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ABSTRACT

The role of physical education and recreation in early intervention for handicapped children is the focus of the fourth of seven related documents. Introductory information on the history and rationale for early intervention and on developmental characteristics of the normal and handicapped child is followed by bibliographies on the following topics: early intervention through recreation/play; early intervention through physical education/perceptual-motor experiences; integration of handicapped and nonhandicapped preschoolers; testing, assessment, and evaluation; facilities; curricula and activities; and toys, books, and other materials. Also included is a list of 12 films, reprints of 3 articles, brief descriptions of 12 programs, and information on periodicals, newsletters, organizations, agencies, and contact persons. (CL)

# Early Intervention for Handicapped Children

Through

# Programs of Physical Education and Recreation



Prepared and Distributed by
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Sponsored By
AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION, AND RECREATION
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# EARLY INTERVENTION FOR HANDICAPPED CHILDREN THROUGH PROGRAMS OF PHYSICAL EDUCATION AND RECREATION



April 1976

Prepared by PHYSICAL EDUCATION AND RECREATION FOR THE HANDICAPPED: INFORMATION AND RESEARCH UTILIZATION CENTER

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ACKNOWLEDGMENTS

This publication-packet has been developed by Liane Summerfield, Information and Materials Assistant, Physical Education and Recreation for the Handicapped Information and Research Utilization Center (IRUC).

Two apparently different but closely related trends have important implications for reaching and teaching young impaired, disabled, and handicapped children. Both approaches are designed to help these children achieve more productive and higher quality lives. Increasingly parent intervention and early family involvement are being shown vital to development of all young children, especially those with specific physical or sensory deficits. These opportunities and experiences are also important to help children develop personal independence and positive self image. These traits are vital to success at home, in school, and in community programs throughout life.

Many nursery, preschool, and early childhood education programs have been initiated for all children. A number of these programs provide opportunities for children with various handicapping conditions to play, grow, and learn with their non-impaired or disabled playmates. Interaction of this type is necessary to build positive relationships and enable children from both groups to develop appreciation for and understanding of each other. Recognizing differences in other children is important to the social and personal development of each child.

Recent federal legislation provides incentives to states for preschool programs for special populations. Therefore, activities and efforts in early childhood programs can be expected to increase in both quantity and quality. However, caution must be exercised so as to differentiate children actually in need of early intervention and those whose personal development schedule is simply slower than that of many children. We must be careful not to confuse and equate individual pace and deficiency. Unnecessary and unwarranted labeling is cruel at any time, but before an individual has a chance to prove him/herself it can be devastating.

Contents of this publication-packet have been developed to provide information about a variety of resources. These materials can help personnel seeking such materials for initiating new programs or to enrich existing ones. A wide assay of resources is included--listings of books, periodicals, audio-visual materials and media, and information about on-going programs and involved personnel. Much search of sources, review of materials, and contact with key people involved in programs of this type all over the country have provided input for this publication-packet.

Liane Summerfield deserves much praise and many accolades for leadership displayed in planning and implementing this project She applied her talents and abilities to every part of the project, for which each of us offer sincere thanks, appreciation, and gratitude. Those who gain the most from her efforts will be countless young impaired, disabled, and handicapped children who have better starts and greater opportunities for lives worth living because of Liane's efforts.

Julian U. Stein, Consultant
Programs for the Handicapped
Director, IRUC

# INTRODUCTION

Federal legislation and appropriations have resulted in more handicapped children attending regular public schools, greater accessibility of public facilities, and increased employment opportunities for formerly institutionalized individuals. In short, persons with all types of handicapping conditions are being mainstreamed into what used to be a world reserved for the non-impaired.

This trend has affected handicapped individuals of all ages, including the very young. Federal mandates now cover special education and related services (including physical education and recreation) for handicapped children as young as three years old. Research results have generated new interest in identifying handicaps and initiating remedial programs for handicapped children when they are even younger than three years. Because play and physical activity are so natural for young children, recreation and physical education have been easily accepted as necessary components of early intervention programs.

Of course, early intervention must take stock of the total child, and a wide variety of disciplines are involved in any one early intervention program. The contributions of physical therapy, language and speech therapy, audiology, counseling, and others cannot be overlooked. This publication, however, focuses on the contributions, values, and uses of physical education, perceptual-motor experiences and recreation play in early intervention programs for young handicapped children.

Parents, recreators, physical educators, educators, researchers, and students may find this publication useful as both practical information and resources for further research and study have been included. In addition, listings of toy and equipment manufacturers, activity guides, and on-going early intervention programs should help the user locate ideas and materials. It is hoped that this compilation of information, resources, and ideas will encourage the development of additional early intervention programs for handicapped children, as well as add to the quality of programs.

## EXPLANATION OF SYMBOLS USED IN BIBLIOGRAPHIES

The following symbols were used throughout the bibliographies included in this packet, to assist readers in obtaining needed materials:

+ Available from IRCC for reprint. Cost for 25 pages is $2.50 (minimum order); each additional page is .10. All orders must be prepaid (for AAHPER members, subtract 20%).

◊ Abstract available from IRCC. Cost is $2.50 for 10 abstracts (minimum order), $2.00 for next 10 abstracts, and 10¢ per abstract in excess of 20.

* Available from ERIC Document Reproduction Services, P. O. Box 190, Arlington, Virginia, 22210; use ED number when ordering; postage is extra.

Available from The Council for Exceptional Children (CEC), 1920 Association Drive, Reston, Virginia 22091.

# EARLY INTERVENTION: HISTORY AND RATIONALE

> "...The preschool period is biologically the most important period in the development of an individual for the simple but sufficient reason that it comes first. Coming first in a dynamic sequence, it inevitably influences all subsequent development..." (11, p. 2)

Early intervention refers to an interdisciplinary approach to identifying, treating, remediating, and lessening the adverse effects of handicapping conditions on children under six years of age. Individuals from a variety of specializations are involved in early intervention programs--physical educators, physical therapists, occupational therapists, speech therapists, therapeutic recreators, audiologists, physicians, nurses, teachers, psychologists, social workers, and, most important of all, parents. These individuals (all of whom are not typically found in any one early intervention program!) provide services and activities that are aimed at enhancing the child's physical, motor, perceptual, cognitive, social, emotional, language, personality, and behavioral development.

Intervention programs are not typically found in any one setting. They may be conducted in a public school under the name of early childhood education. They may be found in outpatient occupational or physical therapy departments, where they are known as infant stimulation programs. Day care centers, nursery schools, and other preschool programs may also be involved in early intervention through programs of play, motor skills, and behavior modification.

Today early intervention programs are receiving great impetus through the efforts of personnel from many fields who feel that the foundation for a child's subsequent complex behavior and skill performance occurs before that child enters kindergarten (21). In fact, numerous individuals feel that the most crucial period of any child's growth and development is between infancy and age two. Benjamin Bloom has gone so far as to theorize that 50% of intellectual development occurs by age four (3). Other investigators lend credence to the effects of early intervention by their findings that intervention has prevented mental retardation in children from low income homes (17,22,35).

A further reason for our growing interest and concern with early intervention is illustrated by figures on the number of handicapped children in the United States. Currently there are over one million handicapped preschool children (ages 0-5) in the U. S., or about 4% of the total preschool population.* By the time these children reach school-age, their number has swelled to over 10% of the school-age population. U. S. Department of Commerce Census Bureau projections estimate a possible 27 million children under five by 1980, and 30 million by 1990 (32). Thus, with growing numbers of young children and, simultaneously, growing numbers of young handicapped children, the need to identify

*Resource (newsletter), 6(1): page 2, March 1976.

and, if possible, remediate handicaps has become a humane as well as a financial necessity.

The need for early identification and treatment of handicapped children, or for the early education of any children, has not always been so clearly seen. Attention began to be paid to this area in the 1920's with university research and interest stimulated by Lawrence Frank in 1923. There were 1700 nursery schools by 1933 (4, page 159). Play was the primary aspect of all early childhood programs at this time, due to the prevailing philosophy that the child would read, talk, and develop skills when he or she was "ready." During World War II when many women were hired to work outside their homes, the Lanham Act provided funds for child care. Most of these child care centers attended only to the child's basic needs for food, rest, shelter, and supervision, and, as in the past, did not try to educate, modify, or enrich the child.

June 30, 1965, marks the first really comprehensive federal interest in early childhood programs. On this date Head Start came into being to provide federal funding for early childhood education for disadvantaged children. Five years later the Office of Economic Opportunity and the Office of Child Development funded a project directed by Ronald K. Parker to summarize everything known about providing good early care to children of all ages. This project, as well as Head Start, has produced many publications (6,13,14,15,18,19,20,26,27, 28,29).

Children definitely diagnosed as handicapped make up at least 10.4% (25,166) of total Head Start enrollment (241,212). Thirty-nine percent of handicapped children in Head Start have speech impairments, and 25% have health or other developmental impairments. One out of every four handicapped Head Starters have multiple handicaps. But, enrollment of mentally retarded, blind, and deaf children has dropped, leading many experts to speculate as to Head Start's true involvement of seriously handicapped children (13).

Recent legislation has ensured the participation of handicapped children in early childhood programs. The Education of All Handicapped Children Act (P.L. 94-142), signed into law in November 29, 1975, provides that all handicapped children from the age of three years may receive special education and related services, including early identification and screening, physical education, and recreation. A special incentive grant of $300 will be given to the states for each child aged three to five who is served through special preschool programs. States must be affording free public education to all handicapped children ages three to 18 by September 1, 1978, if they are to continue receiving funds under this Act. In fact, by Spring 1976 every state applying for federal funds must develop a statewide plan for preschool and early education for all handicapped children in the state. The plan must include: (a) description of children, including age level and handicapping conditions, (b) strategies for providing comprehensive special services for them, (c) description of procedures for grouping children according to individual needs, (d) plan's overall goals and objectives, (e) timetable for implementing goals and objectives, and (f) strategies for involving parents in all state plan activities.

Nearly $14 million from Education of the Handicapped Act funds has been awarded to over 150 projects designed to help handicapped preschoolers. Funding is administered through the Bureau of Education for the Handicapped, U. S. Office of Education.

Early experiences for handicapped children are recognized as influential in each child's future development. Federal involvement is assuring funds for programs and research. If this new interest in early intervention is any kind of indication, we may see in the future programs involving more and younger handicapped children.

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Explores three preschool models for total classroom programs: behavior modification, normal developmental, and cognitive developmental.

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5. Caldwell, Bettye M. The rationale for early intervention. Exceptional Children, 36(10): 717-726, Summer 1970.

Rationale presented draws inferential support from animal studies concerned with effects of early experiences, studies contrasting development in children reared in different social environments, and conceptual analyses of importance of early stimulation for development.

6. Cohen, D., R. K. Parker, M. S. Host, and C. Richards, editors. Child Development/Day Care: Serving School Age Children. Washington, D. C.: Superintendent of Documents, U. S. Government Printing Office (20402), 1972.

*7. A Comprehensive State Plan for the Education of Young Handicapped Children Below Age 5 in Virginia. Richmond, Virginia: Virginia State Department of Education, Division of Special Education, February 1974. 54 pp. (ED 112 543 $3.32 papercopy, $0.76 microfiche)

Outlines the tentative program for education of handicapped preschoolers in Virginia for 1974. Two appendices comprise over half of the publication, including references and sample checklists for gross motor, fine motor, social, cognitive, linguistic, and verbal development.

*8. Dunst, Carl. J. A Resource Guide to the Very Early Treatment of Handicapped Infants. 1973. 25 pp. (ED 082 393)

Reviews research, which supports value of early intervention. Four models of infant education are reviewed, and curriculum guides for deprived children, those with gross motor impairments, and hearing and/or visually impaired children are presented. Commercial companies and guides to making toys are included.

*9. Edgar, Eugene, compiler. Bibliography: Early Childhood Education for the Handicapped. Seattle, Washington: Washington University, Child Development and Mental Retardation Center, 1975. 12 pp. (ED 108 415, $1.58 papercopy, $0.76 microfiche)

Approximately 50 citations (1961-1974) are presented in this annotated bibliography. Sections of the bibliography include integration, early childhood education, paraprofessionals, Head Start, communication development, parents, and child development.

*10. Frank, Mary, editor. Pittsburgh Area Preschool Association Publication: Selected Articles (volume 8, number 1-4). Pittsburgh, Pennsylvania: Pittsburgh Area Preschool Association, October 1975. 94 pp. (ED 111 491 $4.43 papercopy, $0.76 microfiche)

This compilation of short reports distributed to preschool teachers in the Pittsburgh area covers adoption, expressive art therapy, the infant, and learning disorders in young children. Suggestions are given for therapeutic uses of art, drama, music, and dance with handicapped and non-handicapped young children. General information, including remediation activities, is presented on minimal brain dysfunction, sensorimotor disabilities in preschoolers and infants.

11. Gesell, Arnold. The Pre-School Child: From the Standpoint of Public Hygiene and Education. Boston, Massachusetts: Houghton-Mifflin Company, 1923.

12. Haith, Marshall M. Day Care and Intervention Programs for Infants. Atlanta, Georgia: Avatar Press (P.O. Box 7727, 30309), 1972. 72 pp. $3.25

Reviews literature on day care and home intervention programs currently in operation or proposed for infants under two years old. Four programs for handicapped infants are briefly described.

13. Head Start Services to Handicapped Children. Third Annual Report. Washington, D. C.: Office of Child Development (P. O. Box 1182, 20013), June 1975.

*14. Head Start Services to Handicapped Children. Second annual report of the U. S. Department of Health, Education, and Welfare to the Congress of the United States on services provided to handicapped children in project Head Start. Washington, D. C.: Office of Child Development (Dept. HEW), April 1974. 24 pp. (ED 111 523, $1.58 papercopy, $0.76 microfiche)

Documents the status of handicapped children in Head Start programs, number of children being served, handicapping conditions, and services being provided. One of the most important services of Head Start is allowing handicapped children to be in a developmental environment with nonhandicapped children.

*15. Head Start Services to Handicapped Children. First annual report of the U. S. Department of Health, Education, and Welfare to the Congress of the United States on services provided to handicapped children in project Head Start. Washington, D. C.: Office of Child Development (Dept of HEW), March 1973. 22 pp. (ED 111 522, $1.58 papercopy, $0.76 microfiche)

Records progress, current status, and future plans of the Office of Child Development in making Head Start services available to handicapped children in an integrated setting. Report includes history of legislation in this area, and information on services provided to children through Head Start.

16. Helsel, Elsie D., Sherwood A. Messner, and L. Leon Reid. Opening New Doors to the Cerebral Palsied Through Day Care and Development Centers. New York: United Cerebral Palsy Associations, Inc. (66 East 34th Street, 10016), n.d.

This booklet was written for UCPA affiliates who are operating or about to initiate day care or development centers for severely and multiply handicapped individuals. The booklet presents information on administrative considerations, evaluation of participants, day care programing, developmental classes programing, special considerations in developmental programing for adults, staffing, and services to parents.

17. Hodges, W. L., B. R. McCandless, and H. H. Spicker. The Development and Evaluation of a Diagnostically Based Curriculum for Preschool Psychosocially Deprived Children. Bloomington, Indiana: Indiana University School of Education, 1967.

18. Hoffman, D., J. Jordan, B. Moore, and F. McCormick, editors. Parent Participation in Day Care: Principles and Programs. Atlanta, Georgia: Avatar Press (P. O. Box 7727, 30309), 1971.

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#21. Jordan, June B., and Rebecca F. Dailey. Not All Little Wagons are Red: The Exceptional Child's Early Years. Reston, Virginia: Council for Exceptional Children (1920 Association Drive, 22091), 1973.

This publication is a product from the Invisible College Conference on Early Childhood Education and the Exceptional Child. Five main topic readings comprise the book: Rationale and Historical Perspective for Early Intervention; Identification of Children Needing Special Help; Program Models and Resource Materials; Training of Personnel; and Initiating and Implementing Change. Fourteen papers are included in the five sections.

22. Karnes, M. B. Evaluation and implications of research with young handicapped and low-income children. Compensatory Education, Ages 2-8: Recent Studies of Educational Intervention, J. C. Stanley, editor. Baltimore, Maryland: The Johns Hopkins University Press, 1973.

23. La Crosse, Edward Lloyd. A survey of ARC sponsored day care centers for mentally retarded children in the United States: a guide for present and future programs. Doctoral dissertation. New York: Columbia University, 1964. 128 pp.

*24. Martin, Robert Wesley, editor. The Implications of Recent Research in Early Child Development for Special Education. Proceedings of Special Study Institute. Albany, New York: New York State Education Department, Special Education Instruotional Materials Center, 1973. 200 pp. (ED 096 796)

*25. Moore, Caroline, editor. Preschool Programs for Handicapped Children: A Guidebook for the Development and Operation of Programs. Eugene, Oregon: University of Oregon Regional Resource Center for Handicapped Children, 1974. 77 pp. (ED 112 595 $4.43 papercopy, $0.76 microfiche)

This is a guidebook for school administrators, teachers, and parents about preschool programing for handicapped children. Topics covered include screening procedures, funding, staffing, certification and licensing, facilities, and family involvement.

26. North, A. F., Jr., editor. Child Development/Day Care Health Services: A Guide for Project Directors and Health Personnel. Washington, D. C.: Superintendent of Documents, U. S. Government Printing Office (20402), 1972.

27. Office of Child Development. Child Development/Day Care: Serving Special Children. Washington, D. C.: Superintendent of Documents, U. S. Government Printing Office (20402), 1972.

28. Parker, R. K., and E. Dittman, editors. Child Development/Day Care Staff Training. Washington, D. C.: Superintendent of Documents, U. S. Government Printing Office (20402), 1972.

29. Parker, R. K., and S. R. Ambron, editors. Child Development/Day Care Serving Preschool Children, Volumes I and II. Washington, D. C.: Superintendent of Documents, U. S. Government Printing Office (20402), 1972.

@30. The Problem is Growing--What are We Waiting For? A report of a conference on early intervention with high-risk infants and young children, University of North Carolina-Chapel Hill, May 5-8, 1974. Department of HEW Publication No. (OHD) 75-21011. Washington, D. C.: The President's Committee on Mental Retardation (20201), 1975. 25 pp.

This conference was jointly sponsored by the President's Committee on Mental Retardation and the Association for Childhood Education International. Presentations concerned research, demonstration projects, and application of current knowledge in the area of early detection and stimulation of children with mental disability.

*31. Rembolt, Raymond R., and Beth Roth, compilers. Cerebral Palsy and Related Developmental Disabilities--Prevention and Early Care: An Annotated Bibliography. Volumes 1-3. Columbus, Ohio: National Center on Educational Media and Materials for the Handicapped, 1975. Available from Publication Sales Division, Ohio State University Press, 2070 Neil Avenue, Columbus, Ohio, 43210 ($6.50 for 3 volumes). (ED 111 160, ED 111 161, ED 111 162 $0.76 each microfiche; not available from EDRS in paperdopy).

The three volumes in this projected series of four contain a total of almost 2,000 annotations (before 1964 until 1973) related to prevention and early care for children under two years with cerebral palsy or a similar developmental disability.

32. Rothenberg, Donna. Early Childhood Education: Status, Trends, and Issues Related to Electronic Delivery. St. Louis, Missouri: Washington University, 1973.

+33. Schaer, Hildegard F., and W. Donald Crump. Teacher involvement and early identification of children with learning disabilities. Journal of Learning Disabilities, 9(2): 91-95, February 1976.

Reviews programs geared to early intervention, stressing the teacher as key person in early identification and diagnosis.

@34. Wharry, Rhoda A. In Time and Space. San Rafael, California: Academic Therapy Publications (1539 Fourth Street, 94901), 1975. 233 pp.

The pre-school program of Huntsville (Alabama) Achievement School, in existence for six years, is described in this book. The program is for neurologically and perceptually/motorically impaired children. Philosophy, programs, equipment and materials, staffing, and evaluation are outlined to assist others who wish to develop such a preschool program.

35. Weikart, D. P., D. J. Deloria, S. A. Lawser, and R. Wiegerink. Longitudinal Results of the Ypsilanti Perry Preschool Project. Report for Project Number 2494, Grant Number OE 4-10-085. Washington, D. C.: Office of Education (Department of HEW), 1970.

## GROWTH AND DEVELOPMENT OF CHILDREN: GENERAL INFORMATION

Growth is defined as physical or behavioral change based on innate processes, while development implies increasing control of the physical, emotional, and intellectual self based upon interaction with the environment. Non-handicapped children follow a somewhat predictable pattern of growth and development, marked, of course, by certain variations and individual differences. Understanding of this pattern is necessary to similarly understand the handicapped child.

