described." Basic components described were: 1) What skill is to be taught?, 2) Why?, 3) How will it be taught?, 4) How will teacher empirically verify it has been taught?, 5) Can student perform skill at a situationally acceptable rate?, 6) What variables will be necessary to teach skill?, 7) Will performance skill generalize? and 8) Can student perform in absence of directions from an authority figure?

ENVIRONMENTAL DESIGN


"Stresses the therapeutic importance of the design and environment on inpatient units for the mentally retarded. A checklist of 39 desirable features relating to physical characteristics and routine ward practices is presented for wards of no more than 20 ambulatory inpatients. Explanations and practical suggestions for implementation of improvements are included. Three levels of managerial decision-making on such units are discussed."


"Critically appraises results of an exercise in which 3rd year architecture students redesigned a living unit for mentally handicapped Ss to create a homelike, noninstitutional environment. The design aspects of 6 floor plans are evaluated with regard to the Ss' special needs."


"Predictions regarding the effects of altering the nature and amount of individual sleeping space available to profoundly retarded adult males were derived from theoretical theory and previous research on territorial defense and scent-marking. There was a marked decrease in nocturnal enuresis and encopresis following territorial expansion, with a further decrease after demarcation of the individual areas by visual boundaries."

"A simple and inexpensive environmental design system utilizing wall and floor cues is proposed to decrease fear of the environment and to promote movement, independence, and social interaction among blind severely and profoundly retarded persons."

Murphy, M. J. and Zahm, D. Effects of improved ward conditions and behavioral treatment of self-help skills. Mental Retardation, 1975, 13(6), 24-27.

"Studied 3 groups (N=3) of institutionalized severely and profoundly retarded males (mean CA, 9-14.5 years) to determine the effects of enhancement of the physical and social environment and behavior modification training upon acquisition of self-help skills. Two groups were placed on renovated modular living units with a resident-to-staff ratio 6 to 1.5. One of these groups also received behavior modification training. The control group remained on a dayroom-dormitory ward with a resident-to-staff ratio of 30 to 1. Self-help skills were assessed before and after a 10 week period. Profoundly and severely retarded Ss showed significant increases in self-help skills after behavior modification training. Ss exposed to improved environment and staffing conditions did not change more than controls."


"Assessed 21, 17-38 year old severely subnormal male patients (IQ 30, MA 2 years) on a hospital ward to develop a more enriched environment. Piagetian techniques for analyzing the sensorimotor period were applied and a program of activities instituted. Follow-up assessment 7 months later showed that 14 Ss had reached Stage 6 of Object Permanence, Piaget's stage at which language begins to develop. It is concluded that a more stimulating environment can help mentally subnormals realize more potential, possibly even helping to reach the stage of language if begun early."

INAPPROPRIATE BEHAVIORS


"Used a phase timeout procedure to treat a nonverbal 14 year old severely retarded, ambulatory male, who had a lengthy history of pica. Results indicate that after 9 months treatment, S's pica had been contained to a significant degree."


"To deal with the problem of stealing, an overcorrection procedure was designed in which the thief was required to give his victim an identical item to the stolen one in addition to returning the stolen one."
This procedure was compared to a restitution (simply returns item) procedure. Under a restitution procedure an average of 20 thefts per day had been occurring among 34 retarded residents of an institution. The overcorrection procedure reduced the thefts by 50% on the first day, 75% on the 2nd day, and eliminated thefts by the 4th day, after which no further stealing occurred.


"Reports that applying a shot of aerosol shaving cream into the mouth of a profoundly retarded girl effectively reduced tantrum screaming behaviors. Advantages of this method of aversive control are briefly discussed."


"Describes a beh mod program used to change the classroom disruptive behavior of 3 retarded children by allowing one of them, a 14 year old boy, to serve as a 'helper' and distribute candy reinforcers for good behavior. Appropriate behavior by him and the 2 other children improved through this program.


"Examined the generalization effects of response-contingent time out on the behavior of a severely retarded 8 year old female. Significant decreases in the frequency of all undesirable behaviors measured were found."


"An procedure was developed that provided disruptive offenders with re-education, removal of the reinforcement for the offense, time-out from general positive reinforcement, and an effort requirement. The offender was required by instructions or physical guidance to over-correct the general psychological and physical disturbance created by the offense. The procedure was applied to one brain-damaged and two retarded patients, who displayed one or more of the following types of behavior: physical assault, property destruction, tantrums, continuous screaming and biting, all of which had resisted other treatments. This procedure reduced the disturbed behaviors of all patients to a near zero level with 1 or 2 exceptions and maintained this therapeutic effect with minimal staff attention."


"Reports that exhibitionism was successfully treated in a 52 year old male by applying differential social reinforcement for other behavior."

"When the opportunity to engage in a more preferred activity (lying in a bed and listening to the radio) was made contingent upon spending the appropriate amount of time in a less preferred activity (attending school classes), the amount of time spend in the low preference behavior increased significantly."


"Brief isolation from a group situation was found to suppress persistent, high-rate misbehavior in two extremely withdrawn children, even though no positive reinforcement for other behaviors was systematically administered. Changes in a variety of behaviors including looking, touching, speaking, responding and other non-punished misbehaviors, were observed when timeout was administered contingent on only misbehavior of each child.

Salzberg, B. and Napolitan, J. Holding a retarded boy at a table for 2 minutes to reduce inappropriate object contact. *American Journal of Mental Deficiency, 1974, 78*, 748-751.

"Held a profoundly retarded boy at a table for 2 minutes contingent upon door playing and staring out window behaviors. This procedure produced a marked reduction in these behaviors."


"Institutionalized hyperactive residents were compared to nonhyperactive retarded residents. Four variables were found (disrupts activities, stereotyped behavior, removes/tears clothes and receives tranquilizers) significantly discriminated members of the two groups and that hyperactivity occurred more often in males and as ability level decreased.


"Described application of behavioral management interventions to deal with unacceptable behaviors of retardates enrolled in a day care
center. Results indicated that appropriate individual interventions can be effective when applied in a group setting.

INSTITUTIONALIZATION/COMMUNITY PLACEMENT


"Examines some of the anti-institution and pro-normalization statements as they pertain to rehabilitating severe and profound retardates. A 'homestyle' community residence for rehabilitating former severe and profound retardates is described and compared to foster home placement. Although institutions have been under heavy attack, it is suggested that they might survive in a desirable way for many years if a new role in partnership with community rehabilitation programs is adopted."


"Discusses the development of institutionalized care in the US for the mentally retarded and offers 10 cautions regarding the training and education of the severely and profoundly retarded."

LANGUAGE (EXPRESSIVE)


"Procedures of differential reinforcement and imitation were used to teach severely retarded children to convert verbs to nouns by adding the (er) morpheme. Training continued until the subjects required a minimum number of trials to reach criterion for each verb presented, at which point they consistently produced the correct response on the first presentation of each new verb. Experimental control of the training procedures was demonstrated by teaching the grammatical misuse of the (1st) morpheme, rather than the (er) morpheme, when labeling verbs."


