

**BEHAVIOR PROSTHESIS LABORATORY:
CONTRIBUTIONS AND CURRENT ACTIVITIES**

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The Behavior Prosthesis Laboratory was established at the Fernald School in 1963 with support from the Massachusetts Department of Mental Health, The Fernald School, the National Association for Retarded Citizens and the National Institute of Mental Health.

Improved habilitation of severely behaviorally handicapped persons in the community as well as the institution continues to be its mission. Its approach includes automatically programmed behavior-analytic and instructional environments: 1:1 tutorials; instruction in group settings; training of institution and community teachers, peer tutors, parents and direct care personnel; and consultation for university, community agency and institution personnel both locally and nationally.

Its contributions to residents and staff of the institution, as well as to the Commonwealth and to the field of mental retardation in general, have included:

- ongoing analysis of a) variables that maximize effectiveness of instruction and b) behaviors of retarded learners that must be remediated or prosththesized for credible outcomes,

- automated environments offering residents repeated opportunities to obtain preferred reinforcers while their basic behavioral skills are being assessed and developed and their specific behavioral deficits are being remediated or prosththesized,

- a wide variety of preacademic, academic, social, prevocational and vocational instructional sequences developed in the first self-contained behaviorally oriented classroom for "custodial" children—a classroom that served as a model for institution and community classrooms across the country,

- instruction of residents of all ages in various quantitative skills (e.g., counting, time, money), the communication skills of reading and printing, workshop skills, gross and fine motor skills and the leisure-time activity of play,

- sequential operational description of the steps involved in both process and content task analysis in instructional design and in criterion-referenced, curriculum-based assessment,

- a manual describing an information storage and retrieval system including a series of forms for standardized recording of daily instructional procedures,

- continuing refinement and evaluation of newly developed instructional procedures and sequences with particular reference to their facilitative effects on both acquisition and mastery of increasingly "normal" skills,

- a service delivery system that can integrate volunteer community paraprofessionals and institution residents as tutors of the severely handicapped, as well as provide daily accountability for pupil progress,

- design and construction of prototype recording, signaling and behavior measurement devices for field application,

—design and construction of prototype remedial and prosthetic devices to meet specific needs of handicapped persons and their teachers,

—sponsorship of lecture and film presentations at Fernald by leading researchers in the field of applied behavior analysis,

—seminars and workshops for institution teachers and their supervisors, for ward personnel, for community teachers and for local ARC's,

—consultation and technical assistance to the major habilitative departments on the grounds, to community agencies serving retarded people and to staff from other DMH and Department of Education facilities -- both institutional and community-based,

—formal graduate training and regular in-service training for teachers of severely handicapped residents,

—a resource library of reprints that is being continually updated with acquisitions relevant to analysis and modification of retarded behavior,

—reports on new findings and new products and their application in both behavior management and instructional technology,

—hosting of monthly Data-Sharing meetings for Boston area teachers, psychologists and other professionals for presentation/discussion of instructional and administrative data and other programmatic information,

—publication of a) studies ranging from laboratory analysis of basic operant behavior characteristics and remedial and prosthetic variables to classroom tactics for generality training to cure of encopresis by parents in their own home, b) reviews of new texts in applied behavior analysis, and c) a monthly newsletter describing the contributions from Data-Sharing sessions,

—presentations of new developments and findings at professional meetings.

CURRENT ACTIVITIES

1. Design, application and evaluation of behavior measurement methods
 - a. efficient, easily applicable mechanical techniques of counting and timing behavior
 - b. standardized graphic representation of behavioral data
 - c. comparative evaluation of behavior measurement procedures
2. Analysis and interpretation of behavior assessment data
 - a. diagnostic/prescriptive assessment in standardized graphic format for curriculum planning
 - b. evaluation of behavior change patterns
 - c. program planning based on projections of behavior change trends
 - d. determination of normal skill proficiency standards
 - e. decision-making based on comparisons of behavior change patterns with pre-established proficiency standards

3. Design, validation and continuing evaluation of instructional methods
 - a. skill sequences, ranging from most primitive motor activities to higher order academic and vocational skills
 - b. materials design: principles and applications
 - c. acquisition and proficiency-training procedures
4. Design, construction and evaluation of prototype prosthetic/training aids, e.g., automated feedback devices for improving motor skill proficiency
5. Maintenance of a communications network with community agencies (serving Fernald and other DMH and Department of Education clients) who contribute to and benefit from our work
6. Direct instruction of professional staff in instructional and assessment procedures produced by the above activities
7. Consultation to administrative and professional staff re:
 - a. Administrative and supervisory decision-making and planning (based on information from department heads, community services, etc.,) applicable at all levels of the administrative/supervisory structure with the following process:
 1. Selection of relevant information
 2. Mechanics of information retrieval (e.g., standardized formats, etc.)
 3. Quantification
 4. Analysis, in standardized graphic form, of the information
 5. Policy confirmation/revision in light of the above information analysis
 - b. Behavior measurement and behavior change procedures for professional departments
8. Preparation of graphics
9. Preparation of reports describing our work and its implications for improved habilitation of severely handicapped persons
10. Information retrieval from and dissemination to other professionals and trainers of professionals
 - a. correspondence/consultation with international experts
 - b. presentations at professional meetings
 - c. hosting of monthly Data-Sharing sessions
 - d. publication of monthly Newsletter
 - e. consultation, workshops and inservice training for community and other DMH agencies
11. Acquisition and cataloging of instructional materials and publications to maintain an up-to-date resource for professionals and students in the area
12. Supervision of Psychology Services in a residential Division at Fernald servicing severely handicapped and geriatric clients
13. Development of staff supervision and administrative decision-making systems for program implementation by direct care staff.