### Characteristics of the One to Two Year Old

Physical/Motor Development

-rapid physical changes
-trunk and legs becoming more proportionate to head size
-teeth appear
-stands with help; begins to walk and climb on things
-picks objects up; stacks objects
-can throw small ball
-scribbles

Intellectual Development

-gains realization of permanence of objects
-acts out situations; is imitative
-sorts and groups objects
-says first word; talks in jargon
-makes expressive sounds
-understands simple commands

Social/Personality Development

-beginnings of autonomous behavior (realizes there is a choice)
-enjoys self absorbed play
-very curious; likes to explore

### Characteristics of the Two to Three Year Old

Physical/Motor Development

-rapid growth
-runs; enjoys rough-house play
-kicks and throws a ball
-climbs steps two feet on each step
-turns doorknob; turns pages of book one at a time
-builds towers of blocks
-scribbles horizontally and vertically
-feeds self

Intellectual Development

-assigns meaning to previous sensory experiences
-identifies pictures
-uses three to four word sentences
-enjoys rhymes

Social/Personality Development

-fully realizes own autonomy
-negativistic
-enjoys both solitary and parallel play
-displays emotions (claps hands, squeals, laughs)
-enjoys praise

## Characteristics of the Three to Four Year Old

Physical/Motor Development

-runs, jumps; tries anything
-rides tricycle
-stands on one foot for a second
-scribbles become circular
-declining growth rate
-alternates feet when climbing stairs

Intellectual Development

-knows a few colors
-sings songs
-attaches meaning to objects; begins to perceive
-does small puzzles
-formulating lots of ideas
-improving body image concepts

Social/Personality Development

-interested in things outside self
-begins group play; needs companions
-increased imaginative play
-knows right from wrong
-acquiring fears
-knows difference between boys and girls

## Characteristics of the Four to Five Year Old

Physical/Motor Development

-runs, hops, climbs easily
-rides tricycle easily and well

-likes rough and very active play
-stands on one foot for several seconds
-holds pencils, crayons, brushes in adult manner
-uses scissors well
-throws a ball overhand
-cannot stay within lines when coloring

Intellectual Development

-knows several colors
-can count fingers
-talks constantly
-endlessly questions everything
-imitative and dramatic
-begins deductive thinking
-may swear and use nonsense words
-likes to be read to; enjoys nursery rhymes
-sense of time beginning
-understands analogies
-has difficulty separating fact from fabrication

Social/Personality Development

-has imaginary playmates; likes to pretend
-active imagination; acquiring new fears
-plays with other children, preferably own sex
-can leave mother and extend life into neighborhood
-very independent; asserts self
-very self-confident in ability to do anything
-moral judgments beginning
-shows love for parent of opposite sex

## The Handicapped Child

Handicapped children share many of the same growth characteristics of non-handicapped children. Their development, however, is not so similar, primarily due to the fact that the child's handicap prevents him/her from interacting with the environment in the way that a non-handicapped child can. It is recognized that the majority of any child's early learning experiences are motor or physical in nature (2,6,13,15); the restrictions of a handicap theoretically should impede the child's experiences and, subsequently, development.

Studies have for the most part substantiated this theory. Research conducted with young blind children (1,7,9,17) has indicated that, without intervention, these children exhibit deficits in gross motor development and information-gathering ability. Mentally retarded preschool-age children, too, have been found to have deficits in motor, adaptive, social, language, physical, and play development (3,10,16). Studies of children with other handicapping conditions, such as multiple impairments (4,14), hearing impairment (8), and cerebral palsy (11) yielded similar conclusions. An equally alarming finding of these research efforts is that not only does the handicapped child lag behind

the non-handicapped child in almost all aspects of development, but, without intervention, the child's abilities deteriorate even further with increasing age (1,3).

Early intervention through programs of physical education, recreation, language and speech, sensory stimulation, and self-care skills can help the handicapped child in making developmental gains characteristic of his or her chronologic age level. Subsequent sections of this publication will more fully cover roles and values of the recreation and physical education/perceptual-motor components of early intervention programs.

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Gross motor development of blind children studied by Norris (1957) was compared with that of ten blind infants (C.A. = 1-11 months) who participated in a developmental guidance program. The program aimed at building into earliest experience a sound-touch identity for people and things, through talking with the child often and making many sound-toys readily available to the child. Results suggested that blindness plays a more central role in establishment of mobility and locomotion than it does in establishment of stable postures. Children in the developmental program showed an age advantage in gross motor achievements, compared to the Norris group, and this advantage increased over time.

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+3. Dicks-Mireaux, M. J. Mental development of infants with Down's syndrome. American Journal of Mental Deficiency, 77(1): 26-32, July 1972.

Gesell test was administered five times to normal and Down's syndrome infants. In each of the three areas of the test--motor, adaptive, and social--Down's syndrome group showed significantly lower developmental quotient (DQ) than normal infants by age 16 weeks. Down's infants not only showed a slower than normal rate of development, but one which deteriorated between the ages studied (16 weeks and 18 months).

4. Gralewicz, Anne. Play deprivation in multihandicapped children. American Journal of Occupational Therapy, 27(2): 70-72, March 1973.

Parents kept records of their multihandicapped (N = 10) and non-handicapped (N = 11) preschoolers for three days. Multihandicapped children had less play time and fewer playmates; non-handicapped children had significantly more time to play with others and more related adult playmates.

5. Halliday, Carol. The Visually Impaired Child: Growth, Learning, Development. Infancy to School Age. Louisville, Kentucky: American Printing House for the Blind (1839 Frankfort Avenue, 40206), 1970. Free on request to parents of a visually impaired child.

6. Kephart, Newell C. The Slow Learner in the Classroom, 2nd edition. Columbus, Ohio: Charles E. Merrill Publishing Company, 1971.

+7. Kephart, John G., Christine P. Kephart, and George C. Schwartz. A journey into the world of the blind child. Exceptional Children, 40(6): 421-427, March 1974.

The Kephart scale was administered to five to seven year old blind (N = 49)

and sighted (N = 37) children in residential facilities across the country. Blind children were found to be limited in information-gathering ability, which is apparently not compensated for by auditory and tactual processes.

*8. Kretschmer, Richard R. A Study to Assess the Play Activities and Gesture Output of Hearing Handicapped Pre-School Children. Final report. Cincinnati, Ohio: Cincinnati Speech and Hearing Center, 1972. 267 pp. (ED 071 247)

Play habits and social interaction styles of hearing impaired (N = 71) and normal (N = 71) preschoolers were studied individually by videotape. Evaluation of videotapes indicated that hearing impaired children were more active, displayed more scanning behaviors using all sensory modalities, displayed more fearful behaviors, and engaged in little actual play. Hearing impaired groups of children were less cohesive and produced fewer successful social contacts that normally hearing children.

9. Lowenfeld, B. The pre-school blind child and his needs. Exceptional Children, 20: 50-55, 1953.

10. McConkey, R., and Dorothy Jeffree. Pre-school mentally handicapped children. British Journal of Educational Psychology, 45: 307-311, November 1975.

Information was collected about 105 mentally retarded children under age five. Many had other disabilities, and all were significantly retarded in physical, social, play, and language development. Detailed tables show the children to, in fact, be multi-handicapped. Management of problems is discussed.

*11. Melcer, Donald, and Robert F. Peck. Sensorimotor Experience and Concept Formation in Early Childhood. Final report. Austin, Texas: Texas University, 1967. 90 pp. (ED 019 143 $3.29 papercopy, $0.65 microfiche)

Normal and cerebral palsied children were compared for the acquisition of simple action and object concepts. Forty children (CA = 42-66 months) were given four tests (Peabody Picture Vocabulary, modified PPV, weight discrimination, adaptive mode). Results lend considerable support to theories that sensorimotor experience in infancy is an important factor in concept formation. Suggest that cerebral palsied children be given specially designed educational programs.

*12. Nelson, Monte, and Jean L. Pyfer. Contemporary theories of perceptual-motor development, 1973. (ED 100 489 $1.85 papercopy; $0.75 microfiche)

Analyzes literature dealing with contemporary theories of perceptual-motor development and dysfunction. Studies reviewed focus on delays, deviations, cause, theories of development, and programs of remediation.

13. Piaget, Jean. The Origins of Intelligence in Children. New York, New York: International Universities Press, Inc., 1966.

14. The preschool deaf-blind child. New York, New York: American Foundation for the Blind (15 West 16th Street, 10011), 1969. 8 pp.

15. Richardson, Sylvia O. Concerns of the pediatrician for motor development. Foundations and Practices in Perceptual-Motor Learning: A Quest for Understanding. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation, 1971. pp. 17-19.

+16. Share, Jack B., and Ronald W. French. Early motor development in Down's syndrome children. Mental Retardation, 12(6): 23, December 1974.

Sixteen motor landmarks from Gesell Developmental Schedules were selected for study. Specific motor development landmarks of Down's syndrome children in their first five years of life are discussed.

+17. Warren, David H. Blindness and early development: what is known and what needs to be studied. New Outlook for the Blind, 70(1): 5-16, January 1976.

The deficiencies in research about comparative development of blind and sighted children are pointed out. Research that has and should be done is discussed in: perceptual-motor, cognitive, language, social, and personality development.

## EARLY INTERVENTION THROUGH RECREATION/PLAY

Recreation is commonly used as a tool of early intervention programs for enhancing various aspects of the handicapped child's development. Recreation, or play, is generally considered to have the following purposes for handicapped children: (1) improved knowledge of self and others through interaction with others, (2) development of adaptive behaviors needed to effectively cope with environment, (3) removal from a success-failure situation to a self-controlled situation, (4) means of self-expression, and (5) opportunity to adopt roles of others, leading to enlarged repertoire of behaviors and greater understanding of acceptable behaviors. In addition, through participation in carefully selected games and activities the child's physical, motor, language, cognitive, and social/emotional development may be enhanced.

Unfortunately, however, in most instances recreation is used only as a tool, rather than being recognized as a necessary part of the child's life in itself. Tait notes that so-called free play is usually "prescribed toys set out in a prescribed arrangement for a prescribed period of time" (32, p.10) rather than voluntary, untimed fun. As adults, this attitude is carried over to imply that recreation (formerly called play) is less important than work and that leisure hours should be filled with some type of productive activity.

The fact is that most handicapped children have to be taught to recreate. Their play skills often tend to be limited, due either to the nature of their handicap or due to limited opportunities for exploration. Additionally, the physical or mental handicap can create some difficulties in participating in conventional recreation activities. The fact that, as an adult, the handicapped individual may have increased amounts of leisure time is a further reason for teaching the individual to play and enjoy free time during childhood.

The majority of citations in the bibliography concluding this section deal with recreation as a vehicle for development in other areas: emotional development (3,16,33); intelligence (5,15,33); socialization (5,16,29,30); physical/perceptual-motor development (5,28,35); neurological organization (8); self-concept (8); academic concepts (8,14,21,22,24,25,28); communication and language (9,10,12,18,21,22,26,33). There are five citations (16,20,27,32) that explore the need for training handicapped children in play, or that stress the values of play in itself (4).

Research and writings on the values of recreation for young handicapped children have primarily been concerned with mentally retarded children (3,5,6, 15,16,19,20,24,25,26,27,29). There is no depth of literature focusing on any other group of handicapped children, although the bibliography in this section includes some citations on recreation/play for visually impaired (1,31,33), cleft palate (9), multiple handicapped (17,23,28,35), disadvantaged (18), deaf (21), and behavior disordered (30) children, as well as handicapped preschoolers in general (2,10,11,12,13,14,32).

Various ways of providing recreation for young handicapped children have been explored. Playground activities (2), aquatics/swimming (8,14,28), dramatics (9,18,21,29,30), camping (23,31,35), and music (16) are among the methods used.

Very highly specialized recreation activities in training centers have also been utilized to yield specific results in handicapped preschoolers (3,5,24,25,32). Recently, parental involvement in the child's play has been recognized as highly important, and parent-training techniques (1,19,20), and mobile units (26) have been tried. Toy-lending libraries, which originated in and were popularized by Sweden, are being found all around the United States (7,11,13,22). These centers are associated with public libraries and make a variety of toys available to young children and their parents, visualizing their purpose as provision of educational materials for children too young to read as well as children who can read and make use of books.

## Research Needs

The whole area of play and its benefits, values, and necessity for preschool handicapped children has only begun to be explored. Therefore, much general research about play needs to be done. More specifically, research efforts should be directed toward the development of play skills in handicapped children. For example:

- What play skills are handicapped children deficient in; what specific needs do children with specific handicapping conditions have, in relation to development of play skills.
- Identify models for training handicapped preschoolers to play; develop such a model, if needed.
- How has education/training in childhood better prepared the handicapped adult for satisfying use of leisure time.

Recognizing that recreation can contribute to other aspects of the handicapped child's total growth and development, more methodological research efforts are needed to fully clarify recreation's role in early intervention programs:

- What kinds of recreation activities stimulate specific aspects of the handicapped preschooler's development; how do the values of activities differ when presented to children with different types of handicaps.
- What are the long-range effects of early intervention through recreation, in terms of continuing effects on the child's development.
- Compare and analyze effects of recreation programs that involve parents and those that do not.
- Compare and analyze effects of recreation programs conducted by specially trained recreators with those conducted by individuals from other disciplines.

## Bibliography


+1. Barry, M. Adelaide. How to play with your partially sighted preschool child: suggestions for early sensory and educational activities. New Outlook for the Blind, 67(10): 457-467, December 1973.

A visual stimulation program should be based on maturational pattern of the child and be designed to be perceptually reinforcing through the use of rattles or a jumping seat. Activities for different age levels are given.

+2. Bowers, Louis. Play learning centers for preschool handicapped children. Physical Activity: Programs and Practices for the Exceptional Individual. Fourth national conference, November 14-15, 1975. Downey, California: The Alliance (Office of Los Angeles County Superintendent of Schools, 9300 East Imperial Highway, 90242), 1975, pp. 27-29.

Briefly describes a research study involving handicapped children's use of three playgrounds. Videotape analysis of play indicated that children used playground equipment over 95% of the time they were there. No injuries occurred under minimal supervision. Long range study is planned.

3. Bradtke, Louise M., et al. Intensive play: a technique for building affective behaviors in profoundly mentally retarded young children. Education and Training of the Mentally Retarded, 7(1): 8-13, February 1972.

Intensive play is the building, through close body contact and physical stimulation, of positive responses to normally pleasurable experiences. It was developed to break through the barriers of unresponsiveness, unawareness, and fearfulness that often characterize profoundly mentally retarded young children. Specific activities for one child are given.

4. Bruner, J. S. Play is serious business. Psychology Today, 8(8): 81-83, 1975.

Play serves a critical function in the development of adult competence, and this function becomes more critical as one moves up the evolutionary scale. Research with humans and primates is discussed. Play has been found to be a stimulant to adult creativity and the first carrier of the rule systems that ultimately structure and govern behavior.

5. Chaney, Rex. The effects of a selected recreational activity on the I.Q. scores, social adjustment, and physical coordination of the educable mentally retarded child. Doctoral dissertation. Bloomington, Indiana: Indiana University, 1969. 132 pp.

6. Conover, Darlene K. Object preference and resulting movement behaviors of three-to-seven-year-old custodial and trainable retarded boys. Doctoral dissertation. Columbus, Ohio: Ohio State University, 1973. 197 pp.

Institutionalized TMR boys were exposed to five objects (ball, blocks, climber, inner tube, wagon) to determine object preference and types of

movement behaviors exhibited. As a group, children exhibited no preferences. However, individuals did exhibit preferences, leading author to note that retarded children's development will be best enhanced if the environment is equipped with preferred and selected objects.

7. Hektoen, Faith H., and Jeanne R. Rinehart. Toys to Go: A Guide to the Use of Realia in Public Libraries. Hartford, Connecticut: Faith Hektoen, Connecticut State Library (231 Capitol Avenue, 06115), 1975. 28 pp. $3.00.

Realia are toys, articles, and other objects that the child manipulates or plays with. Libraries can assist parents in the selection of learning and experiental materials for their children too young to read. Describes realia programs in Connecticut libraries, administrative concerns, and lists realia suitable for the public library to acquire.

8. Hoopes, Amy T. Splash! Academic Therapy, 10(1): 115-116, Fall 1974.

A water safety instructor views swimming as an educational tool for fostering neurological organization, academic/readiness, and a positive self-concept in early childhood.

9. Irwin, Eleanor C., and Betty Jane McWilliams. Play therapy for children with cleft palates. Children Today, 3(3): 18-22, May-June 1974.

Children with cleft palates show deficiencies in use of expressive language which grow worse as children grow older. The National Institute of Dental Research sponsored 32 play sessions for 11 children between three and six years old, two hours per week for eight months. Program included movement and rhythm, pantomime and dramatics, role playing of nursery rhymes, and stories. Each child was tested as to use of pantomime, speech patterns, and nature of role playing before the program. Results indicated that children's verbal skills and willingness to participate in group activities improved significantly through the program.

#10. Jeffree, Dorothy, and Ray McConkey. Extending language through play. Special Education: Forward Trends, 1(3): 13-16, September 1974. (EC 070 137)

*11. Junker, Karin Stensland. Lekoteket: A Program for Training Through Systematic Play Activity. Stockholm, Sweden: Lekoteket Pa Blockhusudden, 1971. 16 pp. (ED 052 575 $3.29 papercopy, $0.65 microfiche)

Describes the purposes and activities of the lekotek, a toy-library. Handicapped children and their parents visit the lekotek, and free toys and educational tools are selected with regard to each child's level of functioning. Children go on to new toys that are increasingly more complex.

12. Kniest, John H. The therapeutic value of toys in a training center for handicapped children. Rehabilitation Literature, 23(1): 2-7,30, 1962.

Reports a study carried out to determine the values of toys in helping

handicapped children achieve treatment and training objectives. Toys were found to have a valid place in a rehabilitation, treatment, or training center as a means of communication with children and as an aid to improving skills.

13. Lambie, Ruth. How Sweden trains handicapped children. Journal of Home Economics, 67(5): 13-18, September 1975.

Toy-library centers (lekotek) use play and toy training to stimulate development of handicapped children. Staff, equipment, evaluation techniques, and prospects for a U. S. toy-library program are discussed.

@14. Lawrence, Connie Currie, and Layne C. Hackett. Water Learning: A New Adventure. Palo Alto, California: Peek Publications (Box 11065, 94306), 1975. 104 pp.

Equipment and directions for a variety of water play activities are presented in this book. Water activities can meet the needs of handicapped children and reinforce concepts taught in the classroom.

15. Leland, Henry, John Walker, and Adoniram Nieves Taboada. Group play therapy with a group of post-nursery retardates. American Journal of Mental Deficiency, 63(5): 848-851, 1959.

Eight mentally retarded boys with behavior problems (CA = 4 to 9 years) participated in 90 hours of group play therapy over one month. Vineland Scale and WISC were administered before and after the program. No major changes in social maturation occurred, but data suggest that the experience did activate some intellectual potential that was untapped before play therapy.

16. Lesak, Eleanor. Music activities for the severely mentally retarded and pre-school mentally retarded. Mental Retardation: Selected Conference Papers, R. C. Scheerenberger, editor. Springfield, Illinois: Illinois Mental Health Department, 1969. pp. 97-101.

Music activities can help mentally retarded children occupy leisure time, become better adjusted, and learn appropriate social behavior. Since music offers a nonverbal means of communication, it provides one method of establishing contact with non-verbal and preschool mentally retarded children.

17. Lovell, Linda M. The Yeovil Opportunity Group: a play group for multiply handicapped children. Physiotherapy, 59(8): 251-253, August 1973.

Describes a therapeutic play group led by a trained teacher of mentally retarded children and several adult volunteers. The group is designed to stimulate developmentally disabled children (caused by cerebral palsy, spina bifida, blindness, mental retardation) through physical therapy and various activities. Children between six months and five years old participate.

18. Lovinger, Sophie L. Socio-dramatic play and language development in preschool disadvantaged children. Psychology in the Schools, 11: 313-320, July 1974.

+19. Mash, Eric J., and Leif Terdal. Modification of mother-child interactions: playing with children. Mental Retardation, 1(5): 44-49, October 1973.

Five groups of eight to ten mothers were taught to utilize behavior modification principles for the purpose of generating effective play behavior between themselves and their mentally retarded children (CA = 4-10 years). Children showed an increase in appropriate play behavior.

20. Mather, June. Make the Most of Your Baby. Arlington, Texas: National Association for Retarded Citizens (P. O. Box 6109, 76011), 1974. Free.

Tells how parents can provide meaningful play experiences for their mentally retarded infant by being aware of the sequential nature of early childhood development.

21. McDermott, Elisabeth F. Storytelling--a relaxed and natural path to lip-reading, language, and reading. Volta Review, 73(1): 54-57, January 1971.

Techniques for storytelling with deaf preschoolers are explained. Preparation for learning to read is emphasized. Author lists books liked by young children.