"A small group of severely subnormal female patients was conditioned with reinforcement procedures to interact verbally. A reversal designed showed the effect of reinforcement on the dependent variable and allowed comparison between the effect of candy and token reinforcement. Candy was demonstrated to increase social speech on slightly above baseline level; tokens increased it approximately 30% and reduced the amount of response variability."

Barton, E. S. Operant conditioning of appropriate and inappropriate social speech in the profoundly retarded. Journal of Mental Deficiency Research, 1973, 17(3-4), 183-191.
"Conditioned 3 profoundly retarded females to speak to each other when isolated in a bare room, using token reinforcement. Inappropriate verbalization and appropriate speech were each conditioned in a reversal design. In the final extinction session the verbalization rate gradually decreased suggesting that speech for these Ss had not gained much reinforcement value of its own. No generalization of speech (to a workshop situation) occurred."


"An institutionalized population of 30 children were given a speech sound imitation test composed of 25 consonant-vowel combinations. Results of this assessment indicated that although the retarded children made more errors than preschool children, the pattern of errors was similar. The most frequent type of error made by low-functioning children as well as normal preschoolers was in place of articulation. Subsequently, 10 low-functioning children were divided into component and speech-sound training groups. The difference in these procedures was the units of behavior that served as the training stimuli. The results indicated that the speech-sound group emitted fewer errors than the component group on the post test."


"Compared 10, 7.75-11.25 year old children with Down's Syndrome with 10 other severely retarded children on tests of recognition and reproduction of real and nonsense words after 0-, 15-, and 30- second delay. Results indicate that Down's Syndrome children performed better on the recognition task, but worse on the reproduction task after delay, as compared with the other retarded children. It is hypothesized that the articulatory deficit in the Down's Syndrome group is part of a general motor disability due to a difficulty in preprogramming sequences of movement."


"Forty-nine mentally retarded children (CA 3.7-15.9 years, MA 50-129 weeks) with diverse diagnoses were given, individual and group training to stimulate naming behavior. Each S served as his own control in a comparison between learning through a Normal Language Corpus (NLC) and a Reduced Language Corpus (RLC). The simplified (RLC) technique was not superior to the NLC but individual training was superior to group training, particularly in the MA range 50-120 week."


"Suggests appropriate visual, auditory, and tactile-kinesthetic stimuli for the development of speech in institutionalized mental retardates and outlines the role of attendant personnel."

"Operant and imitative techniques were used in programming generalization of verbal behavior in a child."


"Studied relationship of Stage 6 of Piaget's sensorimotor period and the acquisition of meaningful expressive language. Subjects consisted of eight profoundly retarded children who displayed some meaningful expressive language and eight profoundly retarded children who displayed no meaningful expressive language. Found a strong relationship between Stage 6 functioning and meaningful expressive language."


"Assessed a training procedure designed to establish functional expressive usage of "yes" and "no" in the language skills of three institutionalized retardates. The procedure employed a trainer and a "modeler" (second trainer), in the context of a training module which utilized a match-mismatch paradigm. The procedure utilized a pretest-posttest, changing-criterion experimental design to evaluate acquisition and limited generalization of the two responses as a function of the contingent reinforcement training procedure. The procedure was effective with the three subjects."


"Three moderately to severely retarded children who demonstrated a limited expressive noun vocabulary were placed in a language program to be trained to produce the basic grammatical relations (subject-verb-object response). Behavior modification techniques were employed in the language training program. Results indicate that children learned to produce appropriate subject-verb-object responses to novel pictures which represented trained and untrained constructions. Two of the subjects produced a large number of subject-verb, verb-object and subject-verb-object responses in their spontaneous speech after training was completed."


"Taught 2 severely retarded 16 year old boys to discriminate items they knew how to label from items they did not know, to respond appropriately by naming any training items and to ask a question about any items they did not know. The Ss did not learn to question when appropriate questioning was modified by the E, however when prompted and rewarded for asking questions about some training items, they began to ask questions about items they did not know."

"Studied the use of various music and related audiovisual activities to aid in the development of functional speech in 6 institutionalized severely retarded children. Results indicate that correct functional speech can be acquired at a relatively rapid rate by the institutionalized severely retarded using music therapy procedures."


"An attendant-administered program for developing imitative speech through reinforcement techniques is described. Improvement in imitative control over the course of training was demonstrated and this control generalized to situations outside of sessions."

**LANGUAGE (GENERAL)**


"A nonspeech symbol system, consisting of small pieces of masonite cut into various shapes, was used to investigate the learning of noun usage by nonverbal severely and profoundly retarded children. Results indicated that most such subjects can learn appropriate skills and do so in a short period of time when this nonspeech response mode is employed."


"Reviewed literature dealing with speech deficits and treatment programs for the non-speaking retarded. Reported that the results of a pilot study with 24 non-speaking severely and profoundly retarded adults indicated a reinforcement and prompting procedure might be one effective means by which to teach these individuals manual language."


"Investigated the feasibility of teaching 4 10-12 year old severely mentally retarded cerebral palseid children to use an electromechanical communication device. Ss easily learned to use the devise to signal distress and indicate the need for attention. The extent to which they used the device depended heavily on the attitude of the staff."

"Investigated 2 procedures (visual cue fading and task complexity) involved in teaching simple auditory discriminations to 20 severely retarded children who were assigned to 1 of 4 treatment groups in 2 and 2 factorial design. Analysis of variance on the final day's data indicated differences favoring visual cue fading procedures and that a 2 stimulus task was much more difficult than a 1 stimulus task. Another analysis of variance showed only differences in task difficulty."


"Developed an index of language proficiency by using a standardized system of direct observation of 92 ambulant, institutionalized, severely and profoundly retarded individuals. Found that 75% of subjects employed some type of vocal or gestural communication, 60% employed some vocal or verbal expression, and 25% employed some meaningful articulate speech.


"Conducted a study with 42 severely and profoundly retarded children to evaluate the effectiveness of a newly developed language training program particularly suited for the severely retarded. Program was designed for use with paraprofessional staff acting as teachers. Comparison of pre and post test performances indicates clear treatment effects, demonstrating potential for wide-spread institutional use of such programs."

Richardson, T. Sign language for the SMR and PPM. Mental Retardation, 1975, 13(3), 17.

"Describes a sign language program conducted for 9 severely or profoundly retarded training school residents. Significant improvement by all Ss at the end of the 11st year are reported. With an increased enrollment in the 2nd year including Ss with emotional problems, progress by 75% of Ss in comprehension and expression are reported."