22. Nimnicht, Glen P., and Edna Brown. The toy library: parents and children learning with toys. Young Children, 28(2): 110-116, December 1972.

Describes a parent/child course offered in conjunction with the Toy Library at Far West Laboratory for Educational Research and Development, aimed at helping parents provide significant educational experiences for their preschool children. Toys utilized are designed to teach fundamental concepts and skills, promote verbalization, and develop problem-solving.

23. Paprocki, Bo. A Day Camp Model for the Pre-School and the Multiply Handicapped Child. Morton Grove, Illinois: Julia S. Molloy Education Center, 1973.

This manual is intended to give guidelines for planning and providing day camp programs for very young retarded (moderately to severely) children and for multiply handicapped children who have physical and mental handicaps. Contents of the manual include philosophy and description of program, administration, and activities.

*24. Ross, Dorothea. The Use of Games to Facilitate the Learning of Basic Number Concepts in Preschool Educable Mentally Retarded Children. Stanford, California: Stanford University, 1967. 91 pp. (ED 023 243)

An experimental group of seven year old educable mentally retarded children participated 100 minutes per week in a nine-month game program. A control group attended a traditional math program. Experimental group

scored higher on both mid-experimental and post-experimental Number Knowledge Test and made fewer errors on mid and posttests on General Game Skills. Teaching techniques, tests, and a handbook on teaching game skills are included in the report.

25. Ross, D. Incidental learning of number concepts in small group games. American Journal of Mental Deficiency, 74(6): 718-725, May 1970.

Educable mentally retarded children (N = 40; C.A. = 53 to 119 mos.; XIQ = 66.23) were randomly assigned to experimental (E) and control (C) groups and were given the Number Knowledge Test and General Game Skills Test. Es received 100 minutes/week of small group games (card games, guessing games, board games, active racing games) in which number concepts were introduced incidentally; Cs were taken out of the classroom 100 minutes/week for small group activities. The E group showed significantly higher posttest scores than C group on all subtests of Number Knowledge Test and on the Game Skills Test.

*26. Rynders, John E., and Margaret Horrobin. A Mobile Unit for Delivering Educational Services to Down's Syndrome (Mongoloid) Infants. Research Report #30. Minneapolis, Minnesota: Minnesota University, 1972. 28 pp. (ED 071 242)

A mobile unit was used over 2½ months to demonstrate the advantages of a mobile tutoring program for eight 12-18 month old infants with Down's syndrome. Curriculum emphasized language stimulation through finger plays, music, art, tea parties, sandbox activities, and water play. Seven of the children adapted readily to this learning environment.

27. Sessoms, H. Douglas. The mentally handicapped child grows at play. Mental Retardation, 3(4): 12-14, August 1965.

Assesses the role of play in growth of mentally retarded children. Mentally retarded children derive the same benefits and basically enjoy the same play activities as normal children. Reviews literature on play patterns of retarded children and stresses need for training in play.

+28. Sexton, David, and Jerry Robison. Water play for multihandicapped children. The Pointer, 20(1): 62-64, Fall 1975.

The Early Education for Multihandicapped Children Project at Whitten Village serves 25 institutionalized two to ten year old moderately to severely mentally retarded children who also have one or more physical handicaps. Water play has been used successfully in providing tactile stimulation and teaching colors and concepts of volume and weight.

+29. Strain, Philip. Increasing social play of severely retarded preschoolers with socio-dramatic activities. Mental Retardation, 13(6): 7-9, December 1975.

Study tried to determine whether the presentation of socio-dramatic activities would function to increase the amount of social play exhibited

by severely retarded preschool children during a free-play period. Results suggested that the opportunity to engage in socio-dramatic play activities and increased social play were functionally related.

+30. Strain, Phillip S., and Ronald Wiegerink. The effects of sociodramatic activities on social interaction among behaviorally disordered preschool children. Journal of Special Education, 10(1): 71-75, Spring 1976.

Observations were made of 12 behaviorally disordered preschoolers (CA = 40-56 months) during a story period and a free play period. Observations were also made during periods when the teacher assigned children roles to play during the storytelling, which was followed by a free play period. Results indicated that increases in amount of social play were observed only during periods when the teacher assigned children sociodramatic roles and prompted role behavior. This intervention procedure clearly requires less teacher time and individual attention than intervention strategies utilizing contingent teacher attention.

+31. Sykes, K. C. Camp Challenge: program for parents and their preschool children with visual handicaps. New Outlook for the Blind, 68(8): 344-347, October 1974.

The primary aim of this annual six-day community action program is to provide parents with information and assistance concerning their child's needs. Children participate in camp activities and a learning program while parents attend workshop.

+@32. Tait, Pearl E., Carol Kessler, and Dianne Manfredini Ferrara. Use of the play development technique with handicapped children. 40 pp. $4.00

This paper offers a theoretical basis for use of play with handicapped children. Elements of play and a description of the Play Development Technique currently in use with various handicapped children are presented. Case studies illustrate the use and effectiveness of the Play Development Technique.

+33. Tait, Pearl. Play and the intellectual development of blind children. New Outlook for the Blind, 66(10): 361-369, December 1972.

Reviews research related to the role of play in the intellectual development of blind children. Play of blind children is limited, although play can have values in language development, cognizance of reality, and emotional growth. Fostering of spontaneous play activities may be necessary for blind children prior to meaningful academic learning or satisfactory life adjustment.

34. Wells, Marian E. Preschool play activities and reading achievement. Journal of Learning Disabilities, 3(4): 214-219, April 1970.

Statistically significant differences were found between achieving and underachieving readers in the amount of time spent outdoors in winter and in the amount of time spent in outdoor play with mother and father,

with underachievers having spent more time in both areas. Data suggest that factors other than preschool play activities investigated account for reading achievement.

+35. Wolpert, Rhona, Sharon Leuchter, and Margaret Schmidt. Summer day camp for multihandicapped children. Physical Therapy, 56(3): 299-304, March 1976.

A six-week enriched sensorimotor, communication, and recreational summer day camp for 20 multiple handicapped children is described. The program provided training for students who worked as counselors. The Functional Skills Profile (FSP), an assessment battery designed by physical and occupational therapists to measure performance changes in low functioning, developmentally handicapped persons, was used. Children made major gains in several areas, most notably play and basic motor skills.

## Addendum

36. Ellis, M. J. Why People Play. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973. 173 pp.

This book is about various answers to the questions "What is play?" and "Why do people play?" It is designed to influence provisions for play in homes, day-care or child development centers, schools and adult leisure services. After a brief overview of problems inherent in attempting to manage play and a discussion of arguments on either side of this issue, a working definition of "play" is established. Classical theories of play are analyzed and subjected to critical examination and their value is related to modern behavioral scientists and practitioners. The crucial role that children's play behavior plays in early development programs for disadvantaged children is shown. Implications of day care centers, trends toward open classrooms and less formalized curricula, and the vast strides made in learning-through-play research are explored. From his careful analysis of the literature and experimental research in play, the author develops a logical-theory of play as arousal-seeking. A list of references, subject index and an author index are included.

# EARLY INTERVENTION THROUGH PHYSICAL EDUCATION/PERCEPTUAL-MOTOR EXPERIENCES

Perceptual-motor activities are commonly provided in physical education programs to enhance the student's visual-perceptual, body image, manipulative, and locomotor development. Physical therapy and occupational therapy programs, too, include activities that emphasize various aspects of perceptual-motor development. Since so much of early learning is perceptually or motorically based, it is particularly important for early intervention programs to facilitate in some way the young handicapped child's perceptual-motor development. The remediation of problems in this area of development and the provision of activities so that each child develops to his or her fullest potential can have remarkable consequences--reading readiness may be facilitated, sports and recreation skills may be acquired, academic skills such as writing and knowledge of basic concepts may be enhanced, and general self-concept may be improved.

With particular reference toward physical education, an individualized program of large-muscle physical activity can have enormous implications for later patterns of activity. When started young in life, good physical fitness habits of any child have a better chance of developing and being maintained. Handicapped children, who have a greater tendency to choose sedentary pastimes, have even more to gain from early physical education, physical fitness, and physical activity. The most obvious gain is in overall physical development and health. Other equally important gains concern development of physical activity habits and acquisition of skills for lifetime sports and recreation participation.

The written materials listed in the bibliography at the end of this section all deal with perceptual-motor activities and programs. However, not all go by the same name. By far the largest number of programs are simply called perceptual-motor programs (3,11,12,13,14,15,17,18,19,23,25,27,28,29,30,32,34,41,42). Others were conducted under the auspices of physical education/adapted physical education (2,4,6,9,33,35,36,37,38), sensory-motor stimulation (7,8,10,16,28,31, 39,40,43), or occupational therapy (20,21,26). By whatever name they are known, these program have been found to enhance overall development of the handicapped preschooler (20,28,36), auditory perception (2), performance IQ (3,33,39,40), motor development (4,11,12,16,23,28,29,33,41,43), behavior (6), language (12,16, 28,33), socialization (16), and self-expression (17). In addition perceptual-motor activities have facilitated development of necessary sports skills (36, 37,38) and have prevented postural abnormalities (5,24). No improvement after participation in perceptual-motor or physical education programs was noted in four studies (13,15,18,27).

Four studies have explored the importance of sensory stimulation in counteracting the effects of institutionalization (7,8,39,40). In particular the Skeels 1939 study and its follow-up investigation in 1965 illustrated the lasting effects that simulation directed at all the child's senses can have: All children originally studied in 1939 were contacted over 25 years later. Results indicated that experimental children had a better chance of being adopted or leaving the institution another way, and they subsequently had better chances of going to school, getting married, and becoming self-supporting. Almost half of

children who did not receive sensory stimulation were still institutionalized, and their median level of education was third grade.

Most studies of perceptual-motor and physical education experiences for young handicapped children have been conducted with mentally or culturally retarded children (6,9,12,16,20,23,28,32,33,36,37,38,39,40,43). Other studies and programs have been directed toward learning disabled (3,29), cerebral palsied (1,5,22,24,25,32,41), minimally brain injured (6,9,11,33), visually impaired (7,14,31,34), multiply handicapped (21,32), and perceptually or motorically impaired children (2,13,17,26,27). Limited investigation has concerned effects of these programs on neurologically impaired (15), orthopedically handicapped (18), and developmentally delayed (19) preschoolers.

## Research Needs

Research beginnings concerning the effects and values of early physical education and perceptual-motor experiences on handicapped children are encouraging. Questions requiring more concentrated research efforts are:

- Beginning at what age are early intervention programs of physical education/perceptual-motor activities the most effective.
- How long should an intervention program last; what tests and assessment devices need to be developed to measure best length of intervention.
- What specific perceptual-motor activities should the program include.
- How can physical education programs involving numerous children be better individualized to meet each child's specific needs.
- Who is best qualified to provide physical education for young handicapped children (physical educator, adapted physical educator, physical therapist, special educator, recreator); what competencies does the physical educators require to work with young handicapped children.

## Bibliography


+1. Banham, Katharine M. Progress in motor development of retarded cerebral palsied infants. Rehabilitation Literature, 37(1): 13-14, January 1976.

Cerebral palsied infants and preschoolers (60 retarded, 11 non-retarded), some of whom had surgery and some on a home training program, were compared as to motor development. All children showed slow progress in motor development over 12 to 18 months, with slightly more progress shown by children who had surgery. Maturity level of play interests was found more positively related to mental than motor development.

2. Barker, Meredith Ann. A study to determine if auditory perception may be improved through participation in an adapted physical education program of selected activities. Master's thesis. Springfield, Massachusetts: Springfield College, 1974. 75 pp.

Children ages five to eight years with no physical disabilities but who scored below normal on the Wepman Auditory Discrimination Test participated in the study. An experimental group had adapted physical education designed to improve perception, and controls had regular physical education. Experimental group was found to have improved significantly more than controls.

*3. Bechtel, Leland P. The Detection and Remediation of Learning Disabilities. Progress Report. Lewiston, Maine: Androscoggin County, Task Force on Social Welfare, Inc., 1973. 118 pp. (ED 079 878)

Perceptually handicapped preschoolers received daily remediation activities in gross and fine motor training, applied skills, and free play, for one year. Pre and posttests indicated that children made significant gains on performance tests of Wechsler Preschool and Primary Scales of Intelligence. The results of a summer program are also discussed in the report.

4. Bidwell, Dwight R. The effects of selected physical education activities on the development of Head Start children. Doctoral dissertation. Salt Lake City, Utah: University of Utah, 1970. 89 pp. (Available from Xerox University Microfilms, Dissertation Copies, P. O. Box 1764, Ann Arbor, Michigan, 48106. Order No. 71-925.)

Head Start children receiving physical education activities (N = 44; CA = 50-64 months) and a matched control group participating in free play were compared in certain developmental areas. Physical education activities involved locomotor and non-locomotor skills, apparatus and tumbling skills, and ball skills. Group participating in physical education made significantly greater developmental gains than control group.

5. Bobath, Berta. The very early treatment of cerebral palsy. Developmental Medicine and Child Neurology, 9: 373-390, August 1967.

Stresses that very early treatment (by the age of nine months) of cerebral palsied children will give best results. Treatment must begin before

athetosis and spasticity are strong and abnormal patterns of posture and movement are prevalent. Outlines normal motor development and gives examples of postural patterns that are useful and to be avoided.

6. Broadhead, Geoffrey David. The role of educational physical activity programs in the modification of selected parameters of the behavior of educable mentally retarded children and minimally brain injured children of elementary school age. Doctoral dissertation. University of Wisconsin, 1968. (Available from Xerox University Microfilms, Dissertation Copies, P. O. Box 1764, Ann Arbor, Michigan, 48106. Order No. 69-877, $10.00 papercopy, $4.00 microfilm.)

+7. Carolan, Robert H. Sensory stimulation and the blind infant. New Outlook for the Blind, 67(3): 119-126, March 1973.

To develop properly, any infant must be provided with a rich environment of sensory stimulation. Research in sensory deprivation shows that absence of stimulation has undesirable consequences. The concept of an infant curriculum to be administered by parents is presented, based on Barsch's curriculum.

8. Casler, Lawrence. Supplementary auditory and vestibular stimulation: effects on institutionalized infants. Journal of Experimental Child Psychology, 19(3): 456-463, June 1975.

Supplementary stimulation was supplied for 30 minutes per day for six weeks to 156 normal, full-term institutionalized infants prior to adoption. Gesell Developmental Schedules were administered until age 27 months to determine whether development had been enhanced by treatment.

9. Cavanaugh, John R. A study to determine the effects of a physical education program on educable mentally retarded and minimal brain-damaged children. Master's thesis. Baton Rouge, Louisiana: Louisiana State University, 1968.

10. Chapman, Sedwell. Sensori-motor stimulation for the young handicapped child. Developmental Medicine and Child Neurology, 16(4): 546-547, August 1974.

Discusses considerations in the sensory-motor stimulation of the handicapped infant or preschooler. Reviews a paper by Seifert which stresses the importance of parent involvement in any program of this type.

11. Clark, Sharon E. A comparison of two approaches to presenting two series of locomotor skills to children with minimal brain dysfunction. Master's thesis. Denton, Texas: North Texas State University, 1970. 49 pp.

Individual locomotor skills and locomotor patterns of 39 elementary aged children were evaluated before and after an instructional program in locomotor skills. Children were divided into three groups: those receiving instruction and practice on a mass basis, those receiving distributed instruction, and controls. Both experimental groups made significant gains, with the instructional approach of no consequence.

+12. Connolly, Barbara, and Fay Russell. Interdisciplinary early intervention program. Physical Therapy, 56(2): 155-158, February 1976.

Describes the early intervention program for children with Down's syndrome initiated in 1972 at the University of Tennessee Child Development Center (CDC). Gross motor activities provided by a physical therapist included muscle strengthening, range of motion, sensory and gross motor stimulation, and play activities. Home activities provided by parents included stimulation of muscles with vibrator and sensory stimulation. Gross motor milestones of these children were compared with children not in early intervention programs from another study. Results indicated that Down's syndrome children in the CDC program attained head control, sitting, walking, finger feeding, spoon feeding, and first spoken word earlier than other study participants. In addition, infants who began the early intervention program after six months of age had more noticeable developmental delays than infants started before six months of age.

13. Cornish, R. D. Effects of neurological training on psychomotor abilities of kindergarten children. The Journal of Experimental Education, 39: 15-19, 1970.

Kindergarten children (N = 50) who had been found to have perceptual-motor and/or psychomotor deficits were assigned to an experimental or control group. Children in the experimental group utilized the Exer-Cor three minutes per day for three months. Exer-Cor is a mechanical device that has hand and knee pads riding on rollers and moved by muscular effort. These pads are connected by cables and pulleys in such a way as to ensure proper synchronization of cross-patterning movements. No significant improvements were noted in the experimental group compared to the control group after three months of using Exer-Cor.

14. Cratty, Bryant J. Movement and Spatial Awareness in Blind Children and Youth. Springfield, Illinois: Charles C. Thomas, 1971.

This book about body-image training of blind children contains the following sections: body image, manual identification of objects, orientation to sounds, spatial orientation, improvement of motor efficiency, complex spatial orientation, and mobility training. Each section compares development of blind and sighted children (birth to seven years). Exercises and activities to aid the blind child are given.

15. Doman, R. J., E. B. Spitz, E. Zucman, C. H. Delacato, and G. Doman. Children with severe brain injuries. Journal of the American Medical Association, 174(3): 257-262, 1960.

Every child seen in the Children's Clinic (N = 76; C.A. = 12 months - 9 years) for the duration of this study were evaluated as to level of movement and functional terms of their disabilities. Parents were taught a program of neurological organization to carry on at home, including sensory stimulation, activities to establish dominance, and breathing exercises; children were also encouraged to crawl and creep, and patterns of activity reproducing mobility functions were administered

passively. Authors found significant improvement when they compared results of classic procedures previously followed with the results of these procedures.

16. Edgar, C. L., T. S. Ball, R. B. McIntyre, and A. M. Shotwell. Effects of sensory-motor training on adaptive behavior. American Journal of Mental Deficiency, 73: 713-720, 1969.

An experimental group (E) of organically impaired, mentally retarded children (N = 11; $\overline{XC.A.}$ = 5.6 years; $\overline{XIQ}$ = 34.27) received training in sensory-motor activities 15 to 20 minutes each day, three days a week. Activities, adapted from Kephart, included walking board, trampoline routines on bed springs and mattress, angels-in-the-snow, rhythm (drums and tamborine), balance board, chalk board, and stunts and games. A control group (C) received small group recreation activities for the same amount of time by the same researcher. After eight months both groups were re-evaluated on the Gesell Developmental Schedules. Es showed greater gains than Cs on the Motor, Language, and Personal-Social Schedules, and in total score; all gains were significant. The mean developmental age (DA) gain for Es was 6.0 months; mean DA gain for Cs was only 2.2 months.

*17. Expressive Arts through Perceptual-Motor Development: Final Evaluation 1973-1974. An ESEA Title III Project. Fort Collins, Colorado: Glen Haven Achievement Center, 1974. 49 pp. (ED 114 427 $1.95 papercopy, $0.76 microfiche)

This program provided an expressive arts experience for children in kindergarten through grade three. Perceptual-motor development leading to expression in the arts was the focus of the program. Individualized perceptual training was offered to children with deficiencies in perceptual development. Evaluation indicated that program objectives were met.

+18. Goodman, Libby. The efficacy of visual-motor training for orthopedically handicapped children. Rehabilitation Literature, 34(10): 299-304, October 1973.

A visual-motor training program based on techniques developed by Kephart and Getman was given to physically handicapped children for 16 hours over 60 days. Children (C.A. = 36-81 months; N = 44) had muscular or neuromuscular disorders or skeletal deformities and were assigned either to the training program or to a control group, which consisted of traditional nursery school activities. The Preschool Attainment Record, Position in Space Subtest from Frostig Developmental Test of Visual Perception, Ayres Space Test, Crossing of Midline and Imitation of Postures Subtest from So. California Perceptual-Motor Tests, and a motor development checklist were administered before and after the training. No significant differences between training and control group were found, except the control group excelled significantly on one measure in the posttest.

19. Grinsell, Harvey, and Everett G. O'Keefe. A program of early intervention for developmentally delayed children. Connecticut Health Bulletin, 88(9): 247-254, September 1974.

Examines an intervention program designed to teach high risk developmentally delayed children. Gross motor, fine motor, and visual motor coordination activities are described.

20. Hockey, Athel, and Alison M. Hardie. Occupational therapy in a group of preschool mentally retarded children. Australian Children Limited, 2(7): 246-254, 1965.

A program of occupational therapy for mentally retarded preschoolers is described. Of 64 children referred to occupational therapy, 23 showed improvement after a period of therapy, 7 showed improvement but later deteriorated, 10 showed no improvement, and 11 were still involved in the program. Critical stages in the care of mentally retarded children appear to be at the time of diagnosis and the time of school entry. Occupational therapy can help during and between these periods.