"Studied an experimental group (N=11) and a control group (N=10) of severely subnormal children. The experimental group was given daily instruction with level P of the Peabody Language Development Kits."
Both groups were pre and post tested on some subtests of the ITPA. After a 10 month period, the experimental group showed significant gains over the control group on the ITPA subtest scores.


"Reviews 23 behavioral analysis studies of language training for the severely retarded which have been conducted since 1968. Found that many of studies: 1) dealt only with expressive language, 2) investigated the generative property of language, and 3) employed institutionalized subjects over the age of 8. It was also noted all works reviewed made reference to the use of tangible reinforcers. Authors suggested antecedent conditions be given closer scrutiny, effects of a variety of reinforcers be investigated, variables which result in generalization and maintenance.


"S was a 28 year old severely mentally retarded male who used no verbalizations other than the word 'car' and the vowel 'a'. Thirteen daily activity symbols were introduced by showing S a picture of the activity, labeling it, then producing a gesture. Results show S currently exhibits for less frustration when asked to use the gestures than when asked to speak and appears to be extremely pleased with his communicative ability. It is concluded S has untapped language potential and that severely and profoundly retarded population would benefit from such a program."

LANGUAGE (IMITATION LEARNING/RECEPTIVE)


"The relative efficacy of modeling and verbal instruction employed independently was examined in a study with 45 severely retarded males. The failure to achieve imitative learning under either treatment conditions is consistent with the reported nonimitative status of this population."


"The extent to which the 'Schulwerk' method promoted generalized imitation among 16 severely retarded adolescents was evaluated. The test of generalized imitation consisted of 4 gross motor and 4 fine motor items scored on a pass-fail basis. Results indicate that generalized imitation was generated by 'Schulwerk' but not
by a varied schedule of group recreational activities in which a control group of Ss had participated.


"A 90 item two-choice discrimination test was given to 26 institutionalized mentally retarded children. The experimental group was given a sequence of training in which imitative-sign movements were taught and subsequently were paired with appropriate words followed by pairing with appropriate objects. The control subjects were given no other training. Following training, a post test was administered. The post test was a replication of the 90 item word-object discrimination test using the objects name to indicate the correct choice. Results indicated that reliable differences were found between the experimental and control groups on the criterion measure suggesting that imitative sign training facilitated word-object association.


"Utilizing two severely retarded children, an experiment was conducted to determine if a generalized imitation operant can be developed without extrinsic reinforcer, as the stimulus viewpoint argues, or if it is essential as the stimulus-response view asserts. Results favored the latter theory, but not without reservations. The experiment was replicated on two profoundly retarded children yielding virtually the same, albeit more pronounced, results supporting the S-R viewpoint.


"Describes the use of food reinforcement to develop verbal imitative behavior in a mute profoundly retarded 14 year old girl. Study was comprised of 9 phases (1st 4 to develop vocalizations, last 5 to develop imitation of 5 training sounds). Correct imitation of training sounds developed rapidly with some evidence of generalized imitative responding.


"Conducted a study with 3 severely retarded females to: a) examine the effect of secondary reinforcers on the performance of imitative behaviors, b) study the effect of the conditioning process on an approval reinforcement condition and an approval plus music condition, and c) determine the durability of the newly conditioned reinforcers across a 2nd baseline period. Behavior was trained and tested under 3 reinforcement conditions: a) approval, b) approval and music, and c) approval, music, and food. Results show that conditions a and b did not function as reinforcers during the initial baseline period. Condition C increase the number of test trials
completed during the treatment period under conditions a and b. However, more test trials were completed under Condition C than under condition a during the treatment period."


"Reports the use of a variant of the conceptual acquisition program with an institutionalized profoundly retarded teenager. Results indicate the profoundly retarded teenager was not only trainable, but capable of rapid acquisition of behavioral, conceptual, and linguistic skills."


"Examined whether profoundly retarded Ss who are echopratic perform differently on a motor imitation task subsequent to film viewing than do profound retardates in general. Eleven echopratic and 10 non-echopratic males were studied. Measurements were made of chronological age and social quotient. Results show that the echopratic group responded better to modeling than did non-echopratic retardates. This is interpreted in terms of the echopratic's special ability at motor imitation."


"Conducted a 13 phase experiment with 3 severely retarded boys. In 8 phases, S's instructions before demonstrating a behavior and the consequences for imitative behavior were incongruent. Consequences rather than instructions controlled imitative behavior when: a) Ss were instructed not to imitate but received reinforcers if they imitated, b) Ss were instructed to imitate but were differentially reinforced for other behavior, and c) Ss were instructed to imitate but were verbally reprimanded for imitation. Although Ss were high imitative at the beginning of the study, when there was no reinforcement for imitation Ss gradually stopped imitating when instructed not to imitate. Instructions seemed to control imitative behavior when there was no reinforcement for imitation and Ss were instructed to imitate. Results indicate a need for further investigation of antecedent and consequent variables in imitation experiments and point out that certain techniques may be more efficient than others in eliminating well established responses."

"Attempted to measure the influence of music as a reinforcer to increase imitative behavior in profoundly retarded female residents. The Ss, 30 retarded adults were divided randomly into 3 groups: Group K had no music, Group L had continuous music, and Group M had music as a reinforcer. No significant differences were found. Thus the variable of music as a reinforcer did not increase imitative behavior in the Ss studied, nor did it influence discriminatory behavior."


"Gave basic communication training to 2 groups of 25 severely retarded children under experimental conditions of peer model demonstrating the correct response or verbal instruction only. Twenty-five control retardates were given equal activity time with no training. The modeling group significantly outperformed the verbal instruction group, who in turn outperformed controls."

LANGUAGE (INSTRUCTION-FOLLOWING/RECEPTIVE)


"Seven high school trainees each conducted training sessions with 2 profoundly retarded children. Each trainee was asked to teach one child to follow the instruction 'Bring ball and the other child to follow the instructions sit down and come here'. During baseline sessions before the trainees had been instructed in behavior modification techniques, no trainee successfully taught either child to follow the instructions. After trainees had been exposed to videotape, modeling, rehearsal and corrective feedback and praise training procedures to teach them to teach one child to follow the instruction 'bring ball', 4 out of 7 trainees were able to teach a child to 'bring ball'. Further, all trainees were able to teach their other children to follow the instructions 'sit down' and 'come here' even though they had no modeling, rehearsal or feedback on how to teach the children to follow these instructions. The ability of the trainees to teach new behaviors to different children indicates the development of generalized skills in b-mod."


"Trained 15, 9-22 year old severely and profoundly retarded institutionalized females to comply with instructions. In a multiple baseline design, 4 groups of residents were sequentially exposed to
training in instruction-following behavior. Baseline data were gathered for responses to instructions in a play activity situation. During training, residents were reinforced and prompted to develop compliance to a series of instructions. Reinforcers were gradually and finally only delivered after the entire instruction following sequence was completed. Results indicate that training dramatically increased instruction following behavior across groups.


"Purpose of study was to teach basic direct following skills to young severely handicapped students. Done in 3 phases: 1) teach students to follow one component direction (e.g. - 'stand up'), 2) teach students to follow one component distant direction (e.g. - 'go to door'), and 3) teach students to follow two-component local serial direction (e.g. - 'stand up and raise hands'). All 12 students were taught to follow at least one component local and distant direction. Authors note no measures of generalization to other people and places were made."


"Used a transfer of stimulus control procedure to teach 3 profoundly retarded adolescents a series of specific responses to specific verbal instructions. After imitative control of a behavior was established, a verbal instruction was presented immediately before the behavior was modelled. Each correct response was followed on the next trial by inserting a delay between the verbal instruction and the modelling of the behavior. Delays increased from trial to trial. Transfer of stimulus control was indicated when an S responded correctly on 5 consecutive trials before the behavior was modelled. All 3 Ss responded correctly to each verbal instruction after that item was trained in a multiple baseline order. Generalization did not occur to items that had not been trained."


"Used a combination of positive reinforcement and fading of physical guidance to teach a profoundly retarded 11 year old boy specific responses to specific verbal instructions. S started responding correctly to each verbal instruction as that item was trained in a multiple baseline order. Generalization did not occur to items that had not yet been trained, nor to items included to assess generalization."

MISCELLANEOUS (DEFINITION, PREVALENCE, CLIMATE, PSYCHOTHERAPY)

Reviewed twenty-seven community studies of severe mental retardation (IQ 50). Found that: 1) prevalence rate of this condition in older children was 4 per 100, 2) rate was slightly higher in males, 3) rate did not vary by social class, 4) one-half severely retarded children had associated handicaps, 5) in most cases causes were not known (Downsyn 1/6 to 1/3 cases, small % due to chromosomal abnormalities, metaboloc diseases or infection).


"The need for adequate definitions for the severely handicapped as well as some of the problems involved in developing a suitable definition are discussed in this paper. Both practical and philosophical problems are considered. A tentative definition is proposed to generate further discussion."


MOTOR PERFORMANCE


"Prior to treatment, a nonverbal, 8 year old severely retarded child was confined in an enclosed crib to prevent hazardous voluntary falling. The treatment program involved the technique of developing a small rug as a cue and concurrently, a conditioned reinforcer for sitting. The rug, when placed on a stool or bed, served the dual function of controlling falling and reinforcing appropriate sitting or lying. It was demonstrated that bed and stool falling changed as a function of rug placement and control over falling was retained even after the rug was no longer in use."


"Describes a study of the profoundly retarded child who continues to crawl even though he can walk. Crawling and walking were viewed as alternative response modes, both reinforced by movement. A training program was designed to increase ease and speed of walking relative to that of crawling and consisted of restraint for crawling and priming of walking. With this program 4 profoundly retarded 4-7 year olds reduced crawling and began to walk instead. When training was discontinued 2 Ss with moderate walking impairment continued to walk rather than crawl. Two Ss with severe impairment, however, required occasional use of the restraint procedure to maintain walking as the dominant mode of locomotion. The program was easily administered, required little time, and was effective for all 4 Ss."


"Applied positive reinforcement to incompatible behaviors of good posture and straight walking to a physically handicapped, retarded 20 year old hydrocephalic female. At first only walking straight was reinforced, then only holding head up, and finally reinforcement occurred only when both straight walking and head up took place. Results indicate that whichever desired behavior was reinforced by itself increased and its opposite decreased. During the 3rd phase, both desired behaviors increased. E noted that reinforcing straight walking did not generalize to good posture."


"The effect of music on work production, off task, social interaction, self-injurious and yelling out behaviors of 39 severely and profoundly retarded citizens engaged in training in a workshop setting was assessed. Found that music did not significantly affect these behaviors."


"Operant conditioning procedures are discussed and a method of using music as a behavior modification tool with severely retarded children is presented."

PARENTS


"Compared the ratings by parents and professionals of severely and profoundly retarded adults on developmental tasks as described by R. Valett (1970). Results indicate that 73 out of 110 correlations between professional and parent or guardian ratings were significant. In areas where judgment of behavioral manifestations which were emotionally tinged was required, the instrument was weakest; for areas where the tasks were clearly stated descriptions of observable performance and for which the raters were asked to judge the quality of the performance, there was evidence that the professional and parents or guardians agreed strongly. Instances of incorrect scoring procedures are noted."


Townsend, P. H. and Flanagan, J. J. Experimental pre-admission program to encourage home care for severely and profoundly retarded children. American Journal of Mental Deficiency, 1976, 00, 562-569.

"Designed an experimental treatment program to reduce institutionalization of severely and profoundly retarded children under 6 years of age. Found that: 1) counseling with mother alone tended to increase marital conflicts and result in a decision to keep the child at home, and 2) instructing the mother in child-training procedures tended to reduce the number of objectionable child behaviors and
result in a decision to keep the child at home. Suggested that family counseling should be employed and consensus within the family be sought when decisions are made regarding the retarded child's future."


"Discusses variables which affect the adjustment of parents and retarded children to resident care and describes attempts to ease this adjustment."

PHYSICAL THERAPY/SENSORY STIMULATION


"Thirty retarded children (ages: 306 to 10-12, IQ's: 21 to 65) with specific prehension disabilities of finger opposition, wrist rotation, and voluntary grasp responses played in regularly scheduled sessions at school with an automated playtest toy console designed to facilitate improved performance on each of these functions. Correct responses produced audio-visual reinforcers and the frequency and duration of all correct and incorrect responses were recorded. The highly favorable results are interpreted in terms of broad operant behavior principles applied to specific rehabilitation needs."


"Presents data which indicate the feasibility of automated physical therapy for the crib-bound profoundly retarded via operant conditioning techniques. The eliciting properties of tactile stimulation were determined with 3 children (3½ and 5 years old) involved in daily 30 minute training sessions for 40 days. An inexpensive manipulandum, which has been field tested and which reliably records responses from a crib-bound S was used. Each S's idiosyncratic rate of responding dictated the most effective procedure to increase his rate of gross physical movement. Implications are stated concerning the possibilities of automated physical therapy."


"Reports a 9 month study of 3 profoundly retarded, multiply handicapped Ss less than 5 years of age, who received mother administered, clinic-supervised treatment for neurodevelopmental sensory integration. The emergence of more advanced postural reactions, changes in affect, and responses to objects were recorded. Results suggest that new engrams may be established with the aid of normalized
muscle tone and feedback, which in turn can be used to activate formerly precluded neurons. Trends toward early cognitive emergence are discussed in terms of the development of interest and affect, as related to the concept of 'fixation attention' of normal 9 month old infants.

**PLAY TIME/ACTIVITY**


"Studied free play activity of five profoundly retarded hyperactive children. Measures of free play activity were obtained via a heart rate telemetry system. Children played in groups consisting of two boys, three girls and four boys. Spectral analysis used to test for biorhythms in the free play of the children revealed no significant differences in biorhythms as a function of sex or playgroup size."