21. Knickerbacker, Barbara. A parent-oriented occupational therapy program for the multiply handicapped child. Occupational Therapy for the Multiply Handicapped Child, Wilma L. West, editor. Proceedings of the conference on occupational therapy for the multiply handicapped child, April 28-May 2, 1965. Chicago, Illinois: University of Illinois, Department of Occupational Therapy, 1965, pp. 122-137.

Cerebral palsied and mentally retarded children were served through this program at Walson Army Hospital (Fort Dix, New Jersey). Mentally retarded preschoolers received perceptual-motor training. Group participation was felt to be the most effective method of conducting perceptual-motor training.

+@22. Krantz, Murray. Roundtable in Research on the Psychomotor Development of Young Handicapped Children: Annotated Bibliography. Milwaukee, Wisconsin: Vasquez Associates, Ltd. (P.O. Box 5630, 53211), September 1975. 112 pp. $7.95 from IRUC.

This annotated bibliography containing 75 citations was prepared for the Bureau of Education for the Handicapped, U. S. Department of Health, Education, and Welfare. All studies listed pertain to psychomotor training and development of young handicapped children.

23. Lillie, D. L. The effects of motor development lessons on mentally retarded children. American Journal of Mental Deficiency, 72: 803-808, 1968.

Mentally retarded children who were free from physical, sensory, and emotional handicaps (N = 48; C.A. = 57 to 70 months; IQ = 50 to 85) were placed in three groups: experimental preschool (E), kindergarten control (K), or home control (H). The Lincoln-Oseretsky Motor Development Scale was given in September and again in May. The Es received 65 highly structured motor development lessons, including cutting, pasting, folding,

tracing, and gross motor games designed to remediate deficits in static balance, dynamic precision, gross body coordination, finger speed, arm and hand steadiness, precision and dexterity. Ks received a traditional kindergarten program, and Hs received no formal instruction. No significant differences in gross motor development was evident among the three groups. Es were significantly superior to Ks in fine motor proficiency, and Ks were superior to Hs.

24. MacKenzie, D. Y. The handicapped child: treatment of the spastic child. Nursing Times, 60(35): 1109-1110, 1964.

An early program of treatment for the spastic child is to be preferred over a wait-and-see approach. Sensory stimulation, movement exploration, and play therapy are greatly indicated at this time, when the young child should be developing normal movement patterns.

+25. Marx, Marion. Integrating physical therapy into a cerebral palsy early education program. Physical Therapy, 53(5): 512-514, May 1973.

Ways of integrating physical therapy into an early education program for three to six year old cerebral palsied children are described. Physical therapist may recommend ways of positioning children, stimulating movement, including perceptual training, and teaching self care skills.

+26. Mayberry, Wanda. Research in sensory-integrative development: a preliminary report developing infant predictors for sensory-integrative dysfunction. American Journal of Occupational Therapy, 28(3): 141-143, March 1974.

Reviews the literature in this area, which indicates that appropriate occupational therapy intervention can improve abilities of children with sensory-integrative dysfunction. Reports on a study at Denver General Hospital that is attempting to provide a base for the development of appropriate assessment tools.

*27. Meyerson, Daniel W. A Reading Readiness Training Program for Perceptually Handicapped Kindergarten Pupils of Normal Vision. Final report. Stanford, California: Stanford University, 1967. 114 pp. (ED 013 119 $6.58 paper-copy, $0.65 microfiche)

Perceptually handicapped kindergarten pupils were evaluated as to socio-economic status, visual acuity, and visual perception (Frostig test). Children were put into two groups: Kephart trained 15 minutes per day, and no special training. After eight weeks, tests of reading readiness were given and children were re-evaluated. No significant differences were found, except that children of higher socio-economic status were better prepared for reading no matter which group they were in.

+28. Morrison, Delmont, and Patricia Pothier. Two different remedial motor training programs and the development of mentally retarded pre-schoolers. The American Journal of Mental Deficiency, 77(3): 251-258, November 1972.

Twenty seven mentally retarded children who lived at home and attended a

special nursery school were assigned to one of three groups: sensori-motor training group (S-M), gross-motor training group (G-M), or attention group. Children participated in their programs 20-30 minutes daily, five days a week for six months. Attention group received attention while engaging in any chosen activity; G-M group participated in individualized indoor and outdoor gross motor activities; S-M group received an individualized program including angels-in-snow, walking on a mattress, balance board, obstacle course, crawling, rolling, walking. Each activity to be taught the S-M group was analyzed in terms of its simplest component part, and the child was trained on each of these until the total response was acquired. The S-M training group had significantly greater gains in overall development and gross motor and language development than did the other two groups.

*29. Padalino, Jane P. A Program for the Identification and Remediation of Perceptual Deficiencies in Kindergarten and Primary Grade Students. Final interim progress report, 1971. 136 pp. (ED 056 428 $6.58 paper-copy, $0.65 microfiche)

Two kindergarten classes received intensive training to remediate perceptual deficiencies to prevent or minimize learning disabilities over a period of three years. Comparison of pre and post test data indicated that children showed marked improvement in areas of visual-motor integration, certain aspects of gross motor development, and awareness of body parts. Children who originally showed deficiencies in perceptual-motor match or associative processes improved the most in all areas.

30. Painter, Genevieve. The effect of a rhythmic and sensory motor activity program on perceptual-motor spatial abilities. Exceptional Children, 33(2): 113-116, October 1966.

+31. Parten, Carroll B. Out of the classroom: encouragement of sensory motor development in the preschool blind. Exceptional Children, 37(10): 739-741, Summer 1971.

Summarizes techniques used at the Blind Children's Center (Hollywood, California) to encourage sensory motor development in preschool blind children. Specific activities are described that develop self and body awareness, ability to relax and sit still, mobility habit patterns, and understanding of concepts.

+32. Patel, Hasu S. Physical developmental therapy technique for severely multiply handicapped children. Challenge, 9(4): 6-7, May-June 1974.

Objectives of the Onondaga Center for the Retarded (Syracuse, New York), which serves three to six year old mentally retarded and/or cerebral palsied children, include teaching head control and independent sitting and preparing children for locomotor skills. An inner tube is used to help children achieve these objectives.

33. Rarick, G. L., and G. D. Broadhead. The effects of individualized versus group oriented physical education programs on selected parameters of the development of educable mentally retarded, and minimally brain injured children. Monograph sponsored by the U. S. Office of Education and the Joseph P. Kennedy Jr. Foundation, 1968.

Elementary school-age educable mentally retarded (N = 275) and minimally brain injured (N = 200) children were randomly assigned by disability and age to one of four treatments: individualized adapted physical activities, group adapted physical activities, art, or control. The classroom teacher taught all groups for 35 minutes each school day over a 20-week period. A total of 32 tests were administered before and after the experiment. Results suggested that children who participated in any of the three programs had greater changes in motor, intellectual, and emotional behavior than controls. The art program modified emotional behavior more, physical education modified motor behavior more, and both modified intellectual behavior equally; the individualized physical education program was more successful in changing motor, intellectual, and emotional parameters of children's behavior. Positive changes occurred more often in older than younger children, in minimally brain injured than retarded, and in boys than girls.

@34. Raynor, Sherry, and Richard Drouillard. Get a Wiggle On: A Guide for Helping Visually Impaired Children Grow. Mason, Michigan: Ingham Intermediate School District (2630 West Howell Road, 48854), 1975. 77 pp. $1.25.

Narrated in the first person by a visually impaired infant, this booklet stresses the importance of helping the child sharpen his/her five senses. Carrying and touching the child often, as well as permitting exploration are especially important.

*35. Reaching the Pre-School Handicapped Child. Albany, New York: New York State Education Department, Division for Handicapped Children, April 1972. 47 pp. (ED 069 086)

These are proceedings of a special study institute on the preschool handicapped child. Topics discussed are identification of handicapped children, the concept of classification, prescriptive physical education, diagnostic teaching, and educational materials.

36. Ross, Sheila A. Effects of an intensive motor skills program on young educable mentally retarded children. Palo Alto, California: Palo Alto Medical Research Foundation, 1969. 7 pp.

In a six month training program skills basic to games and sports played by young children were taught to elementary age educable mentally retarded children. These children possessed skills far below those of normal children. With training, educable mentally retarded children improved to a level where they did not differ statistically from normal children.

*37. Ross, Sheila A. A study of the effects of an intensive training program on the motor skills of young educable mentally retarded children. Palo Alto, California: Palo Alto Medical Research Foundation, 1967. 53 pp. (ED 023 242)

Educable mentally retarded boys and girls (N = 40; CA = 4 to 10 years) were divided into an experimental and control group, based on age, IQ, sex, and pretest scores. Experimental group received six months of training in hitting, catching, throwing, running, jumping, bouncing, kicking, hopping, skipping, balancing, and target-throwing; control group participated in regular physical education. Experimental group only differed significantly from control group on basic skills test.

38. Ross, S. A. Effects of an intensive motor skills training program on young educable mentally retarded children. American Journal of Mental Deficiency, 73: 920-926, 1969.

Two groups of educable mentally retarded children (N = 20 each; $\bar{X}$C.A. = 92.5 months; $\bar{X}$MA = 61.75; $\bar{X}$IQ = 68.40) and one group of normal children (N = 20; $\bar{X}$CA = 90.10; $\bar{X}$MA = 59.80; $\bar{X}$ IQ = 66.25) took part in this study. All three groups were pre and posttested on the Basic Skills Test and the Brace Items Test. Mentally retarded children engaged in a 6-month training program of three 20-25 minute sessions per week, consisting of simple verbal instructions, use of games to teach skills, frequent changes of activity, active participation of all during each session, leadership practice, and an adult model who did not offer direct criticism; normal children participated in regular physical education. MR children made considerable gains on both tests, especially the Basic Skills Test, after training. Control group showed no significant gain on either measure.

39. Skeels, Harold M., and Harold B. Dye. A study of the effects of differential stimulation on mentally retarded children. Proceedings and Addresses of the American Association on Mental Deficiency, 54(1): 114-136, 1939.

Mentally retarded children (CA = 7 to 30 months; $\bar{X}$ IQ = 64.3) were transferred from an institutional environment to one providing superior stimulation (a ward with older, brighter girls). A control group of children remaining in the institution and a group attending preschool were also studied. Three re-tests of IQ were administered during and after the transfer, over a period of two years. Experimental group made an average IQ gain of 27.5 points, while control groups showed a mean loss of 26.2 points. This is primarily attributed to the close adult-child relationship experienced by experimental children.

40. Skeels, Harold M., and Marie Skodak. Techniques for a high-yield follow-up study in the field. Public Health Reports, 80(3): 249-257, March 1965.

In this follow-up study, authors talked to all of the 25 children originally studied. Problems encountered are described. Eleven of 13 experimental group children were married. All were self-supporting. Four had gone on to college. Five of the 12 control group children were in state institutions. Six were employed, all but one as unskilled laborers; median level of educational achievement was third grade.

41. Studebaker, Gary W. The effects of a program of fixation upon motor performance of cerebral palsied children. Doctoral dissertation. Eugene, Oregon: University of Oregon, 1974. 106 pp.

Six young cerebral palsied children were tested in a ten-week motor development program emphasizing fixation on a stationary dowel with one hand while manipulating an object with other hand. Pretest and posttest evaluations of audiovisual recordings indicated that motor performance of children had improved over the ten-week program.

42. Thelen, David C. A program for training children in coordination and perceptual development. Education and Training of the Mentally Retarded, 8(1): 29-35, February 1973.

Describes a program to help handicapped primary and pre-primary children develop coordination and improve perceptual skills. Locomotor, perceptual, and social components of the program include such activities as jumping, crawling, tire rolling, walking through ladders, walking balance beams, tossing bean bags, and climbing monkey bars.

43. Webb, R. C. Sensory-motor training of the profoundly retarded. American Journal of Mental Deficiency, 74: 283-295, 1969.

A training program designed to affect change in areas of awareness, manipulation of environment, movement and posture, and locomotion was given to profoundly mentally retarded children over a period of eight months. Children (N = 32; CA = 2½ to 17½ years; social age = 2 to 21 months) were evaluated as to sensory integration and motor performance before and after training. Posttest scores revealed that about half the children showed increased awareness; all children showed improved movement patterns; two-thirds gained in reaching and grasping objects; all children who initially did not relate to adults gained in this ability; and there was some improvement in posture and locomotion in all but one child. Comparison of pre and post treatment social ages gave a mean difference of two months.

## EARLY INTERVENTION: INTEGRATION OF HANDICAPPED AND NON-HANDICAPPED PRESCHOOLERS

Federal legislation guaranteeing education in the least restrictive environment to handicapped students applies as well to children between 3 and 6 years old who have not yet begun formal schooling. This, coupled with heightened consciousness of parents of handicapped preschoolers who do not want to hide their children at home, has resulted in an increased number of integrated preschool programs.

Trends toward integration are so recent that evidence supporting or contraindicating this is scant. At best, research in this area can only be considered to be in the preliminary stages. Perhaps the best reason identified for integrating very young handicapped and non-handicapped children is that non-handicapped children can serve as very effective models. One study cited in the bibliography concluding this section indicated that quality and quantity of handicapped children's play increased as a result of an integrated preschool program (2). Another study found that handicapped preschoolers increased their verbalizations after extended contact with non-handicapped models (5).

An as yet unsubstantiated but seemingly logical rationale for integration of handicapped and non-handicapped preschoolers is to foster more positive attitudes toward handicapped individuals. Longitudinal studies may eventually show that children who are in close contact with handicapped children develop more positive and accepting attitudes.

Difficulties in initiating integrated preschool programs have been attributed to ignorance about licensing regulations, need for more staff, need for specially trained staff, and various other administrative concerns related to facilities, financing, and insurance. Several citations in the bibliography concluding this section are specifically aimed at aiding preschool teachers and administrators (1,3,6,7,8,9,10). Suggestions in these publications cover such subjects as in-service training, licensure, and program planning.

## Bibliography


1. Crandon, G. and L. K. May. Experimental unit for severely subnormal children under five years of age. Nursing Times, 60(50): 1644-1645, 1964.

   An experimental unit for severely subnormal children under five years old was organized in conjunction with a nursery school for normal children. One aspect of program allowed for a period of play between normal and retarded children. Article also discusses staff training, daily program, parent counseling, selection of participants, and experiences gained.

2. Devoney, Catherine, M. J. Guralnick, and H. Rubin, Integrating handicapped and non-handicapped preschool children: effects on social play. Childhood Education, 50(6): 360-364, April-May 1974.

   Describes research on procedures implemented to increase the social play of handicapped preschool children. The use of non-handicapped children as models increased quantity and quality of play in the target population.

*3. Gorelick, Molly C., et al. Careers in Integrated Early Childhood Programs. California State University at Northridge, Preschool Laboratory, 1975. 272 pp. (ED 112 628, $13.32 papercopy, $0.76 microfiche)

   Describes a four-year project to design and implement a competency based training model that prepared teachers and administrators for careers in early childhood programs integrating normal and handicapped children.

+4. Gorelick, Molly C. Are preschools willing to integrate children with handicaps? Journal of Rehabilitation, 40(4): 17-18, July-August 1974.

   An early childhood project conducted by California State University (Northridge) Home Economics Department was successful in terms of integrating handicapped and non-handicapped children in a nursery school program. A large majority of preschool program directors surveyed were favorable toward integrating handicapped youngsters into their programs. Some administrators misinterpreted licensing regulations, preventing this type of enrollment.

5. Guralnick, Michael J. The value of integrating handicapped and non-handicapped preschool children. American Journal of Orthopsychiatry, 1976, in press.

   Reviews studies which have integrated handicapped and non-handicapped preschoolers. Two research studies on social and language development are described, where non-handicapped children served as models. Peer modeling was not sufficient to produce any change in social play behavior of handicapped children; modeling did result in increased verbalizations of handicapped children.

+6. Klein, Jenny W. Mainstreaming the preschooler. Young Children, 30(5): 317-326, July 1975.

   Author describes experiences with integrating handicapped children in Head Start and provides useful ideas for application in any program with young children.

7. Klein, Jenny W., and Linda A. Randolph. Placing handicapped children in Head Start. Children Today, 3(6): 7-10, November-December 1974.

Presents discussion on the placement of handicapped children into existing Head Start programs. Services and program activities for preschoolers in these programs are discussed, as well as incidence figures.

8. Northcutt, Winifred H. The Hearing Impaired Child in a Regular Classrooom: Preschool, Elementary, and Secondary Years. Washington, D. C.: Alexander Graham Bell Association for the Deaf (Publications Sales, Dept. T, 3417 Volta Place, N. W., 20007). $7.95.

Over 40 chapters written by individuals directly involved in mainstreaming are presented in this book, which provides information on issues, objectives, personnel, evaluation, and parent-teacher interaction.

+9. Preschool integration. Exceptional Parent, 5(4): 31-32, August 1975.

The Center on Human Policy (Syracuse, New York) has been working with community agencies to integrate handicapped children into nursery and day care programs. To share ideas on similar projects, contact: Ellen Barnes, Center on Human Policy, 216 Ostrom Avenue, Syracuse, New York, 13210.

10. Tait, Pearl E. Believing without seeing: teaching the blind child in a regular kindergarten. Childhood Education, 50(5): 285-291, March 1974.

Suggestions are offered to kindergarten teachers on integrating blind children into their classes. Activity adaptations and 20 games for developing touch, sound, smell, and spatial awareness are cited.

*11. Wynne, Suzan, et al. Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications of Research. Final report. Washington, D. C.: Wynne Associates, 1975. 269 pp. (ED 108 426 $14.59 papercopy, $0.76 microfiche)

Presents results of a project that reviewed and critically analyzed the research literature and produced a bibliography of 291 materials relating to mainstreaming preschool handicapped children. Considerations in developing an integrated early childhood program are summarized. Among conclusions reported are that the value of an intervention program depends on degree to which that program focuses on the child's special needs.

## EARLY INTERVENTION:
## TESTING, ASSESSMENT, AND EVALUATION

Assessment of young handicapped children, either through formal tests or more informal observations, is undertaken for two main reasons: (1) to determine if a handicapping condition exists, and (2) to identify the child's strengths and weaknesses in specific areas--language, emotional development, physical and motor skills, perceptual development. Testing and periodic evaluation of progress must be a part of every relevant early intervention program. However, testing cannot be an end in itself--this results in the negative aspects of labeling and classification. A testing program can only be really effective when:

- Everyone concerned knows what each test item measures.
- Personnel involved in testing discuss results with others who know and work with children in a variety of situations.
- Formal testing is supplemented with informal observation in a variety of situations.

Papers, articles, manuals, and kits listed in the bibliography following this section are illustrative of tests currently used to assess various aspects of the young handicapped child's development. Physical educators, recreators, and others who are specifically interested in assessing physical, perceptual-motor, and play skills of handicapped preschoolers may also find the following tests useful:*

Centennial Athletic Programme Testing Program
Canadian Association for Retarded Children
4700 Keele Street
Downsview, Toronto, Canada
measures abdominal strength and endurance, explosive power of legs, cardiorespiratory endurance, balance, and coordination; ages four and up.

The Peabody Test of Physical Fitness
Institute on School Learning and Individual Differences
George Peabody College for Teachers
Nashville, Tennessee 37203
measures strength and speed, body build and growth, hand-eye coordination, cardiovascular endurance, and muscular power; ages five to nine.

A Perceptual Test Battery: Development and Standardization
University of Chicago Press with the Department of Education of the University of Chicago
5801 Ellis Avenue
Chicago, Illinois 60637

*For further information on these and other tests, refer to Testing for Impaired, Disabled and Handicapped Individuals. Washington, D. C.: American Alliance for Health, Physical Education, and Recreation (1201 16th Street, N.W., 20036), 1975. $3.95.

measures auditory discrimination, auditory memory span, auditory sentence memory, auditory sequencing span, visual form discrimination, visual form memory; ages five through eight.

Physical Ability Rating Scale
University Hospital School
Iowa City, Iowa 52240
measures toilet habits, ability to lift glass, grip, dressing ability, self-feeding ability, and a variety of physical and motor skills (building towers, drawing, running, balancing, etc.); ages birth through 72 months broken down by age level.

Individual Motor Achievement Guided Education
The Devereu Foundation Press
Devon, Pennsylvania 19333
measures sequential motor activity, fine motor ability, static balance, and perceptual-motor activity; emotionally and/or neurologically impaired four to ten year olds.

Early Detection Inventory
Follett Educational Corporation
1018 West Washington Boulevard
Chicago, Illinois 60607
determines social-emotional behavior responses, school readiness, motor performance, physical information, family and social history, and medical history; for children entering nursery school, Head Start, kindergarten.