"Reviewed research with non-retarded infants and preschoolers relative to preferences for different toys and materials. Recommendations and guidelines were then advanced for selecting optimal play materials for severely and profoundly retarded persons."

**PROGRAMS/PROGRAM ASSESSMENT**


"Describes operation of a Ruebella living-unit, established to halt regression and teach basic self-help skills to a group of preschool deaf, blind, mentally retarded children, mostly confined to beds in a residential school."


"Evaluated effectiveness of different types of programs (standard care, special program, released and in community) in producing changes in ambulation and toilet training in retarded individuals admitted to an institution. Found over a 3 year period: 1) little change in ambulation unless special sensorimotor training was provided, 2) little change in toileting behavior unless special programming was provided, and 3) in all cases those individuals under standard institutional care showed the least change."

"Investigated the use of a markov chain model in evaluating treatment programs for severely and profoundly institutionalized retarded children. Compared four programs (Intensive Training, School, Beh Mod, and Foster Home) to hospital's standard care program. Measured expected progress, long-range cost and outcomes. Found that Markov model did aid in the evaluation of programs in terms of costs and benefits."


"Reports on some of the experiences the Eastern Nebraska Community Office of Retardation (ENCOR) have had in setting up their residential programs. This paper also provides a systematic continuum of residential services, rather than a piecemeal approach. It shows how communities can, if necessary, provide such services in a tailor-made fashion, humanly and economically meeting the unique needs of every mentally retarded person and his family."


"An overview of 17 special projects funded by the Division of Personnel Preparation, Bureau of Education for the Handicapped, is presented. These projects are 'designed' to demonstrate and evaluate procedures for preparing personnel to educate the severely handicapped."


"In an effort to develop an efficient, practical program to serve a group of mentally retarded children excluded from other treatment programs, an innovative teaching environment was developed. A period of individual therapy designed to increase attending behaviors and decrease aggressive, self destructive, or other interfering responses was followed by programming each child into a therapy zone plan of treatment. The zones of special education, self-help, language skills, socialization and motor skills were used. The zone approach was discussed as a viable community based model."


"Information on Bureau of Education for the Handicapped funded projects for the severely handicapped is presented."

"Thirty seven retarded children at the Coastal Center in Ladson, South Carolina were divided into five heterosexual ability groups for 30 minute sessions of educational therapy five days per week for nine months. Marked improvement was found in motor, perceptual and language skills with transference to self-help skills, socialization and better use of leisure time in the cottage."


"Describes a 3 year old community center which has developed programs that gave the residents a high level of interaction with direct-care staff members and with the community. Features of the program include small groups of children living together in 4 bedroom homes served by the center, vocational training for high school students, the use of the center's facilities by community residents and an audio visual service for inservice training and staff communication."

An alternative to representative day care centers. Education and Training of the Mentally Retarded, 1974, 9, 41-43.

"Describes Programmed Environments for the Developmentally Retarded, a project carried out by J. W. Towney at the University of Kentucky and designed to meet the expected demands for services to the severely developmentally retarded. Since the existing system of day care centers provides only limited instructional time for the children, other possible methods suggested by Dr. Towney for attacking the problem of educating the retarded population are discussed. Specific factors to be considered and major questions needing to be answered before intervention models can be devised are examined."

REFERENCE MATERIAL (A-Z)


Friedl, M. Supplement to a selected bibliography (partially annotated) related to the vocational training of severely handicapped persons. American Association for the Education of Severely and Profoundly Handicapped Review, 1976, 1(5), 46-58. (45 references)

Lloyd, C. References drawn from three CEC bibliographies on the severely and multiply handicapped are listed under the headings of curriculum guides, language instruction, teaching materials, parent guides, materials and technology, and reference materials.

"Divided in areas of diagnosis and symptomatology, etiology and epidemiology, treatment, language training, and follow-up studies."


"Annotated bibliography on behavior modification literature with several entries relevant to severely retarded."


"Annotated bibliography of trainable and severely and profoundly retarded literature.


"Annotated bibliography of trainable and severely and profoundly retarded literature.

**RESEARCH**


"Presented an interactive model to encourage a systematic coordination of effort toward the development and implementation of a progressive and cohesive attack on the problem of educating the severely handicapped retard".


"A review of response and measurement units used by researchers with the severely handicapped was conducted. A discussion of the applicability of the various response units (e.g., percent) in reference to the desired effects of instruction or intervention and in regard to the specific learning stage are discussed. The author concludes that a careful application of traditional units with some reservations may prove effective for teachers of the severely handicapped."

"Twenty eight severely and profoundly retarded females received basic self-help training in a feeding program in which 10 second time out from food was contingent upon inappropriate feeding behavior. The ward attendant staff gradually assumed complete responsibility for the operation of the program. The effectiveness of such a simultaneous attendant-patient training procedure is discussed relative to previous findings."


"A weight loss program for 3 severely retarded adult females based on behavioral controls consisted of: a) a manual for parents of retardates, b) colored tokens to represent food groups, c) monetary payments for weight loss, and d) daily weighings. Despite very limited intellectual capacities, Ss were able to develop new eating behaviors resulting in weight losses that were maintained at follow-up.


"Describes the successful use of behavior modification procedures to restore feeding behavior in a recently blind 11 year old profoundly retarded female. The patient was rewarded by being allowed to play a music box. Despite the girl's progress, she was withdrawn from the program after 14 days of treatment when her mother observed one of the nurses scolding and shaking her. The importance of staff cooperation is emphasized."

Mann, W. C. and Sobsey, R. Feeding program for the institutionalized mentally retarded. Occupational Therapy, 1975, 29(8), 471-474.

"Describes a behavior modification program geared to eliminate pathological eating patterns and create a more supportive environment in the dining room. Results showed that the noise level in the dining room dropped significantly, that food grabbing decreased, and that there was less food spillage reported."


"Investigated in 2 experiments the possibility of employing 2 mildly mentally retarded residents to observe the mealtime behaviors of lower level retardates. It was found that the residents could rate

"Delineate two areas of needed research in reference to programming for the education of severely/profoundly retarded in public school settings. One area pertains to curriculum development and curriculum research and the other pertains to instructional problems related to curriculum implementation. An extensive list of researchable questions is presented."


"Presented and discussed a data collection system which they believed would simple the mechanics of data collection. This system has five essential characteristics. It could be used: 1) independently by a classroom teacher, 2) during training without significantly slowing or disrupting the teaching procedure, 3) to record performances of more than one pupil at a time, 4) in more than one or two areas of instruction, and 5) to reduce time spent in data consolidation and graphing."