The Basic Concept Inventory
Follett Educational Corporation
1018 West Washington Boulevard
Chicago, Illinois 60607
measures ability to identify concepts, answer questions, perform specific acts, identify objects, repeat numbers sequentially; preschool to age ten.

Developmental Test of Visual-Motor Integration (VMI)
Follett Educational Corporation
1018 West Washington Boulevard
Chicago, Illinois 60607
measures ability to imitate drawings of various forms; ages two to 15.

Denver Developmental Screening Test
University of Colorado Medical Center
Denver, Colorado 80220
measures gross motor, fine motor-adaptive, language, and personal-social development; ages two weeks to six years.

Peabody Developmental Motor Scales (IMRID Behavioral Science Monograph No. 25)
IMRID, George Peabody College
P. O. Box 163
Nashville, Tennessee 37203
measures gross-motor and fine-motor adaptive behavior; ages birth to seven years.

## Bibliography


1. Bleck, E. E. Locomotor prognosis in cerebral palsy. Developmental Medicine and Child Neurology, 17(1): 18-25, February 1975.

   Relates a method of storing a cerebral palsied child's reflex responses and relating this to his prognosis for walking. Author suggests that before treatment is started, treatment assessment should include analysis of child's walking potential, as set forth in this article.

2. Bryant, Antusa S., and Leroy Schwan. Bryant-Schwan Design Test, Part I. Unpublished instrument. Mankato, Minnesota: Mankato State College, Department of Special Education, 1972. Available from Campus Publishers, Box 1005, Mankato, Minnesota, 56001. $17.50.

   This instrument was designed to measure what a mentally retarded, preschool, or elementary school child knows about design (lines, shapes, colors, textures, and values). It is intended to assist in planning an art curriculum for mentally retarded children.

+3. Chase, Joan B. Developmental assessment of handicapped infants and young children: with very special attention to the visually impaired. New Outlook for the Blind, 69(8): 341-349,364, October 1975.

   Although caution must be exercised in using assessment devices, assessment measures can help to prevent, ameliorate, or uncover difficulties that the handicapped child might face. A battery of assessments will yield a profile of the infant's abilities, strengths, weaknesses, and disabilities.

4. Comprehensive Developmental Evaluation Chart. El Paso, Texas: Mothers Can Help, El Paso Rehabilitation Center (2630 Richmond, 79930).

   The chart was designed as a tool to record development of children from birth to three years. Tests of gross movement, reflexes, hand use, expressive and receptive language, and cognitive-social development may be recorded, as well as feeding habits, vision, hearing, seizure activity, and parental attitudes.

5. Developmental Assessment Certificate. Minneapolis, Minnesota: Paul Amidon and Associates, Inc. (4329 Nicolet Avenue, 55409). $0.50. (Also available from Southeast Mental Health and Retardation Center, 700 1st Avenue South, Fargo, North Dakota, 58102.)

   A reporting tool for preschool, primary, special education, and trainable mentally retarded children for evaluating self care, visual and auditory perception training, gross and fine motor development, communication skills, and social-emotional development and adjustment.

6. Developmental Prototypic Assessment and Curriculum. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102). $4.50.

An extensive compilation of developmental items classified at monthly intervals for ages 0-6 years in the areas of gross motor, fine motor, cognitive, language, and self-help skills.

7. Infant Evaluation Scale. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102). $19.50.

Includes manual, materials, and 25 protocols. This is an evaluation instrument to be used by parents in assessing the developmental level of their child (from birth to six months of age).

*8. Lawhon, Del, and Linda Thornton, compiler. An Annotated Catalog of Visual Materials Relating to the Identification and Management of Handicapping Conditions of Preschool Children. Charleston, West Virginia: Appalachia Educational Laboratory, June 1975. 168 pp. (ED 112 205 $8.24 papercopy, $0.76 microfiche)

This is a catalog of 232 visual materials (films, slides, videotapes) relating to identification and management of handicapping conditions of preschool children. An additional section lists unannotated visuals.

9. Magic Kingdom of Oz Preschool Screening Manual. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102). $5.00

Describes procedures for planning and implementing an extensive preschool screening program using parents as screeners (able to screen approximately 20 to 25 children in two hours on approximately 24-40 task areas.

10. Magic Kingdom of Oz Screening Program--Complete Kit. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102). $39.00.

Children between ages three and six can be screened on this program. Kit includes manual, 25 student profiles, stimuli cards and materials.

11. Share, Jack B., and Ronald W. French. Guidelines of early motor development in Down's syndrome children for parents and teachers. Special Children, 1(2): 61-65, Fall 1974.

A chart titled "Comparison of Age of Onset of Gesell Normals and Down's Syndrome Samples for Selected Developmental Landmarks in Months" is discussed. Chart indicates ages at which certain early motor development landmarks occur in normal and Down's syndrome children, with encouragement for parents and professionals to further development.

12. Tiny Tot Evaluation and Progress Report. Cincinnati, Ohio: Stepping Stones Center for Handicapped (5658 Given Road, 45243), n.d. 11 pp.

Stepping Stones Center for Handicapped is a therapeutic recreation center which initiated an Infant Stimulation Program in 1971. The program includes

motor management and motor planning skills, spatial awareness, sensory and language experiences, and self-help activities. The Tiny Tot Evaluation form (7 pages) is utilized upon a child's admission to the program and up-dated as the child accomplishes each task. Fifty-three motor development tasks (walks up steps alternating feet with help, walks along, kicks a large ball, uses scissors), 25 hand and object tasks (follows object, picks up small objects, tries building blocks), 18 socialization tasks (plays alone, takes turns, tries new activities), 31 language development tasks (laughs aloud, gives first name, asks simple questions), and 15 self-help tasks (pulls on sock, finger feeds) are included. The Progress Report (4 pages) is charted at the end of each year and is sent to parents.

13. The Yellow Brick Road. Austin, Texas: Learning Concepts (2501 N. Lamar, 78705). $29.95.

This early childhood test kit includes manual, four battery booklets, and 25 admission tickets. Following a Wizard of Oz format, five and six year olds move through 24 tests evaluating strengths and weaknesses in motor, visual, auditory, and language areas.

## EARLY INTERVENTION: FACILITIES

Indoor and outdoor facilities for young handicapped children need not differ from those used by non-handicapped children. An awareness is needed, however, of what constitutes an architectural barrier to a young child who perhaps cannot see, hear or walk. Ideally, all children could use all facilities. Since this is not the case, the bibliography in this section contains sources of information on building accessible play facilities for young children.

It often seems that any toy, facility, or activity for handicapped children must be therapeutic. While these children do require a great deal of purposive intervention (therapy), this should not infringe on their play to make it less than fun. An attempt was made to include sources in this bibliography that provide both the benefits of therapy and the benefits of fun. The playgrounds, play centers, and other facilities noted have combined therapy with fun, both enhancing the child's development and letting him or her be a child.

## Bibliography


@1. Adkins, Patricia G. A Priceless Playground for Exceptional Children. El Paso, Texas: Learning Resources Press (609 La Cruz Drive, 79902), 1973. $1.50, plus 25¢ postage and handling.

A fun and therapeutic playground built by volunteers and fathers of children in the Early Learning Center for Exceptional Children (El Paso) is described. No commercial playground equipment was purchased. Author details each piece of equipment and its contribution to the child's growth and development.

@2. Austin, Richard L., comp. Playgrounds and Playspaces for the Handicapped. Austin, Texas: Theraplan, Inc. (P. O. Box 13325, 78711), 1974. 62 pp.

Author outlines ways that a therapeutic play facility can enhance aspects of the handicapped child's growth and development. Considerations on site selection and equipment are presented, with many illustrative photographs.

@3. Bartholomew, Robert. Indoor and Outdoor Space for Children in Nursery-Kindergarten Programs. Monticello, Illinois: Council of Planning Librarians (P. O. Box 229, 61856), December 1973. $1.50.

Not specifically geared toward handicapped children, this bibliography does contain books, reports, and articles relevant to planning indoor and outdoor spaces for all young children.

@4. Gordon, Ronnie. The Design of a Pre-School Therapeutic Playground: An Outdoor Learning Laboratory. Rehabilitation Monograph No. 47. New York: Institute of Rehabilitation Medicine, New York University Medical Center (400 E. 34 Street, 10016), n.d. $4.50

Philosophy and design of a playground for preschool physically handicapped children are discussed in this publication. Photos, text, and detailed drawings illustrate construction and design of the playground.

Hayes, Gene A. Therapeutic play facilities for handicapped children. Journal of Leisurability, 2(2): 10-17, April 1975.

Explores the values of play and describes a "typical" play facility. The elements of a therapeutic play facility, as well as ways to enhance child's growth and development through facility design, are discussed. Integration of play facilities is stressed.

6. Osmon, Fred Linn. Patterns for Designing Children's Centers. 2nd printing. New York, New York: Educational Facilities Laboratories, Inc. (477 Madison Avenue, 10022), 1972. 128 pp.

This report from Educational Facilities Laboratories should be useful to people who plan or hope to plan a children's center. Although blueprints are not provided, a rationale for all facets of a children's

center is offered so readers can determine what they actually need in a center and can design their own centers. Patterns for each conceivable living and playing area are discussed with considerations and requirements for complete utilization. Floor plans and a bibliography are provided.

7. Play Learning Centers for Preschool Handicapped Children: Research and Demonstration Project Report. Tampa, Florida: College of Education, Professional Physical Education Program, University of South Florida, August 1975. 97 pp.

Three play learning centers for handicapped children were constructed in Tampa, Florida: (1) The United Methodist Preschool Center's play facility consisted of several interconnected multi-level, brightly-colored table tops; it was used by two groups of mentally retarded children (I. N = 12, $\bar{X}$ CA = 5 years, $\bar{X}$ IQ = 39; II. N = 20, $\bar{X}$ CA = 4 years, $\bar{X}$ IQ = 69). (2) The United Cerebral Palsy Preschool Center's play facility consisted of stairs, inclines, and slides in various colors and textures (foam, wood, carpeting); two groups of cerebral palsied children used it (I. N = 10, $\bar{X}$ CA = 2 years, II. N = 23, $\bar{X}$ CA = 5, $\bar{X}$ IQ = 8[illegible] children at both sites were videotaped while engaged in unstructured play. Conclusions were similar: play behavior was highly related to the designer's expectations, the play learning centers held the children's attention and both mentally retarded and cerebral palsied children of higher motor ability engaged in more upright play. The third play facility was at a Residential Treatment Center and consisted of an elevated deck under trees, with a ladder, pole, slide, and rope net for access or exit. Nine emotionally disturbed boys ($\bar{X}$ CA = 12 years) helped to design and construct the play center; no videotaping of play was done. As with the other two play centers, play was consistent with the intent of the design. Detailed construction plans, materials used, and cost of all play learning centers are included in the report. Recommendations for further research are given.

8. Play Lot. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102), $45.00

Contains blueprints and construction plans for an inexpensive and easily constructed indoor-outdoor playground for preschool children.

9. Tot-Dock. Grinnell, Iowa: Stadiums Unlimited, Inc. (Box 374, 50112). 1 to 4 platforms $140.00 each; 5 to 8 $129.00 each; 9 to 16 $124.00 each; 17 to 24 $119.00 each; over 24 $115.00 each. Leg extension (sets of 4)--6 inch $7.00 per set; 12 inch $10.00 per set. Rail supports (2 lefts and 2 rights) $10.00.

Swimming instruction for small handicapped and non-handicapped children is often complicated by their fear of deep water and the fact that the shallow end of the pool is still deep water to the child. Instruction in a wading pool can increase the difficulty of making the transition to a regular pool. Tot-Dock is an underwater swimming pool platform designed to alleviate the above problems. Tot-Dock platforms, used in any number or configuration desired, rest on the bottom of the pool at a height of

six inches to provide a solid base for swimming instruction in any pool. Leg extenders are available to raise the platform's height an additional six or 12 inches. Each platform measures 7'6" long by 30" wide, weighs 55 pounds, has a guard rail, and is easily set up, connected to other platforms, and taken down. Platforms may be stacked for storage. As children are ready, they can make the transition to deeper water.

## EARLY INTERVENTION: CURRICULA AND ACTIVITIES

The interdisciplinary approach of most early intervention programs has resulted in a large number of curriculum guides that include sections on (1) communication, language, and speech, (2) social-emotional development, (3) perceptual training, (4) gross and fine motor development, (5) self-care skills, (6) cognition, and (7) recreation and play. A listing of such program curricula, some of them annotated, is presented at the end of this section. Because most of the curricula include chapters on administration and involvement of parents, they should be useful to both the individual planning an early intervention program and the individual--parent or practitioner--who merely wants activity ideas and approaches.

Some articles and books have been written specifically about the physical education/perceptual-motor or recreation/play components of the early intervention program. For this reason, a separate section of the bibliography lists books, articles, and papers of particular interest to physical educators and recreators. The general bibliography should not be overlooked, however, because most of the curriculum guides do include sections on recreation and perceptual-motor development.

### Program Approaches

Each child is an individual and should be treated as one, with the child's program based on his or her identified strengths and weaknesses. It would be a gross error to base a program solely on the child's condition. However, child development specialists do recognize that preschool children in certain diagnostic categories have needs specific to their conditions. While the development of the whole child must be respected, young children with certain handicapping conditions have needs that should be reflected in programs for them:

- Visually Impaired--program should include activities that encourage exploration and independence. Because these children cannot see, they must initially be supported by a safe, unchanging environment with a variety of stimulating objects to discourage fear and encourage early exploration.

- Hearing Impaired--stimuli for development of language and communication are a necessity in their program. Despite the fact that the child cannot hear at all or can hear very little, leaders/teachers/parents should talk a lot, speak distinctly, and position themselves so that children can see them speak, using books, pictures, and other stimuli for language.

- Deaf-Blind--program must provide a great deal of outside stimulation to discourage the totally engrossing self-stimulatory activities that characterize these children. Exploration in a safe environment near the parent/leader/teacher is to be encouraged, and talking, a lot accompanied by hand signs is also important.

Mentally Retarded--program should include both activities to stimulate vocalization/communication and activities for motor development. Because the development of these children may be months behind normal children of the same chronological age, it is important to determine their developmental level and base activities on this.

Cerebral Palsied--these children are often limited to a few and inadequate movements that are easily stereotyped. Therefore, their program must focus on discouraging wrong movements and encouraging correct posture and locomotion, upon which future movements are based.

## Activities

The activities presented here have multiple purposes in an early intervention program for handicapped children. They could be used as part of the child's physical or occupational therapy to enhance the child's perceptual-motor development; they could serve as learning or language activities; they might be used in a physical education program to improve physical/motor functioning or fitness; they also could be used as recreation purely for the sake of play, or to expose the child to a variety of recreation activities.

Each activity is described in terms of equipment needed, objectives, what to do, and special considerations in presenting the activity. Objectives are only listed if they are particularly descriptive of the activity's function. For example, we may assume that most activities are fun and that all can enhance language development (if the teacher talks to the child or uses signs and encourages a response), so these are not listed as objectives with each activity.

### Water Play

Equipment: tubs, water-play table, bowls, eggbeater, cups, sponges, toys that float, brushes, paint-roller, waterproof aprons

Objectives: cognitive--concepts of volume and weight
perceptual-motor--stimulates tactile senses
social--cooperative play

What to Do: wash toys; fill and empty containers of different sizes; paint a wall with water; carry buckets of water from one area to another; wash clothes

Special Considerations: you may have to demonstrate things to do first; table should be correct height for wheelchairs

### Swimming

Equipment: floating toys, kick boards, inner tubes, sponges, balls

Objectives: perceptual-motor--tactually stimulating, facilitates free movement of body parts, body image
physical--encourages rhythmic breathing, endurance, muscular development
recreation--lifetime leisure activity

What to Do: splash with water at poolside; squeeze sponges over head; massage limbs; help to float; play with balls; run or walk across pool; blow balloons across pool; bob; kick legs and splash arms

Special Considerations: water play may be a lead-up activity to lessen fear; initially, a one-to-one staff to child ratio may be required

## Sand Play

Equipment: sandbox or sandy lot, pails, shovels, sieve, spoons, measuring cups, scoops, molds

Objectives: cognitive--concepts of weight and volume
perceptual-motor--tactually stimulating
social--cooperative play

What to Do: child can sit or roll in sand; sift, pour, scoop up sand; make mud pies and cakes; fill containers

Special Considerations: cornmeal, rice, popcorn, or styrafoam may be used instead of sand

## Rhythm

Equipment: records and record player, drums, tambourines, wooden sticks, cymbals, wooden blocks, maracas

Objectives: perceptual-motor--stimulates auditory and tactile senses, body and muscular control
cognitive--counting concepts
social--cooperation with others, team effort

What to Do: sway, tap feet, move head, clap to music; march around room; sing songs; hit rhythm instruments; dance, prance, and twirl to music

## Painting and Coloring

Equipment: large sheets of paper, easels, large brushes, felt tip pens, colored chalk, finger paints, poster paints, aprons

Objectives: cognitive--color, shape, and size concepts
perceptual-motor--fine motor control, tactually stimulating
social--sharing materials
recreation--lifetime leisure activity

What do Do: demonstrate and let child paint or color as he/she wants

Special Considerations: child may be apprehensive about getting hands into finger paints at first; treat spills as accidents but encourage children to clean up messes; try foot painting for those who cannot hold a brush in hands or just for a change; use only one to three colors at first

## Clay

Equipment: play dough, clay, brown paper or newspaper, sand, cookie cutters, pots and pans, rolling pin, dull knives

Objectives: cognitive--shape, size concepts
perceptual-motor--tactually stimulating, fine motor control, exercise for hands and fingers
recreation--lifetime leisure activity

What to Do: pound clay, shape into objects, manipulate; cut clay into shapes, roll clay out flat

Special Considerations: add sand to clay for texture variety

## Obstacle Course

Equipment: boards, boxes, hoops, tubes, ladder, pile of styrafoam, mats, chairs

Objectives: cognitive--concepts of up, over, around, under
perceptual-motor--fine and gross motor skills, agility, balance, locomotion, laterality
social--taking turns

What to Do: climb over boards; crawl under chairs and benches; crawl through hoops; get in and out of boxes; walk along ladder on floor; jump into box of styrafoam.

## Ball Games

Equipment: different sized balls, boxes, garbage cans, beanbags

Objectives: perceptual-motor--master ball skills, visual attention, flexibility
social--rules, play with others (cooperation)

What to Do: bounce ball on floor; throw ball or beanbag into air; roll ball along floor; roll ball to partner; toss beanbags into cans or boxes; roll or toss ball to each child while calling out name

## Other Activities

Use any game or idea for young children, such as:

Pat-a-Cake
Peek-a-Boo
Hide the Button
Follow the Leader
Simon Says
Outings and Field Trips
Storytelling; Looking at Pictures
Blow and Catch Bubbles

## Bibliography: General Curricula

1. Abbreviated Cumulative Record and Developmental Prototype Curriculum. Minneapolis, Minnesota: Paul Amidon and Associates, Inc. (4329 Nicolet Avenue, 55409). $0.75. (Also available from Southeast Mental Health and Retardation Center, 700 1st Avenue South, Fargo, North Dakota, 58102.)

   Consists of nearly 300 items classified under communication skills, social-emotional development and adjustment, self-care, motor development, and perceptual training, printed on a file folder to be used with preschool normal or handicapped children.

*2. Bricker, Diane D., and William A. Bricker. Non-categorical Education for the Preschool Child. 1975. 30 pp. (ED 112 558 $0.76 microfiche, not available in papercopy)

   Describes a program of non-categorical education for normal and developmentally delayed preschoolers and infants. Integration and parental involvement are emphasized. Educational curriculum includes sensorimotor, motor, social, and language development. Program administration and daily activities are described.

3. Cochran, E. V. Teach and Reach that Child. Palo Alto, California: Peek Publications (4067 Transport Street), 1971.

   Describes the neurologically impaired child and presents a program of activities for every area of development.

*4. Cross, Lee, compiler. Planning Programs and Activities for Infants and Toddlers. A Bibliography. Tadscript No. 6. Chapel Hill, North Carolina: University of North Carolina, Technical Assistance Development System, 1975. (ED 112 545 $1.95 papercopy, $0.76 microfiche)

   Approximately 100 references are included in this bibliography on planning programs and activities for infants and toddlers. Activities are equally applicable to children who are handicapped or non-handicapped. Categories covered by the bibliography are curriculum and activities, materials and information for parents, and training films.

5. DuBose, Rebecca F. Developmental needs in blind infants. New Outlook for the Blind, 70(2): 49-52, February 1976.

   Suggests stimulation activities to respond to the needs of blind infants. Activities and ideas in the areas of physical and motor development, balance and posture, cognitive-adaptive development, memory and evaluation, and social and emotional development are given.

6. Early Learning Center Curriculum Guide. El Paso, Texas: Early Learning Center (1308 Zuni Street, 79925). $4.50.

   This is a plan and curriculum guide developed and field-tested in the Early Learning Center (El Paso, Texas).

7. Finnie, Nancie R. Handling the Young Cerebral Palsied Child at Home. New York: E. P. Dutton and Company, Inc., 1970.

Written for parents, this book also has ideas and principles of interest to anyone who works with young cerebral palsied children. Daily living topics such as bathing, toilet training, dressing, feeding, and sleeping are covered. In addition, separate chapters are devoted to development of movement, carrying, and play. Equipment suppliers and further readings are listed at the end.

8. Fraiberg, S., M. Smith, and E. Adelson. An educational program for blind infants. Journal of Special Education, 3(2): 121-139, 1969.

9. Hensley, Gene, and Virginia W. Patterson, editors. Interdisciplinary Programming for Infants with Known or Suspected Cerebral Dysfuntion. Boulder, Colorado: Western Interstate Commission on Higher Education (P. O. Drawer P, 80302), 1970.

10. Hunter, Marvin, Helen Schucman, and George Friedlander. The Retarded Child From Birth to Five. New York: The John Day Company, 1972.

Based on the program at the Shield Institute for Retarded Children (New York), comprehensive diagnostic procedures and treatment approaches for young mentally retarded children are given.

*11. Johnson, Sylvia. Success Begins in the Cradle: A Curriculum for Infants and Toddlers in Day Care. Atlanta, Georgia: Georgia Appalachian Child Care Project, 1973. 189 pp. (ED 114 161 $9.51 papercopy, $0.76 microfiche)

Presents a Piaget-based day care curriculum for children from birth to 24 months. Games and activities to enhance social/emotional growth, language development, and gross motor development are described. An appendix contains additional activities and materials.

12. Johnson, V. M., and R. A. Werner. A Step-by-Step Learning Guide for Retarded Infants and Children. Syracuse, New York: Syracuse University Press, 1975. 195 pp. $9.95.

This task-oriented curriculum can be used with children between the ages of birth and 12 years, especially those with a functional level of under four years. Learning tasks are arranged sequentially by difficulty in the following categories: sensory stimulation, social behavior, imitative skills, language skills, fine motor skills, and perceptual abilities.

#13. LaCrosse, Edward, et al. Handicapped Children in Head Start Series. Meyer Children's Rehabilitation Institute Teaching Program for Young Children. Reston, Virginia: Council for Exceptional Children (1920 Association Drive, 22091), n.d. 140 pp. $3.50.

Exemplary of a developmentally oriented teaching program for young children, this book is made up of three sections: a skills sequence checklist; integrating prescriptive methods into regular classroom activities; and equipment and materials.

14. Linde, Thomas F., and Thusnelda Kopp. Training Retarded Babies and Preschoolers. Springfield, Illinois: Charles C. Thomas, 1973. 183 pp. $12.75.

This is a training program for parents or teachers to prepare the mentally retarded infant or preschooler for special education classes. Training techniques, materials to be used, and suggestions for teaching are given for the following areas: awareness of position in space, color identification, self-help, speech and language, and group activities.

15. Meier, Marie, principal investigator. The Development and Evaluation of a Pre-School Curriculum for Severely Disabled Children. Final Report. Albertson, New York: Human Resources Center (11507), January 1970. 33 pp.

This project attempted to provide severely disabled children (CA = 3 to 4 years) with an intensive pre-school program to lessen educational problems associated with their physical disabilities. Creative activities, play activities, sensory experiences, introduction to reading, language, music, science, field trips, self-care, adapted physical education, social training, motivational slides and books, and parent counseling constituted the program. Children showed improvement in various measures of vocabulary, social development, and perceptual-motor development as a result of the program. No control group was available.

16. Miller, John M., Jr. Early Education of the Multi-Handicapped Child. New York: United Cerebral Palsy of New York City, Inc., 1971. 36 pp. (ED 072 572 $3.29 papercopy, $0.65 microfiche)

Report describes UCP's demonstration program in early education for multiply handicapped preschoolers. Reviewed are objectives, home and family involvement, staff team, physical development program, nutrition, a special device for toilet training, facility, and general learning guidelines.

17. Newcomb, Mary Ann. Seal Bluff Development Center. Children's House, 5(1): 13-19, August 1971.

Seal Bluff (California) Development Center provides a curriculum including development of motor abilities, sensory stimulation, teaching body parts, and development of various concepts. Most children are mentally retarded; all are very young multiple handicapped infants and children.

18. Northcott, Winifred H., editor. Curriculum Guide: Hearing Impaired Children, Birth to Three Years, and Their Parents. Washington, D. C.: Alexander Graham Bell Association for the Deaf, Inc. (3417 Volta Place, 20007), n.d. 106 pp. $6.50.

This spiral-bound reference workbook describes components of a comprehensive infant program for children 0-3 years of age. Guidelines for development of the infant program and for parent guidance and education, integration of the child into regular nursery school, principles of language development, and evaluation methods are presented.

*19. Preschool Learning Activities for the Visually Impaired Child: A Guide for Parents. Springfield, Illinois: Illinois State Office of the Superintendent of Public Instruction, 1972. 102 pp. (ED 074 677)

Games and activities to facilitate development of skills necessary for the visually impaired child's independence are suggested in this book, which is intended for parents. Sections of the book include (1) what do I touch? (size, shape, texture, and temperature), (2) what do I hear? what do I say? (sound location, differences, meaning; social responses), (3) I use my body, (4) I can do it (eating, dressing, hygiene), (5) the child looks at himself, (6) what do I see? (for child with minimal vision), and (7) let's walk (mobility, exploration).

20. Quick, Alton D., and A. Ann Campbell. Lesson Plans for Enhancing Preschool Developmental Progress: Project MEMPHIS. Dubuque, Iowa: Kendall/Hunt Publishing Company (2460 Kerper Boulevard, 52001), 1976. 560 pp. $13.95.

This lesson plan guide contains 260 structured plans and 260 lesson plan formats to provide a source of methodology and materials for teaching preschool children. Five areas are covered: personal social, gross motor, fine motor, language, and perceptuo-cognitive.

21. Realistic Educational Planning for Children with Cerebral Palsy: Pre-School Level. New York: United Cerebral Palsy Associations, Inc. (66 East 34th Street, 10016), n.d.

The aims of educational experiences for pre-school cerebral palsied children are listed and discussed. Children with physical and sometimes mental impairments need early, planned activities to enhance physical, communication, emotional, social, and mental development. Various activities are suggested in the booklet.

22. Schattner, Regina. An Early Childhood Curriculum for Multiply Handicapped Children. New York: John Day Company, Inc., 1971. 144 pp.

+23. Scherzer, Alfred L. Early diagnosis, management, and treatment of cerebral palsy. Rehabilitation Literature, 35(7): 194-199, July 1974.

Considerations for early developmental evaluation of young children are given; the postural reflexes are particularly important in diagnosing cerebral palsy. Author outlines characteristics of the cerebral palsied infant, and suggests programs for both infants and older children. Infant program should include sensory and motor stimulation to encourage head, neck, and trunk control as preparation for sitting and crawling.

*24. Sievert, Joe, and Kathleen L. Winkies. Las Palomitas Preschool for the Handicapped. Santa Fe, New Mexico. New Mexico State Department of Education and Las Cruces, New Mexico: New Mexico State University, Claude C. Dove Learning Center, 1974. 29 pp. (ED 107 066 $1.95 papercopy, $0.76 microfiche)

Presented is a curriculum guide for preschool children with cerebral

palsy, severe speech and language difficulties, trainable and educable mental retardation, and emotional difficulties. Objectives in the domains of social self-help, communications, and psychomotor development are color-coded according to handicap, and activities for each objective are suggested.

*25. Smith, Donna K., editor. Motor-Academic-Perceptual Curriculum Guide for the Early Childhood Education of the Multiply Handicapped. Indiana, Pennsylvania: Arin Intermediate Unit #28, 1973. 248 pp. (ED 083 775)

Considers teacher roles, facilities, scheduling, and teaching techniques for working with multiply handicapped preschoolers. A chapter on motor skill development examines development of gross and manipulative motor skills, self-care skills, and body awareness. The chapter on perceptual skill development concentrates on the five senses. Activity suggestions are given.

*26. Starkovich, Paul. Two-Year Study of Northwest Regional Center's Summer Sessions for Preschool, Rubella, Deaf-Blind Children. Final report. Vancouver, Washington: Northwest Regional Center for Deaf-Blind Children, 1972. 122 pp. (ED 072 575 $6.58 papercopy, $0.65 microfiche)

The 1970 and 1971 summer programs for preschool rubella, deaf-blind children at the Center are described. The primary purpose of the programs was to evaluate these children in a learning and living situation. Program was based on the learning station concept.

27. Taylor, Billie, compiler. Blind Pre-School. Colorado Springs, Colorado: Colorado School for Deaf and the Blind (80301), 1972. 61 pp. $1.50.

Articles pertinent to aiding the pre-school blind child are collected in this publication. Topics include attitudes toward blind children, discipline, a study of children blind since birth, congenital vs. acquired blindness, and play activities beneficial to young blind children.

28. Teaching Research Infant and Child Center. A Data Based Classroom for the Moderately and Severely Handicapped. Monmouth, Oregon: Instructional Development Corporation (P.O. Box 361, 97361). $9.50.

The Teaching Research Infant and Child Center curriculum is described in this publication. The curriculum is completely task-analyzed including self-help, motor, receptive and expressive language, and basic cognitive skills. Presents techniques for training volunteers and a program for involving parents in the training of their severely handicapped child.

29. Wolinsky, Gloria F., and Nancy Koehler. A cooperative program in materials development for very young hospitalized children. Rehabilitation Literature, 34(2): 34-41, February 1973.

Describes a program for development and use of materials to stimulate language and cognitive development in hospitalized infants and toddlers (under four years old). Materials included vinyl crib pockets for pictures, noisemakers, and squeeze bottles. Sources and prices of items used in the program are listed.

## Bibliography:
## Physical Education/Perceptual-Motor/Recreation Activities

@30. Ackerman, Jeanne V. Play the Perceptual Motor Way. Seattle, Washington: Bernie Straub Publishing Company, Inc., and Special Child Publications (4535 Union Bay Place, N. E., 98105), 1975. 90 pp. $3.95.

Games in six areas of perceptual-motor development are included in this book: body image, balance, laterality and directionality, locomotion, eye-hand coordination, and rhythm. Basic skill levels for each area are listed developmentally. Perceptual-motor activities can help the learning disabled child gain self control, improve motor performance, and improve self concept.

@31. Adkins, Patricia G. Structured Experiences for Developmental Learning. El Paso, Texas: Learning Resources Press (609 La Cruz Drive, 79902), 1972.

Ten abilities that the child must acquire to develop language skills are defined, signs of deficiency noted, and teaching approaches to enhance acquisition of these abilities described. Specific remedial exercises and activities to aid in developing needed abilities are suggested.

+32. Blos, Joan W. Rhymes, songs, records, and stories: language learning experiences for pre-school blind children. New Outlook for the Blind, 68(7): 300-307, September 1974.

Traditional nursery literature is explored as being a good language learning experience. Sources are suggested, as are hints for presenting them. Recorded materials are also included.

33. Burie, Audrey Ann, and Mary Ann Heltshe. Reading with a Smile: 90 Reading Games That Work. Washington, D. C.: Acropolis Books, Ltd. (Colortone Building, 2400 17th Street, N. W., 20009), 1975. 200 pp. $9.95.

Designed for use in an educational environment with preschool children through age eight, this book contains reading readiness games for developing visual motor skills, visual discrimination, and perception. Games are also intended to teach phonetic analysis, dictionary skills, and other prerequisites for reading.

34. Cooking with the Kids. El Paso, Texas: Early Learning Center (1308 Zuni Street, 79925). $1.50.

A classroom cookbook of simple recipes prepared and tested by preschool children.

@35. Cratty, Bryant J. Developmental Games for Physically Handicapped Children. Palo Alto, California: Peek Publications (Box 11065, 94306), 1969. 52 pp.

Games presented in this book are divided into five sections: sensory motor stories appropriate for younger and/or more severely handicapped children;

swing ball games for children in wheelchairs who have limited movement; string ball games for children with more movement ability; partner games; and combination games utilizing components from previous sections. General principles for adapting games are given.

+36. Eggleston, Patricia J., and Mary Knox Weir. Water play for preschoolers. Young Children, 31(1): 5[illegible], November 1975.

Values of water play and techniques for presenting the activity to children are discussed. Protection for child and classroom are described. Activities include water and soap, water and color, and water and other substances.

+37. Fahler, Dorothy. Crafts for parents and their physically handicapped children. The Pointer, 17(2): 150-153, Winter 1972.

Gives steps for introducing art activities to preschool physically handicapped children. Coloring, cutting, and clay modeling are included. This is applicable to severely handicapped and multiply handicapped children.

38. Fox, Barbara. Through the Year: Art Projects for Primary Age Children. Skokie, Illinois: Priority Innovations, Inc. (P. O. Box 792, 60076), 1970. 110 pp. $3.25.

Art projects that have been used successfully in regular and special education classrooms at the primary level are presented. Activities are centered around the seasons and holidays and require only readily-available supplies.

39. Games Kids Like--40 Tested Ideas for Speech and Language Therapy. Tucson, Arizona: Communication Skill Builders, Inc. (817 East Broadway, P. O. Box 6081-N, 85733). $15.00.

Developed by a speech and language pathologist, these activities are designed to make language learning both fun and efficient. Each game has one or more behavioral objectives, so that desired results can be specified in performance terms.

40. Griswold, Patricia A. A Program Outline for Parents and Their Children, Ages 3 Months to 3 Years Having Cerebral Palsy. Indianapolis, Indiana: United Cerebral Palsy of Central Indiana (615 North Alabama Street, 46204), 1972. 73 pp. $3.00.

This outline presents activities on which parents and their young children with cerebral palsy can work together to develop children's emotional, mental, and social habits. Each of the 30 activities includes objectives, motivating activities, equipment needed, and an illustration. Rub-a-dub dub, water play, talk about pictures, pop beads, cardboard box train, and peg set are some of the 30 activities.

41. Langdon, Grace. Your Child's Play: Interests, Materials, Facilities, Friends. Chicago, Illinois: The National Easter Seal Society for Crippled Children and Adults (2023 West Ogden Avenue, 60612), 1957. 25c.

Suggests ways of determining play interests of child and parent. Materials and activities for the handicapped child's play are detailed.

42. Lehman, Carol. Play therapy for the hemiplegic child. Physical Therapy, 48: 1395, December 1968.

Describes and pictures "going fishing." Use of a velcro strap around child's forearm puts the arm through functional range. Needed materials are listed.

*43. Losleben, Jeanne, et al. Sensory-Integration and Motor Planning Activities for Handicapped Children. Las Cruces, New Mexico: New Mexico State University, n.d. 15 pp. (ED 108 450 $1.58 papercopy, $0.76 microfiche)

Offers suggestions to parents for activities that can be done at home to improve the sensory motor integration of children with cerebral palsy or other physical or mental handicaps. Includes directions for activities to improve posture, balance and coordination, and walking.

44. Lowell, Edgar L., and Marguerite Stoner. Play It by Ear. Los Angeles, California: Educational Materials Department, John Tracy Clinic (806 West Adams Boulevard, 90007). $3.50.

Auditory training games for young hearing impaired children.

+45. Mandelbaum, Jean. Creative dramatics in early childhood. Young Children, 30(2): 84-92, January 1975.

Offers suggestions for teachers of nursery through second grade as to developing a creative dramatics program from elements already in the curriculum.

*46. One More Way: Project in Early Childhood/Special Education. Wichita, Kansas: Kansas State University, and National Center for Improvement of Educational Systems (U. S. Office of Education, Washington, D. C.), 1971. 142 pp. (ED 075 975)

The problem of having learning-disabled children in the regular classroom is discussed, and guidance in diagnosing and remediating problems associated with learning disabilities is offered. The major portion of the book suggests activities to strengthen visual, auditory, and motor skills and body image, laterality, and directionality.

47. Ounce of Prevention: Activities for Preschool Children. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102). $0.35.

Booklet consisting of a variety of activities to be used by parents with preschool children.

48. Pennella, Louis J. Physical Education Curriculum Guide. Buffalo, New York: St. Mary's School for the Deaf, n.d.

The curriculum guide contains a section on physical education for pre-primary grade school boys (ages five and six years). The curriculum is primarily concerned with development of a foundation of physical fitness. Activities include jumping (rope, over obstacles), running (all directions), throwing, kicking (at targets, for distance, soccer ball), mime, tumbling and gymnastics (forward and backward rolls, frog stand, balance beam), ball skills and simple games (leap frog, drop the handkerchief).

+49. Shea, Ed. A home guide of arts and activities for preschool hearing-impaired children and others. Rehabilitation Literature, 36(12): 376-380, 385, December 1975.

Suggests activities that can be selected by parents to encourage mental, physical, and creative growth of hearing-impaired children. Activities include finger painting, coloring, clay, string painting, cutting and gluing, and driving and pulling nails.

+50. Stevens, John L. Homemade foot placement ladder. Physical Therapy; 56(3): 309, March 1976.

Describes construction of a foot placement ladder used to assist young handicapped children practice creeping and walking. The ladder allows children to practice in correction of gait defects and is easy to transport.

51. Surtees, Olive B. Springboards as an aid to treatment of children with abnormal motor development. Physiotherapy, 58: 175-176, May 1972.

Three sizes of springboards are described and pictured, and the ways in which such boards are useful are explained. Ataxic and athetoid children are considered most likely to benefit from springboards. A progressive table of exercises is suggested for a four-year old ataxic child.

52. While You're At It 200 Ways to Help Your Child Learn While You Do Your Everyday Work. Jericho, New York: Nassau County Board of Cooperative Educational Services, 1972. 200 pp. (Available from Ann Anderson, Reston Publishing, 11480 Sunset Hills Road, Reston, Virginia, 22090. $9.95.)

This collection of 200 activities parents can use with their children at home is printed on 6" x 8" index cards and arranged in five sections: (1) hints on handling behavior problems, (2) activities for the child while the parent does household tasks, (3) games for long rides or long waits, (4) outdoor activities, (5) activities for special times, such as bedtime. Activities are detailed and illustrated.

## Abstracts of Additional Curricula and Activities

Antey, John W. Sing and Learn: Simple Songs and Rhythms that Retarded Children Can Enjoy While Learning Basic Lessons. New York: The John Day Company (62 West 45th Street, 10036), 1965. 48 pp.

This book of simple songs related to everyday life includes teaching instructions designed to make them more meaningful to mentally handicapped children. One section is devoted to music for activities such as hopping, skipping, marching, etc. Also included are directions on how to make simple rhythm instruments and a unit on use of toy pianos and tape recorders as teaching aids. Although the songs were written primarily for use with special education classes, they are also appropriate for preschool programs.

Arbuckle, Wanda Rector, and George L. Cornwell. Moving and Making Believe for Developing Psychomotor Skills--A Tool for Early Childhood Education Teachers. San Rafael, California: Academic Therapy Publications (1539 Fourth St., 94901), 1975. 41 pp.

The recent interest in motor development of young children has emphasized that motor competency is an important contributor to social, perceptual, and cognitive competency. This book was developed to aid teachers in incorporating movement experiences into the regular classroom curriculum. Movement activities explored in the book can also be used as a part of the physical education class. All activities in the book are based upon the actual characteristics and movements of birds. The child pretends he is a different bird while exploring 14 psychomotor skills: balance with movement (cardinal grosbeak), balance with movement-half squat position (crow), auditory perception and movement (robin), relaxation (cowbird), differentiation (killdeer), laterality (woodpecker), space perception (curved-billed thrasher), space perception--over and under (Steller's jay), midline cross (passenger pigeon), combination of laterality and vertical midline (loon), ocular pursuit, fixation (hawk), tactile sensitivity (quail), differentiation (oriole), skill areas (tumbler pigeon). The book is fully illustrated.

Birkenshaw, Lois. Music for Fun, Music for Learning. Toronto, Canada: Holt, Rinehart and Winston of Canada, Limited, 1974.

Movement and rhythm are seen as vital factors in the growth of children. Therefore, music should be included as an integral part of each child's life, both in and out of school. The activities described in this book were designed to help children acquire motor, auditory, and rhythmic skills through songs, dances, games, rhythm activities, and speech activities. The author reports that all activities have been successfully tried with both handicapped and non-handicapped children, since each child can participate at his own level. Thus, the book is useful to teachers in integrated classrooms. Activities have been placed in sections according to the general theme or purpose of each activity: relaxation; coordination, spatial relationship and body rhythm; listening skills; singing and songs; speech, poetry and poems; painless learning with songs, poetry and movement; creativity; notation; instruments; and records and books for teacher

and learner. Individuals using the books should choose a few activities from each section for each music period, rather than following the book sequentially.