SELF-HELP SKILLS (DRESSING)


"Reports that operant conditioning procedures improved mastery in self-help skills (putting on and taking off jackets) in six 6-12 year old profoundly retarded children. Three Ss were reinforced by food and 3 received social reinforcement. Considerable learning success was made in both groups after 35 sessions. The social reinforcement group was slightly better than the material reinforced group."


"Describes how an 8 year old retarded boy was taught to remove his shirt, via backward chaining procedure, in 16 training sessions."

SELF-HELP SKILLS (FEEDING)


"Used operant conditioning techniques with a profoundly retarded 17 year old female with phenylketonuria who was ingesting no food and had lost 50 pounds. Secondary reinforcer was used to re-establish a primary reinforcer and thereby shape and restore eating behavior. A 1 year follow-up revealed that S regained normal body weight and had no significant feeding problems."
mealtime behaviors reliably. The residents were then employed as reinforcing agents, to determine if a retarded 'trainer' could modify the observed mealtime behaviors within a multiple baseline design. Since an experimental was demonstrated on 4 of 5 target behaviors it was concluded such change agents could modify mealtime behavior of lower functioning residents."


"Compared modeling to physical guidance procedures used in teaching retarded (IQ = 25.3) knife, fork, and spoon use. Found that: 1) premeal training methods resulted in no improvement over baseline performance, 2) physical guidance procedures resulted in significant improvement while modeling procedures did not, and 3) physical guidance coupled with praise resulted in significant improvement in utensil use.


"A profoundly retarded 6 year old who ate food with her hands was trained by a manual guidance procedure to eat properly with a spoon, but the S still did not use the spoon after learning to do so. When a motivational-maintenance procedure was applied, the S did begin to eat properly. Results demonstrate that continued motivational procedures are needed after training to maintain the retardates continued use of proper eating skills."

Primary technique used was a 7 step shaping technique with reinforcement and fading procedure. Factors such as maintenance of post training eating behavior, length of time taken to reach successive steps of training, choice of specific training procedure, use of physical restraints, readiness of the children and motivating variables for the trainers are discussed.


"Describes the use of beh. mod. techniques in modifying a 10 year old profoundly retarded boy's inappropriate mealtime eating behaviors. After 90 sessions, target behaviors (e.g., upsetting food and throwing dishes) were reduced to near zero and some transfer to other social situations was observed."


SELF-HELP SKILLS (GENERAL)


"Measures were taken of residents activity and performance of self-help skills on a ward housing severely and profoundly retarded adult.."


"A positive reinforcement program was employed in an attempt to teach 30 severely and profoundly retarded boys to shower, wash their hands and face, brush their teeth, and to put on their shirts and pants. Teaching was conducted on a one to one basis by the regular cottage staff. Found that after 7 months the boys had learned an average of 1.6 skills each.


"Female mentally retarded adolescents were trained to teach dressing and feeding skills to severe and profound retarded children. The female tutors taught the retarded children dressing and feeding skills in 18.5 and 20 hours, respectively.

SELF-HELP SKILLS (TEETH-BRUSHING)


"Aine severely retarded boys were trained to brush their teeth via operant techniques. A comparison of pre and post program performance yielded highly significant results except for 1 S.


"A token reinforcement 'star' program aimed at increasing the regularity of oral hygiene skills being performed was implemented in a setting of retardates in severely retarded geriatric women. Results..."

"Describes a home training method for incontinent children utilizing a signal apparatus. Effective toilet training was accomplished through simple conditioning procedures using an auditory signal apparatus in a profoundly retarded 7 year old male for whom traditional training methods had failed."


"Reviews literature dealing with operant methods of toilet behavior training and offers suggestions for future progress in this area."


"The efficacy for institutionalized retarded nocturnal enuresis of a conditioning treatment consisting of an electrical buzzer warning device set off by the act of urinating in bed was assessed using 21 experimental subjects matched with 21 control subjects on age, sex, IQ and number of wet nights over a 7 night baseline period. Eleven experimental subjects were conditioned successfully but follow-up ranging from 1.6 to 2.5 months indicated 4 of these 11 successes relapsed."

**SELF-INJURIOUS BEHAVIOR**

principles: nurturant nursing care through the fostering of warm, close relationships; interruption and prevention of destructive behavior; and reinforcement of more acceptable behaviors. "Case histories are detailed."


"Describes an attempt to effectively reduce self-mutilative behavior (head banging) in a profoundly retarded subject by means of aversive stimulation (electric shock). The case study is illustrative of how punishment - specific problems associated with the visibility of aversive stimulators can be overcome."


"Describes the case of a 12 year old profoundly retarded, self-abusive and assaultive child who did not feed himself. An operant conditioning program motivated the S to feed himself and to modify undesirable responses within 8 days. Training occurred during mealtimes using bites of food as a reinforcer."


"Studied the effects of three techniques employed to reduce the rate of self-injurious behavior displayed by three profoundly retarded females during mealtimes. Found that withdrawal of food and withdrawal of food and attention resulted in a marked reduction of self-injurious behavior and withdrawal of attention resulted in increases..."


"Response-contingent shock has been demonstrated to reduce the rate of head-banging, but poor generalization has frequently resulted. The treatment of a 9 year old profoundly retarded, head-banging female demonstrated similar problems with generalization when stationary shock equipment was used, but remote-control apparatus was able to overcome generalization problems and reduce head-banging to zero."


"Reinforced a severely retarded institutionalized female on an adjusted DRO schedule until scratching and head-banging was reduced, extinguished this response, and then reconditioned it."

Tate, B. G. Case study: Control of chronic self-injurious behavior by conditioning procedures. Behavior Therapy, 1972, 3(1), 72-83.

"Describes an unusually severe case of chronic self-injury. The patient was an 18½ year old retarded girl who had been restrained in bed for 7½ years. A variety of conditioning procedures were used and the behavior was brought under control during the first week of therapy. In succeeding weeks efforts were directed toward maintaining control and preparing the patient to live in the..."
increased in frequency while another class decreased. Data indicate that the mere presence of any particular alternative behavior that is effective in obtaining reinforcement is not sufficient in itself to reduce self-injurious behavior. During a final phase of this study response contingent shock was introduced. This procedure was effective in suppressing the class of self-injurious behavior to which it was applied. Self-injurious behavior which was not punished continued at baseline level.

SOCIALIZATION (A-Z)


"Elicited a handshake from 20 of 26 profoundly mentally retarded adult males. This result challenges the prevailing pessimistic view of the social sensitivity of profoundly retarded persons. Possible corrective training practices are discussed.


"Intensive play is the building through close body contact and physical stimulation, of positive responses to normally pleasurable experiences. Intensive play was developed to break through the barriers of unawareness, tearfulness, and unresponsiveness and is used for building affective behavior."


"Observed the behavior of 13 male and 16 female profoundly retarded 18-30 year old adults in response to the visual stimulus of a human infant. Little support was obtained for the ethologically based hypothesis that the infant as a sign stimulus would release parental (i.e., approach) behavior. However, significantly more active
significant differences between observation and experimental periods for the duration of smiling behavior.


"Observed several types of interpersonal interaction between institutionalized retarded children and their attendants. When the ward population decreased and only one aide was present, there was a significant increase in the frequency of desirable types of aid behavior."

Hurzem, P. and Damon, S. G. Social interactions of a group of severely retarded people with staff and peers in a ward setting. Psychological Reports, 1975, 36(3), 959-966.

"In a small hospital, the social interactions of 12 adults and 1 12 year old severely retarded persons were observed with staff and with each other. There were marked individual differences in susceptibility to social interaction. The frequency of peer interactions were very low. In terms of interaction with the staff, Ss could be grouped as high, moderate and low scorers. Aversive behavior was emitted spontaneously by some high scorers, thereby achieving interaction from staff, and by the low scorers in response to approaches from staff, thereby decreasing the likelihood of such attempts at interaction."


"Found that severely mentally retarded adults divided rewards in proportion to each members work input whether they divided the rewards between themselves and a fictitious partner (cost situation) or between two absent individuals (no-cost situation)."

"Compared 3 approaches (high-low dyad, low-low dyad and experimenter-low shaping) to the development of cooperative play in 6 severely retarded 4-12 year olds. Results show that pairing a high and low interacting child and the shaping procedure produced the greatest amount of cooperative play. No appreciable increase in cooperation was found by pairing 2 low interaction children or in the no-treatment condition. These results were maintained at the 3 week follow-up evaluation."


"Conducted a study with 43 male institutionalized mental retardates to determine the extent to which specific social behaviors would be affected by supplementary activities and external stimulation provided in conjunction with a general training program in self-help skills. A training program in functional independence was developed and evaluated using the Balthazar Scales of Adaptive Behavior, Section I (BSAB-I) and the Scales of Functional Independence. Following 1 year of training, the effects of the training program on the Ss were measured using an earlier version of the BSAB-II: The Scales of Social Adaptation. Results indicate that general external stimulation and a supplementary activity program, in conjunction with individualized programs for improvement of self-help skills, did affect the social behaviors of males 21 years old and under. Further it is likely that the lack of social responses in these Ss was due not only to the effects of mental retardation alone, but to lack of training and social deprivation as well.


"Seven pairs of profoundly retarded individuals learned to work together
Reinforcement techniques of prompting and shaping were employed to develop handwaving, a useful social greeting response, in four institutionalized retarded subjects. However, this behavior did not generalize to other staff members in the institution until a 2nd experimenter trained and maintained the response in conjunction with the first experimenter.

Strain, P. Increasing social play of severely retarded preschoolers with sociodramatic activities. Mental Retardation, 1975, 13(6), 7-9.

Conducted a study to determine whether sociodramatic activities would function to increase the social play of severely retarded preschool children during a free play period. Ss were 8 severely retarded 48-52 month olds with a mean IQ of 37. Social play was observed across baseline and intervention conditions in an ABAB design. Results suggest that the opportunity to engage in sociodramatic activities and increased social play are functionally related.


Devised an observational method to analyze behavioral and situational components of aide-resident interpersonal interactions in an institutional ward for retarded children. Through this method mode of communication, interpersonal affect, response to an initiator of an encounter, context in which interaction occurred, and mand/tact dimensions were measured. Observed a ward over a 7 week period and found that child-care and ward-management activities occurred on a consistent basis and that aides initiated most of the interactions.

Williams, L. Effects of a backscratch contingency of reinforcement for table serving on social interaction with severely retarded girls. Behavior Therapy, 1975, 6(2), 220-229.

Social interaction within 2 dyads of severely retarded 19-23 year
a need to: a) revise training for nurses caring for mentally retarded children, and b) consider other types of staff training, other forms of long-term care and the need for larger staffs."


"Studied responses to group pressure as related to sex, IQ and presence of an authority figure. Group members were asked to report on positions colors occupied. Found subjects with lower IQ's yielded more often to group pressure."

**STEREOTYPIC BEHAVIOR**


"Reinforced 9 severely and profoundly retarded adults, who engaged in stereotypic behavior, for displaying outward-directed behavior. This reinforcement program reduced the rate of stereotypic responding by about two-thirds. When the reinforcement program was combined with an overcorrection procedure the rate of self stimulatory behaviors was reduced by 95% after a 2 day period."


"Recorded the stereotypies and toy play of 3 severely retarded children. Prompting and positive reinforcement of toy play markedly increased toy play responses and decreased stereotypies to zero level."


"Presents the case study of a severely mentally retarded 13 year old child who was exhibiting undesirable stereotyped gestures. Five behavioral methods were used in succession to eliminate the gestures: manipulation of objects, physical contact, aversive conditioning, reinforcement of other behavior, and overcorrection. The latter proved least effective. Manipulation of objects and physical contact were most effective."


Stereotypic responding of three severely retarded individuals was reduced by reinforcing these individuals after specified time periods had elapsed during which they displayed no stereotypic responding. Responses whose frequency decreased included: hand motions, lap flapping, and rocking.

learning study, followed by stimulus generalization tests on a hue continuum and extinction trials. Significant correlations were found between the number of intersignal responses in learning, responding to and around the nonreinforced stimulus (S-), types of errors in extinction, and the S's position on an excitation-inhibition dimension based on clinical descriptions of the behavior of the retarded given by A. R. Luvia (1963).


"Assessed light sensitivity in 16 deaf-blind, preschool, postrubella children via an operant procedure which allowed the children to select preferred illumination feedback as reinforcement for operating a two-choice lever switch. Purpose of this procedure was to develop a way to assess limits of the child's vision on order to construct educational plans which could make maximum use of the child's residual vision.


"Eighteen 29-54 year old profoundly mentally retarded male Ss, having a mean social age of 1.65 and a mean social quotient of 6.63, were tested for depth perception on the 'visual cliff'. Thirty nine percent of those tested clearly perceived this illusion of depth. The theoretical and practical implications of this experiment, and further experiments to be carried out in the future are discussed.


Hogg, J. and Maier, I. Transfer to operantly conditioned visual fixation in hyper-
"Four severely retarded children, who had previously demonstrated fast incorrect (impulsive) responding, were trained in color discrimination under two conditions. In condition one they could make a response immediately and in condition two they had to wait 5 seconds before responding to the stimuli. Performance of the subjects under the no-delay condition was at a chance level whereas under the delay condition color discriminations were being correctly made at an 80%-90% level."


"Reinforced 10 hyperactive severely retarded children both socially and with edibles contingent upon their visually fixating on objects. Found both frequency and duration of visual fixations increased under reinforcement conditions.


"Relative preference for a vibratory and a visual stimulus was investigated in 30 mentally retarded children. Found a significantly greater vibratory preference in the low-MA group (severe and profound) than in the middle and high MA groups."