Campbell, Claire, and Betty Ohlrogge Dabbs. Easy Art. Cincinnati, Ohio: Educational Horizons Publishers (492 Pedretti, 45238), 1974. 107 pp.

This book contains 50 easy-to-do art lessons. Each lesson provides a separate developmental task programmed into step-by-step procedures and illustrated with photographs and drawings. Contents allow an individual to make choices among many manipulative experiences using various easily attainable materials. Although Easy Art was written for teachers of individuals with learning problems, preschool or elementary classes, ideas and materials can be easily adapted by therapeutic recreators and others who use art activities with individuals having learning problems. Through such media as clay, crayon, paste, paper, paint, cloth, puppets, building blocks, dye, tissue, glue, chalk, and finger paint, and activities such as sewing, weaving, painting, rubbing, printing, and collage, a sense of perception and an appreciation for art can develop. To quote the authors, "Art is as natural as humming. It is only when someone tells us we are out of tune that we stop."

Campbell, June H. Square Knots for Children: Johnstown, Pennsylvania: Mafex Associates, Inc. (111 Barron Avenue, 15906), 1972. 60 pp. $3.95.

Macrame, the art of knotting, is the subject of this how-to book for teachers and therapists who work with handicapped or non-handicapped children in the primary and elementary grades. Among the benefits of using macrame as a learning or therapeutic activity are: it provides structured visual-motor tasks, it increases flexibility of fingers and hands, the ability to follow directions is enhanced, it emphasizes left-hand discrimination and recall of pattern, and immediate success is realized. Materials and directions are provided for a variety of projects, such as jar covers, belts, wall hangings, and holiday decorations. 95 pictures illustrate the book.

A Child's Garden: A Guide for Parents and Teachers. San Francisco, California: Chevron Chemical Company, Ortho Division, 1974. 45 pp.

This guide is neither merely a "how-to-do-it" book nor a bible on gardening; readers are expected to be imaginative, creative, curious and resourceful. It describes Children's Adventure Garden at the University of California's Blake Garden, and contains a teaching guide for use with the company's film "Growing, Growing." Basic principles of gardening are telescoped in four pages of "A Plant Called Joey Answers Some Questions." Importance of auxins (growth hormones), fertilizers, and organic matter are explained. A "Why Don't We Find Out" section contains experiments to find facts about soil drainage, air in soil, and root development in various types. A short course in propagation by cuttings shows that a four year old can share in the marvel of regeneration. "Exploring the Vegetable World" gives advice on setting up a garden laboratory, reading catalogs, free catalogs to send for, and information helpful in growing specific

vegetables. Organizations involved in gardening or horticulture are listed and briefly described.

Flahive, Michael J., et al. Language Development - Perceptual Motor Training Program. Muskegon, Michigan: Muskegon Regional Mental Retardation Center (ESEA Title I 89-313, State Program Number 724 PL), n.d. Available in xerox form from IRUC, $10.95.

The Language Development-Perceptual Motor Training Program at the Center aims to improve the functioning level of each individual child and to provide staff with methods for dealing with severely retarded children on the level of the children's communicative abilities. The step-by-step curriculum presented in this booklet was developed to meet these aims. Program areas, color-coded for the user's convenience, include reinforcement, motor imitation, receptive vocabulary, conceptual-receptive vocabulary, and verbal imitation. Each program area consists of a series of developmental steps; each developmental step explains tasks to be completed, procedure, reinforcers, materials needed, and suggested place for the activity. A final section lists and illustrates sensorimotor training materials. Authors feel that this program would be feasible for use by parents and teachers of mentally retarded children outside the institutional setting.

Irvin, Sally A., Michael Giammatteo, and Robert R. Rath. Improving Motor-Perceptual Skills. Corvallis, Oregon: Continuing Education Publications (Waldo Hall 300, 97331), 1970. 124 pp.

This step-by-step guide for kindergarten teachers is aimed at augmenting skills which tend to improve learning. It is based on results from a five-year study in six Portland, Oregon schools to determine whether working directly with kindergarten children to improve performance on motor-perceptual tasks would affect reading ability at the end of grades one, two and three. Involvement of the senses, especially vision, in various activities is stressed. Children are encouraged to use their eyes as steering mechanisms, and then to develop eye-hand movements in combination. Included in the program of activities are those which develop general coordination, balance, eye-hand coordination, and sensory perception. Definitions of terms, equipment used in activities, records and tapes used in activities, teacher checklists, a bibliography, and transcripts of tapes to be used are included in the appendix.

Means, Louis E., and Harry A. Applequist. Dynamic Movement Experiences for Elementary School Children. Springfield, Illinois: Charles C. Thomas Publisher (301-327 East Lawrence Avenue), 1974. 515 pp.

Utilizing both traditional physical education methods and newer ideas from movement education, the authors have prepared this book as a teaching tool and guide. The book is intended for use by teachers, supervisors, school administrators, parents, and physical education students. Practical program ideas and progressions are given for children in preschool, kindergarten, and grades one through six. Activities are presented in the areas of physical fitness, movement education, rhythms, games and sports. In

addition, the book deals with administrative concerns, such as program planning, equipment, and activities for limited areas. Appendices list sources of further information.

Miklonis, Lillian, Jeanne Huffman, Michael Gaddy, Joyce Gillis, Robert Heater. Leisure Time Activities for Deaf-Blind Children. Northridge, California: Joyce Motion Picture Company, 1974. 124 pp.

This manual provides nearly 100 separate projects, games, learning experiences and activities especially planned and outlined for sharing and communicating with deaf-blind children. Parents, siblings, relatives and friends of deaf-blind children can use the Tadoma method. Through this process a child feels vibrations of a speaker's voice and is thus encouraged to develop language. Although sections on meal time, grooming and dressing activities are included, leisure time activities comprise the major portion of the manual. Each page lists purpose, materials, procedures, observed behaviors for an activity. Space is provided for comments which can later serve as a record of pupil progress. Illustrations of the American manual alphabet signs, definitions of terms, equipment glossary, and a list of motion pictures and books provide users with a variety of ways to help each child develop communication. Selected activities are coordinated with the Quick Flick, hand-held or table top viewers which allow motion at any desired speed. Instant replay, fast action, slow motion, instant forward or reverse, and endless loop are all incorporated into the Quick Flick system, also distributed by Joyce Motion Picture Company.

Noble, Judith A. Games Children Play and Learn From. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1973. 109 pp.

One way to provide for some of the individualized differences and abilities of young children while maintaining informality of approach is to individualize part of the instruction through the use of skill games on various levels. Games provide built in motivation and concrete learning experiences, and can be played independently so the teacher can give more attention to those who need extra help. This book offers detailed instructions for organizing, storing, and constructing games as well as a generalized list of sources of free and inexpensive materials. In addition to sections on reading and math games, there is a potpouri section which includes classification activities, puppets, flannel boards, puzzles, beanbag games, show and tell and tissue paper art. Games are cross-referenced in the appendix.

Pots & Pans Activities for Parent and Child: Activities for Preschool Multiple Handicapped Children. Springfield, Illinois: The Instructional Materials Centers of the Department of Exceptional Children, Office of the Superintendent of Public Instruction, n.d. 84 pp.

Although this compilation of action plans was designed for parents of multiple handicapped preschoolers, contents are appropriate for all children. Emphasis is upon preparing for their upcoming school experiences. The book covers three major areas: (1) basic concepts--i.e., naming and

identifying objects, sizes, patterns, colors, numbers, positions in space, and time; (2) language development--i.e., skills for good listening, questioning, developing a vocabulary; and (3) motor development--i.e., exercises to develop large and small muscles. Each area contains about 25 plans including purpose of each activity, materials needed, methods for teaching, and comments. Most materials are either found in the home or can be purchased at a small cost. An appendix indicates where materials can be purchased and their cost.

Riordan, Jennifer Talley. They Can Sing Too: Rhythm for the Deaf. Leavenworth, Kansas: Jenrich Associates, 1971. 67 pp.

Music has been accepted as an aid to language, social, and motor development. This book was written to help teachers of preschool (3-6 years) deaf children in teaching rhythm as a part of speech training. However, the book has also been found useful by teachers conducting music programs for socially maladjusted, emotionally disturbed, mentally retarded, and brain damaged children. The book is divided into four sections: short songs; large muscle, creative activities; games, dances and marches; and rhythm time-beats. Teaching suggestions are given at the end of each section.

Stecher, Miriam B., and Hugh McElheny. Joy and Learning Through Music and Music Improvisations. New York, New York: The Macmillan Co., Threshold Division (866 Third Avenue, 10022), 1972. 110 pp.

The authors describe this as a sourcebook for those concerned with early childhood education who want ideas for music programs. The "why" of music in the classroom is discussed, followed by activities in the following areas: singing, making and playing musical instruments, movement and rhythm, music games, and improvisation. Anecdotes of what actually happened in a variety of classrooms are related, rather than lesson plans. Appendices include songs, sources for records, and sources of further reading.

Stein, Joe. Show Me! Campbell, California: Enrichment Materials Co. (P. O. Box 812, 95008), 1973.

In this illustrated handbook, 52 movement activities are suggested, utilizing a variety of equipment. This is an "idea book", intended to stimulate the creativity of teachers and physical educators in providing activities that improve the child's basic motor skills. Activities progress from very easy to difficult. Author refers to each piece of equipment as a "learning station", where children can explore and utilize the equipment in many different ways. Activities are suggested for the following equipment: ropes, tires, balance beam, boxes, hoops, poles, steps, hurdles, balls, mats, and stilts. Instructions are included for constructing additional equipment.

Steiner, Violette G., and Roberta Evatt Pond. Finger Play Fun. Columbus, Ohio: Charles E. Merrill Publishing Co., 1970. 150 pp.

This collection of finger plays is designed to help stimulate language development in young children. Through word repetition, finger plays help children learn to listen, to use language and to be aware of the quality of rhyming words. They help children to learn to love language, to have fun with words, to communicate with others, and to begin to develop a sense of humor. Chapters include counting, animals, people, the world around us and holidays. Material in each chapter is arranged according to the interest level and verbal ability of children approximately two to six years of age.

Taylor, Carla. Rhythm: A Guide for Creative Movement. Palo Alto, California: Peek Publications, 1974. 86 pp.

This book describes techniques in movement and dance designed to help develop a strong, positive self-image and a congenial group atmosphere in young children. The author's six-step approach includes (1) getting the group ready (Warm Up), (2) using the total body (Firm Up), (3) building self-confidence and communication (Build Up), (4) relaxation (Let Up), (5) individual dances (Zoom Up), and (6) the closing (Sum Up). Sections on rhythm games and dances while seated, sequences for preschool children, classroom related subjects, props, and helpful hints are included. A section on physically handicapped children includes suggestions for youngsters in wheelchairs or with limited limb movement, hearing impaired, mentally retarded, visually impaired, and aged participants. Helpful appendices include suggested starters and records to accompany sequential steps, a record bibliography, and appropriate references.

# EARLY INTERVENTION:
# TOYS, BOOKS, AND OTHER MATERIALS

## Toys and Play Equipment

A toy is a learning material used by the child to gain understanding of concepts, relationships, and the world. Toys should be attractive, durable, non-toxic, challenging, and fun; they do not have to come from a toy store to be considered toys. The following listing of toys and play equipment represents both items that can be constructed and those that must be purchased:*

- Tricycle--stimulates large muscle development, use of vision.
- Playground Equipment--(slide, swing) encourage use of large muscles and freedom of movement.
- Balance Beam--helps child balance; can be rested on small blocks or leaned up against a crate to encourage crawling up.
- Pull Toys--encourages reaching and movement, eye-hand coordination; can be made by attaching string to a box or tin can.
- Push Toys--encourage child to walk, develop large muscles.
- Pegboards and Puzzles--teach shapes, sizes, and relationships.
- Hand or Finger Puppets--enhance language and self-expression.

Common items found in most households that can enhance fine motor development and sense training through a variety of uses include:

Pots and pans
Milk cartons
Measuring cups
Paper cups and plates
String
Old magazines
Empty spools
Cigar boxes
Clothes
Discarded clothing
Flashlight
Large boxes
Tires
Real tools

*This list was adapted from material presented in Correspondence Learning Program for Parents of Preschool Deaf-Blind Children (John Tracy Clinic, 806 West Adams Boulevard, Los Angeles, California, 90007).

Examples of three child-use materials which are readily purchased in a toy store or from a manufacturer are:

Art Dart. New York, New York: Synergistics Research Corporation (30 West 22nd Street, 10010). $8.95.

This velcro-covered plastic dartboard is approximately 12 inches in diameter and can be hung on a wall or placed on the ground. Brightly colored velcro-covered balls are used in place of darts. They may be thrown at the hanging dartboard or dropped onto the board on the ground. This type of dartboard could be safely used in places where sharp objects are prohibited or not advisable such as psychiatric facilities, prisons, or with small children. The game of darts develops throwing skills, eye-hand coordination, scorekeeping skills, range of motion and visual perceptual ability. It may be played individually or with other people.

Down the Drain Game. Minneapolis, Minnesota: Lakeside Industries, A Division of Leisure Dynamics, Inc. (55435), 1972. Approximately $4.00.

Up to four impaired and non-impaired children ages five through ten can play this game. The game consists of a cardboard cylinder ("drain pipe") topped with a plastic grate; four fishing poles, each with a magnet on the end of the line; and assorted plastic coins in various denominations. Taking turns, players try to raise as many coins as possible from the bottom of the drain and through the grate. The player whose coins total the highest numerical value at the end of the game is the winner. The game enhances such aspects of development as eye-hand coordination, counting, balance, judgement of size and distance, and cooperative behavior. A relatively steady hand is required to successfully participate, but children who are not severely impaired in this respect could be assisted by resting their arms on a pile of books or bracing their arms against a wall. Players who cannot hold the small fishing pole could tape it to their hands. The game would be appropriate for mentally retarded children learning number concepts or needing eye-hand coordination training, children with muscular dystrophy who do not have severe upper extremity weakness, non-spastic children with cerebral palsy, and children with a variety of other impairments.

Scooter Board. (Available from most physical education/athletic equipment dealers.)

Scooter boards are commercially available in a variety of shapes and sizes. Square scooter boards are usually constructed of heavy-duty plywood, 12" or 16" square, with four casters mounted on the bottom. The scooters may be padded, have rounded corners, or have handholds on the sides. Prices

vary from $8 to $28. Circular scooter boards may be plain heavy-duty plywood, or made by inserting the plywood into a rubber bicycle tire. These scooters are from 18" to 25" in diameter and are priced from $10 to $43. Children can position themselves on the scooters in many ways--kneeling, sitting cross-legged, sitting with legs extended in front, lying on stomach. Scooter boards offer mobility experiences to children with a variety of physical impairments. They have also been used successfully with hearing impaired children in teaching directionality concepts. Physical educators/athletic equipment dealers that supply scooter boards include:

J. A. Preston Corp.
71 Fifth Avenue
New York, New York 10003

GSC Athletic Equipment
600 N. Pacific Avenue
San Pedro, California 90733

J. L. Hammett, Co.
Hammett Place
Braintree, Mass. 02184

U. S. Games, Inc.
P. O. Box EG 874
Melbourne, Florida 32935

## Bibliography on Toys and Play Equipment

@1. Calkin, Abigail B. Pebbles, Mops and Thimigs: Common Objects that Become Toys. San Rafael, California: Academic Therapy Publications (1539 Fourth Street, 94901), 1974. 63 pp.

Toys and activities that enhance language, motor, and academic skills are described in this publication. Each of the 53 toys has a description, list of materials needed to make it, and suggestions for using it.

*2. Ferguson, Sue, et al. Onward, Upward and Outward. Springfield, Illinois: Illinois State Office of the Superintendent of Public Instruction; and Lombard, Illinois: West Suburban Association for the Hearing Handicapped, 1971. 250 pp. (ED 057 531)

Intended to supply parents and teachers of preschool-aged hearing impaired children with materials and books to provide supplemental expefiences for the child. Toys are analyzed in chart form, including water and sand toys, games, woodworking supplies, and language materials. Other sections list books and on-going programs.

@3. Gallahue, David L. Developmental Play Equipment for Home and School. New York, New York: John Wiley & Sons, 1975. 113 pp.

This book is a compilation of homemade and inexpensive developmental play equipment ideas that may be used in the home and school with preschool and elementary age children. The focus is on movement experiences and motor development. References and equipment companies are listed in the appendix.

4. Homemade Toys and Activities for Preschoolers: Media List. Anchorage, Alaska: Alaska Head Start Special Services Project (3710 East 20th Avenue, 99504).

Describes a variety of low-cost, innovative Alaska Head Start produced media, materials, and idea pamphlets designed for use by parents, paraprofessionals, and pre-service teachers.

5. Learn and Earn Together Catalog. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 58102). $2.00.

Shows age-appropriate developmental stimulation materials (toys, books, records) for parents to use with preschool children.

@6. Seabury, Barbara Jeanne. Water play-table. Exceptional Parent, 1(6): 15-17, April-May 1972.

Presents guidelines for making a water play-table out of triple-wall corrugated cardboard, waterproofing material, and a small vinyl dishpan.

7. Thorum, A. J. Instructional Materials for the Handicapped: Birth Through Early Childhood. Salt Lake City, Utah: Olympus Research Corporation (1670 E. 1300 S., 84105). 200 pp. $7.50.

Suggests criteria for the selection of toys, games, educational kits, and activity guides. Includes a listing of over 600 manufacturers and vendors of toys and games, descriptions of over 275 educational kits, and an annotated bibliography of 80 activity guides.

8. Toy Book. Indianapolis, Indiana: Alpha Chi Omega National Headquarters (3445 Washington Boulevard, 46205), 1967. 35 pp. Free.

This is a collection of self-help toys for handicapped children made easily and inexpensively at home. Toys are designed to develop muscle coordination, teach self-dressing, and finger and elbow dexterity, stimulate visual perception, encourage hand-eye coordination, motivate speech, and provide dramatic play.

9. Toys and Other Things for Children By Parents. Fargo, North Dakota: Southeast Mental Health and Retardation Center (700 1st Avenue South, 68102). $2.00.

A manual describing toys and activities to be used by parents to promote their child's development.

10. Toys for Early Development of the Young Blind Child. Springfield, Illinois: Special Educational Materials Center, State of Illinois, Office of the Superintendent of Public Instruction (62706). Free.

#11. Van Etten, Carlene. Handicapped Children in Head Start Series. Directory of Head Start Instructional Materials. Reston, Virginia: Council for Exceptional Children (1920 Association Drive, 22091), 1974. 24 pp. $1.75.

This annotated bibliography of instructional materials contains information about instructional objectives, cost of materials, and distributor. Described are how materials can best be used to enhance child's development.

+12. Whiren, Alice. Table toys: the underdeveloped resource. Young Children, 30(6): 413-419, September 1975.

Groups table toys into four categories: construction activities, reconstruction activities, classification activities, and coordination activities. Specific materials in each category are described.

+13. Zimmerman, Lyndall D., and Gloria Calovini. Toys as Learning materials for preschool children. Exceptional Children, 37(9): 642-654, May 1971.

Discusses preschool education and materials in terms of normal children, with references to handicapped children. The purposes and uses of toys are presented. In chart form, authors illustrate characteristics, needs, and suggested activities and materials for children in the following age groups: 1-2 years, 2-3 years, 3-4 years, and 4-5 years.

## Books

Although very young children cannot be expected to read yet, they certainly enjoy looking at pictures, having stories read to them, and talking about stories they have heard or pictures they have seen. Some aids to choosing books are librarians, teachers of young children, and national organizations concerned with young children. Also see:

Aids to Choosing Books for Children. New York, New York: The Children's Book Council (175 Fifth Avenue, 10010). 40¢.

Books for Children. New York, New York: Bank Street College Bookstore (69 Bank Street, 10014). Free Catalog.

Newton, Mary Griffith. Books for Deaf Children (Nursery through Grade 9). Washington, D. C.: Alexander Graham Bell Association (3417 Volta Place, 20007). $3.20.

Readers. Chicago, Illinois: National Council of Teachers of English (508 South Sixth Street). $1.00.

Children's magazines, too, have lots of pictures and stories. The following are available in braille:

Jack and Jill
1100 Waterway Boulevard
Indianapolis, Indiana 46202

My Weekly Reader
George Brown, Editor
Middletown, Connecticut 06457

Handicapped children, unlike non-handicapped children, have very few role models in the books that are available to them. Yet, they need these models to help them understand and clarify feelings about their families, peers, and themselves. Several new books fulfill this need.

Fassler, Joan. Howie Helps Himself. Chicago, Illinois: Albert Whitman and Company, 1975. 32 pp.