Ponder, H. A. Effects of mother-surrogate nuturance upon pupillary responses and looking times of institutionalized moderately and severely retarded adults (Doctoral dissertation, University of Texas at Austin, 1970). Dissertation Abstracts International 1972 32 3806A (University Microfilms No. 72-27121)
shaped and fixation training was done to correct as much as possible the eye conditions. Found that fixation training increased the subject's discrimination from 1 to 15 objects. The second experiment evaluated the use of eye movement parameters to differentially process information. Found that fixation frequency and error rate were correlated; fixation frequency decreased with correct choices."


"Measured severely retarded deaf-blind children's performance in tracking a shifting light source by means of changes in head orientation. Found more than three times as many head turns were made during test periods as during baseline periods, and 13 out of 14 subjects evidenced significantly more head turns during test as opposed to baseline periods. Results clearly established gross visual tracking capabilities in these deaf-blind postrubella children."


"Tested 2 groups of severely subnormal children (46 mongols and 41 non-mongols) for short term retention of color and shape information using colors of equal brightness. Both groups could do a simultaneous match on the basis of the color or shape, but the mongol group made many errors in successively matching colors and in pointing to named colors. They experienced no difficulty in successively matching and naming shapes and the non-mongol group had little difficulty with either color or shape."

VOCATIONAL


"Severely and profoundly retarded adults appear able to benefit from significantly more vocational opportunities than are typically provided. Examples of work tasks currently performed by this group were presented in order to emphasize their vocational abilities and successful training and supervision procedures are illustrated."


Bender, M. An experiment using a visual method of instruction followed by imitation to teach selected industrial education psychomotor tasks to severely mentally retarded males (Doctoral dissertation, University of Maryland, 1971). Dissertation Abstracts International, 1972, 32, 5004A-5005A. (University Microfilms No. 72-10, 063)

"In order to evaluate the work potential of blind, severely retarded, multiply handicapped persons, a model project involving the manufacture of bath perfume was established within an already existing program. Fifteen clients attempted to master 1 or more of the 5 work station tasks (bottle, fill, cap, label and box). There were 48 successes in 53 attempts, for an 83\% success rate. Of these successes 75\% were accomplished in only 1 or 2 hour working day."


"Sixty four moderately and severely retarded individuals enrolled in 4 sheltered workshops learned to assemble a 15 piece bicycle brake and were then tested for transfer to a 24 piece bicycle brake. Fifty three of the subjects were retested on both tasks after 1 year. One half of the subjects worked with parts of the training task as they came from the factory while the other half of the subjects worked with color-coded parts. All groups worked with the 24 piece brake as it came from the factory. Half the subjects learned the tasks to a criterion of 5 correct out of 8 consecutive trials, the other half performed 20 trials beyond criterion. The Color-Form Groups learned significantly faster than the Form-only groups. Overlearning did not affect transfer. The one year retention study yielded significant retention effects."


"Designed an effective and effective procedure for training moderately and severely retarded individuals to make fine visual discriminations. A test of the model was conducted with 16 adolescent and adult retardates. Results suggest that expectations for such individuals are in question. Implications for sheltered workshops, work activity centers, and classrooms are discussed."

Johnson, V. N. Development of an imitative repertoire for teaching manipulative skills to severe retardates (Doctoral dissertations, University of Tennessee, 1972). Dissertation Abstracts International, 1972, 33, 2171A. (University Microfilms No. 72-27, 476)


"Studied effects of a token economy on the work behavior of ten severely retarded adolescents. Measured rate of production, number of errors made during production, and visual inattention to tasks during a baseline, a training, and a follow-up period. Subjects worked on five 'nursery-can' tasks (box delivery, stripping, washing, punching and boxing). Results indicated: 1) Tasks
varied in difficulty, 2) a decrease in average error and an increase in average production with tokens, and 3) a decrease in average visual inattendance irrespective of tokens.

Merwin, M. R. The effects of pretraining upon the training and transfer of circuit board assembly skills of retarded adults (Doctoral dissertation, University of Illinois at Urbana-Champaign, 1974). Dissertation Abstracts International, 1975, 35, 61363-61373. (University Microfilms No. 75-11, 321)


'This paper describes a series of studies which is still in an early stage of development. The purpose of the research is to adapt training procedures previously used with moderately and severely retarded adolescents and adults (Gold, 1972) for use with trainable children. The studies are conceived as an initial step toward experimental investigation of issues associated with prevocational skill training.

Trybus, R. J. and Lacks, P. I. Modification of vocational behavior in a community agency for mentally retarded adolescents. Rehabilitation Literature, 1972, 33(9), 253-266.

'Applied operant techniques to 19 noninstitutionalized, moderately severely retarded adolescents who multiple behavioral problems and very low levels of productivity precluded them from working in sheltered workshops. While these procedures (token reinforcement, cueing, and punishment) were generally successful in raising production and eliminating or reducing work interfering behaviors, it was found that these operant methods had to be continued in order to maintain the improvements noted.'

Walls, ... T., Tseng, H. S. and Yarin, H. H. Time and money for vocational rehabilitation of clients with mild, moderate, and severe mental retardation. American Journal of Mental Deficiency, 1976, 80, 595-601.

'Studied a national sample of 600 vocational rehabilitation clients, one-half of whom had been rehabilitated and one-half of whom had not been rehabilitated. This sample was composed of mildly, moderately, and severely retarded individuals who were evaluated in terms of time in referral, training, and rehab. process, dollars for evaluation, facilities, all services, and earnings. Found that severely retarded clients spent more in training, rehabilitation facilities, and all services than mildly or moderately groups of citizens.'

VOMITING


"A combination of self-correction and practice in the correct manner of handling the urge to vomit entirely eliminated the nonmedically vomiting, of many years standing of a profoundly retarded 36 year old female inpatient."

"Rates of voluntary regurgitation displayed by two profoundly retarded institutionalized children were compared for a standard institutional feeding method vs a special feeding method. Both individuals exhibited a marked reduction in their rates of regurgitation when they actively participated in the feeding process (special feeding method).


"Used a food satiation procedure to decrease the frequency of vomiting responses exhibited by two profoundly adults. Satiation was defined as that point at which subjects refused to consume any more food during regularly scheduled mealtimes. Results revealed that: 1) subject one's vomiting was reduced by 94%, and 2) subject two's vomiting was reduced by 50%.


"Control of vomiting behavior in a profoundly retarded, female resident was accomplished by ignoring vomiting behavior and reinforcing other behavior. It was indicated that contingent attention had maintained the vomiting behavior prior to the intervention program.


"Administered electric shock to a 14 year old severely retarded male who weighed only 45 pounds and whose survival was in question. S was shocked over a 7 week period whenever he attempted to vomit. The vomiting response was practically eliminated and remarkable weight gain occurred during the treatment phase and a 3 month follow-up period."