> This is a children's story, written very simply in large print and illustrated on every page. The story is about Howie, a little boy with cerebral palsy who uses a wheelchair to get around. Pictures and text tell about where Howie lives, his family, things he does for fun, places he likes to go, and the school he attends. Because his arms and legs are weak, Howie cannot move his wheelchair by himself, but this is his greatest wish. At the end of the story, Howie achieves his goal. The author hopes that this book will give handicapped children the opportunity to identify with a picture-book child who is handicapped, give siblings of handicapped children a chance to share their feelings, and encourage growth of positive attitudes on the part of non-handicapped children.

Grealish, Mary Jane Von Braunsberg; and Charles A. Grealish. The Sneely-Mouthed Snerds and the Wonderoctopus. Syracuse, New York: Human Policy Press (P. O. Box 127, University Station, 13210), 1975. 32 pp.

This story shows the foolishness of prejudice and makes a strong case for normalization, deinstitutionalization and mainstreaming. It can be used by children, parents, teachers and others who work with children. Sneely-Mouthed Snerds felt scared when they saw a Snerd who was different, and, much the way people do, they acted mean when they were scared. Little did they know that picking on other Snerds made the Wonderoctopus, a frightening monster, grow bigger. When Willie the Two-Poled Snerd (who needed two poles to help him walk) moved to town, the other Snerds teased him and said he had to live in the buildings for More-Different Snerds. But Willie used his poles to ward off the Wonderoctopus, and the Snerds made Willie king. His new laws allowed Snerds to be different, forbade picking on other Snerds, and closed the Buildings for More-Different Snerds forever, sending their inhabitatns back to their homes.

Grealish, Mary Jane Von Braunsberg, and Charles A. Grealish. Amy Maura. Syracuse, New York: Human Policy Press (P. O. Box 127, University Station, 13210), 1975. 32 pp.

Amy Maura is a ten year old girl with cerebral palsy. She lives at home with her mother, father, two brothers, and sister. This book, written and illustrated for other children to read, tells how Amy Maura saved her baby brother and sister who were trapped in a house fire. The book shows Amy as more like other children than unlike them, but she has never had a friend and wants very much to be accepted by her peers. Initially Amy Maura tells the reader that children laugh at her name, and she decides to change it to Suzy. When she is in the hospital recovering from injuries sustained in the house fire, however, she confides her real feelings to her father--it is not her name but her condition that children laugh at, and she hates her cerebral palsy, not her name. Amy Maura was written about the authors' own real-life Amy Maura and is not only a story about one child, but a plea for understanding on behalf of all handicapped children.

Ronnei, Eleanor C., and Joan Porter. Tim and His Hearing Aid. Washington, D. C.: Alexander Graham Bell Association (3417 Volta Place, N. W., 20007). $1.50.

Picture book for children who wear hearing aids.

Wolf, Bernard. Don't Feel Sorry for Paul, second printing. Philadelphia, Pennsylvania: J. B. Lippincott Co., 1974. 96 pp.

Paul Jockimo is a seven-year-old boy born without complete hands and feet. He wears two leg prostheses and a prosthetic on his right arm, which permit him to walk, run, write, eat, and do all the other things that seven-year-olds do. This book shows Paul

living a normal life with his parents and two sisters. The many photographs and text describe Paul putting on his prostheses, actively participating in horse-back riding, helping with cooking and food preparation, playing with his sisters, riding his bike, going to school with non-handicapped children, having a birthday party, receiving occupational therapy, and just being a seven-year-old. The book is described as juvenile literature and would probably be suitable for fourth grade readers through adults; because of the many pictures, however, younger children could also enjoy this book. As the title indicates, Paul and his family do not want us to feel sorry for him--they want us to see him as a person.

## Manufacturers and Distributors of Toys, Books, and Other Materials for Early Childhood

| | |
|---|---|
| Childcraft Education Corporation<br>20 Kilmer Road<br>Edison, New Jersey 08817 | climbers, blocks, carts, tools, toys, musical instruments, records, educational aids |
| Community Playthings<br>Rifton, New York 12471 | storage units, blocks, climbers, playground equipment, toys, books, records |
| Constructive Playthings<br>1040 East 85th Street<br>Kansas City, Missouri 64131<br>(816) 444-4711 | playground equipment, craft supplies, books, educational aids, puppets, peg-boards, dolls, storage units |
| Creative Playthings<br>Division of CBS, Inc.<br>Princeton, New Jersey 08540 | toys, climbers, blocks |
| Developmental Learning Materials<br>7440 Natchez Avenue<br>Niles, Illinois 60648 | educational aids, flash cards, peg-boards, puppets |
| Early Action Products<br>GSC Athletic Equipment<br>600 N. Pacific Avenue<br>San Pedro, California 90733<br>(213) 831-0131 | soft forms, mats, shapes, balls, trampolines |
| Educational and Indoor Athletic Play Equipment<br>Holbrook-Patterson, Inc.<br>170 South Monroe Street<br>Coldwater, Michigan 49036<br>(517)278-2411 | climbers, carts, play furniture, toys, blocks, storage units |

| | |
|---|---|
| Golden Press<br>Education Division<br>Western Publishing Company, Inc.<br>150 Parish Drive<br>Wayne, New Jersey 07470 | curriculum related books preschool through secondary |
| Lyons<br>530 Riverview Avenue<br>Elkhart, Indiana 46514<br>(219) 294-6602 | records, books, musical instruments |
| Skill Development Equipment Company<br>1340 North Jefferson<br>Anaheim, California 92807<br>(714) 524-8752 | soft bats, forms, shapes, mats, furniture |
| Theraplay Products<br>J. L. Hammett Co.<br>Hammett Place.<br>Braintree, Massachusetts 02184 | climbers, trampolines, obstacle courses, mats, tricycles and carts |

FILMS

Basic Movement; Movement Awareness; Manipulative Skills; Functional Fitness (Super 8mm, silent, color, loop film cartridges).
Ealing Productions, 2225 Massachusetts Avenue, Cambridge, Massachusetts, 02140.

A series of 24 loop films, each three to four minutes long, depicts kindergarten to second grade children in action, to show children and teachers a wide variety of activities and equipment with an entire class participating at one time. Problem-solving approaches are used throughout. Basic Manipulative Activities includes yarns, balls, hoops, ropes, and wands, rolling and fielding, foot-dribbling and kicking, bouncing, hand-dribbling and catching, volleying, hitting, and throwing and catching; Functional Fitness includes balance, arms and abdominal strength, leg strength, flexibility, agility, and coordination.

A Child Creates (16mm, sound, color, 7 minutes).
Soundings, 2150 Concord Boulevard, Concord, California, 94520. Sale $85; Rental $8.00 for three days.

A philosophy of art education for young children is presented. Two kindergarten children touch and feel many different animals at a children's zoo and then create their impressions the next day at school with paints, felt-tip pens and crayons. Their work exhibits a freshness and spontaneity not often found in the art of those who have received coaching in how to draw real-life objects. A child creates naturally with a richness of color and a freedom of form. The role of the adult in fostering this creativity consists of providing enriching experiences and a free environment, of listening, and answering each child's questions, of allowing such a child to make mistakes and recognizing each as a person in his/her own right. A child responds in proportion to the depth and warmth of stimulation received. Finding beauty in art, a child develops other potentialities and seeks to expand awareness of the world.

Children Dance (16mm, sound, black/white, 14 minutes).
University of California, Extension Media Center, Berkeley, California, 94720.

Participants from kindergarten to third grade classrooms are shown in an unrehearsed dance session, as part of the regular curriculum in a pilot program in Washington, D. C. Children explore space, time, and force through dance improvisations. The film is designed for dancers and teachers who want to introduce dance in the classroom.

Concept Development in Outdoor Play (16mm, color, sound, 20 minutes).
Campus Film Distributors Corporation, 2 Overhill Road, Scarsdale, New York, 10583.

The outdoor environment can enhance many types of play, and a planned outdoor play program, which is the subject of this film has much to add to the total school experience. Such activities as water play, sand play

woodworking, music and rhythm and nature study are better carried on in the out-of-doors for a variety of reasons: children have more space and freedom to play, less clean-up is required afterwards, and noise during play is less noticeable outdoors. Concepts learned through engaging in play activities are demonstrated in the film. For example, hammering nails enhances hand-eye coordination; nature study teaches respect for living things through direct experience; play with large equipment (carts barrels, tires, logs) encourages dramatization and imagination, and sand play fosters use and practical knowledge of volume, weight, and shape. This film offers the viewer a wealth of activity ideas to enhance concept development of young children. Although no handicapped children appear in the film, all the activities shown would be entirely appropriate for these children as well.

Creative Body Movements (16mm, sound, color, 11 minutes).
Martin Moyer Productions, 900 Federal Avenue E., Seattle, Washington, 98102.

Primary grade children express themselves and develop perceptual-motor attributes through movement and a problem solving approach.

Feeling Good Comes First: Integrating Handicapped and Non-Handicapped Children (16mm, color, 10 minutes).
Outreach, c/o Salvin School, 1925 S. Budlong Avenue, Los Angeles, California, 90007. Rental $15.00 for three days.

Explores the Dual Educational Approach to Learning (DEAL), designed to help children develop skills, build independence, and learn to live together. This was filmed at the Salvin School (Los Angeles).

First Things First: Occupational Therapy and the Developing Child (16mm, sound, color, 15 minutes).
American Occupational Therapy Association, 6000 Executive Blvd., Rockville, Maryland, 20852. Purchase $99.50; Rental $15.00.

This film presents ways occupational therapists help developmentally disabled children learn motor, sensory, perceptual, social and psychological skills they need to grow to their fullest potential. Occupational therapists are shown helping developmentally impaired infants and children gain basic learning skills. Exploratory play techniques are demonstrated to mothers of infants diagnosed as needing help. Infant stimulation programs of this type are held by county health departments so parents can develop skills to help their children at home. Other therapists in the film work with developmentally disabled children in public school and clinic-based self-care programs, and in the home. Emphasis is on the importance of early detection and intervention, health maintenance, rehabilitation, and remediation in the comprehensive health care of children.

Hi -- Look Us Over (16mm, sound, color, 22 minutes).
Canadian Association for the Mentally Retarded, York University, 4700 Keele Street, Downview, Ontario, Canada.

Basic thrust of this film is on the important role of recreation, movement, play, and physical activity in total development of mentally retarded children. Presentation is developed around Canadian Centennial Athletic and Special Olympic programs. Specifically shown are floor hockey, swimming, outdoor games, special clinics, and cooperative activities. A general orientation and introduction to mental retardation is also presented.

In--Out--Up--Down--Over--Under--Upside Down (16mm, sound, color, 9 minutes).
ACI Films, 35 West 45th Street, New York, New York, 10036.

Each of these words is introduced and reinforced by sound, action, and the super-imposed word to an original and catchy musical score. Although this is one of eleven titles in the Starting to Read series designed to introduce words and concepts to beginning readers, there are many subtle and underlying implications for coordinating physical education and classroom activities in this area. Many of the activities presented to develop these particular concepts are play and activity oriented--swimming, camping, outdoor education, ball activities, stunts, and tumbling. In addition to being directly applicable to and usable in classrooms, many ideas of relating activities to teaching and/or reinforcing other concepts are provided which are effective with all children including impaired, disabled, and handicapped.

Innovations on Elementary School Physical Education (16mm, sound, color, 30 minutes).
Crown Films, West 503 Indiana Avenue, Box 890, Spokane, Washington, 99210.

Produced as part of an ESEA Title III Project granted Washington State University to conduct an experimental program in the elementary schools of Pullman, Washington, this film depicts a wide variety of activities and equipment for K-6 programs from ideas gleaned from Vic Dauer's world travels. Many of the activities, methods, procedures, devices, and approaches have been used successfully with children having various handicapping conditions (especially the mentally retarded).

Joy of Learning (16mm, sound, color, 28 minutes).
Columbia Forum Productions, Limited, 10621 Fable Row, Columbia, Maryland, 21044. Purchase $325; rental $25 per day.

This film concentrates on young children. Natural laws of child development, as identified by Maria Montessori, are explained; illustrated and applied. Sorting and matching colors and objects are presented as part of total pre-language and language developmental sequence. Later activities in this sequence discussed include guided discoveries in writing and extension into parts of speech and grammar. Emphasis upon physical experiences with language development may provide new ideas for teachers of mentally retarded and learning disabled children. Throughout the film focus is on certain choices within a carefully planned series of experiences--structured guidance using the framework of natural laws.

Learning to Learn (16mm, sound, color, 14 minutes).
AIMS Instructional Media Services, P. O. Box 1010, Hollywood, California, 90028.
Purchase $35; rental $15 for one to three days.

This documentary reveals how imaginative methods and materials instill the desire to learn in very young children. Materials developed by Maria Montessori and methods based on Jean Piaget's philosophy are integrated in a unique presentation. Creative and stimulating environments move children to explore and to new discoveries. Although sensory-motor development is emphasized, primary goal is care of and respect for the self and the surrounding world.

Movement Experiences for Primary Children (16mm, sound, color, 17 minutes).
Department of Instructional Media Distribution, Atgeld 114, Northern Illinois University, DeKalb, Illinois, 60115.

The need for children to move and to learn to move well is emphasized through a problem-solving approach to teaching.

Movement Exploration (16mm, sound, color, 22 minutes).
Documentary Films, 3217 Trout Gulch Road, Aptos, California, 95033.

The film shows the concept of movement exploration in action as it deals with various motor skills. Designed for K-6 teachers, it demonstrates a wide range of activities involving primary and intermediate children, including locomotor activities, ball handling, hula hoops, jump rope, apparatus, and spatial awareness. Each child is separately engaged in analyzing the problem and seeking a solution within the limitations of his own physical and mental abilities.

Sensorimotor Training (16mm, sound, color, 24 minutes).
Valdhere Films, 3060 Valleywood Drive, Kettering, Ohio.

Shows and describes philosophy and training methods used to help preschool children develop sensory skills and physical coordination. The Dayton, Ohio, public school program is used for demonstration.

Seven for Susie (16mm, sound, color, 13 minutes).
National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois, 60612.

Purposes, activities, and functions of seven different members of a rehabilitation team for an orthopedically impaired child are presented. Specialists who explain their specific role on the helping team included: (1) physical therapists, (2) special education teachers, (3) therapeutic recreation personnel, (4) social workers, (5) occupational therapists, (6) speech pathologists, and (7) psychologists. As head of the team, physicians are shown consulting with each member of the team. In addition to emphasizing and clarifying the cooperative and interdisciplinary nature of the team, this film has implications for counseling students about these fields and for recruitment purposes.

Special Children Special Needs (16mm, color, sound).
Campus Film Distributors Corp., 2 Overhill Road, Scarsdale, New York, 10583.
Purchase $225; Rental $25.

This film is about the New York University Medical Center, Institute for Rehabilitation Medicine's comprehensive approach to educating young multihandicapped children. Three adapted learning environments are presented: an infant setting; a preschool learning laboratory, and an outdoor therapeutic playground. The aim of each setting is to provide each child an education based on his/her individual strengths and handicaps. Every child's daily program is prescribed to afford the opportunity for effectiveness and competence in his/her world.

Thursday's Children (16mm, sound, color, 29 minutes).
Swank Motion Pictures, Inc., 201 South Jefferson Avenue, St. Louis, Missouri, 63166.

This film deals with the importance and influence of the first four years in a child's total growth and development. Although normal growth patterns are presented, emphasis is on deficiencies in which youngsters with normal intelligence exhibit abnormal growth patterns. Causes and effects of developmental lags and deviant behaviors are discussed in terms of predicting high risk youngsters with motor problems, gross and fine motor difficulties, communication problems, memory deficiencies, short attention span, distractibility, hyperactivity, poor hand-eye coordination, organizational disability, and emotional overlays. Assessment and diagnostic procedures at Miriam Diagnostic Pre-School (Webster Groves, Missouri) are presented in terms of major program objective--mainstreaming. Standardized test results are used as indicators and for supportive evidence while observation, learning profiles, and flexibility are stressed as major assessment procedures. Peer teaching is used, where a child strong in a given area or skill works with a child weak in that same area or skill. Limited free play provides opportunities for choices within boundaries. Much emphasis is placed on the role of the teacher as the key to controlling group interactions, promoting self-confidence, and relieving fears among children. Throughout the film importance of adaptability, flexibility, cooperation with other agencies, and individualization is stressed. This film is appropriate for any group--lay, student, or professional--to obtain practical information and insights into problems children face in growing and developing and ways to prevent and remediate these conditions.

A Time to Move (16mm, sound, black/white, 30 minutes).
Early Childhood Productions, Box 352, Charsworth, California, 91311.

This film focuses on the meaning of movement for three and four year old children. Movement is the first and deepest language of a child for its own sake and for what it achieves. Every skill shown consists of a group of coordinated simple skills. This was filmed at the University of California at Los Angeles Laboratory School.

Visual Perception Training in the Regular Classroom (16mm, sound, black/white, 23 minutes).
AIMS Instructional Media Services, Box 1010, Hollywood, California, 90028.

Shows how a program for training in visual perception can be integrated with the regular public school curriculum at the kindergarten and early elementary grade levels; techniques and principles also apply to Head Start Programs and those of residential facilities and day care centers. The film shows step-by-step training including use of three-dimensional materials and training in body awareness and directionality as well as two-dimensional pencil and paper exercises. Training is integrated with both receptive and expressive language skills with particular emphasis upon vocabulary denoting size, shape, position in space, and relationships in space. Areas discussed are: eye-motor coordination, figure-ground perception, constancy of visual perception, position in space, and spatial relationships.

Wilds, Thomas, compiler. Handicapped Children in Head Start Series. Directory of Head Start Audiovisual Professional Training Materials. Reston, Virginia: Council for Exceptional Children (1920 Association Drive, 22091), 1974. 120 pp. $3.50.

Annotated listing of audiovisual materials related to the education and care of young handicapped children. Full availability information in provided for each film.

*Special Article*

# A Home Guide of Arts and Activities for Preschool Hearing-Impaired Children and Others

ED SHEA

IN ADDITION to professional therapy that the preschool hearing-impaired child must receive, as soon and as regularly as possible, it is extremely important that parents take an active and continuing role in his therapy at home.

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*Mr. Shea is a New York State certified industrial arts and art teacher. He did undergraduate work at State Teachers College, Fitchburg, Mass., and graduate studies at State Teachers College, North Adams, Mass. He has taught in the related arts department of the Scarsdale (N.Y.) Public Schools for 18 years*

*During 1974-1975 the Scarsdale Board of Education granted Mr Shea a year's leave of absence to study methods and materials being used to educate hearing-impaired children. It is his goal to help upgrade the services being offered to hearing impaired children in Westchester County, N.Y., and to facilitate improved communication in this area. Mr. Shea also owns and operates a youth ski camp in Vermont. Last February he invited Westchester families who have hearing-impaired children to join the ski camp session along with the regular ski campers; this is a means to help generate communication between families and to share winter activities*

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This study has been undertaken due to my feeling that there is need to explore an approach to speech therapy that better meets my preschool hearing-impaired child's specific needs, interests, and ability

Chris was born with a severe hearing loss in his right ear and a profound loss in his left ear due to nerve damage. He has been wearing a behind-the-ear aid in his right ear since shortly after the age of two. At the time this article was written, he was three and a half After he received the aid for his right ear, it was a few months before Chris realized its value and accepted wearing it on a regular basis He now removes the aid and throws it only when it is not functioning properly.

Chris has continued to reject wearing either a body aid or a behind-the-ear aid in his left ear This rejection may be caused by his feeling that, by comparison, this aid is not working due to the profound loss in this ear, amplification at some frequencies is uncomfortable, or the ear mold is uncomfortable. We will try again to see if Chris will accept an aid in his left ear when he is better able to communicate with us

It is wise for the parents of preschool hearing-impaired children to seek as much information as possible from private, community, state, and national sources to insure that all possible help is given to their children in their formative years Making an appointment to meet various specialists within your school system might also be helpful.

as well as industrial arts teachers can contribute a great deal In addition to providing ideas, they might also be able to lend, contribute, or tell you where you can obtain various tools and materials that will help meet your particular needs

The John Tracy Clinic (806 W. Adams Blvd., Los Angeles, Calif. 90007) provides a free correspondence course for preschool deaf and hard-of-hearing children and their parents. This program has been an extremely valuable guide and reinforces the individual professional therapy Chris receives.

This study contains many activities that can be selected by parents to encourage the mental, physical, and creative growth of their hearing-impaired children.

Everyone can experience frustration at times. However, it is important to note that, through interest, patience, tender loving care, and repetition, many initially frustrating responses may become very rewarding results, later. Reinforcement through repetition can be made more interesting when the approach and materials used to accomplish a particular goal are varied. Throughout all my activities with Chris, I maintain one goal but try to utilize several very flexible approaches to meet this goal.

Organization can be a tremendous asset and will always allow the opportunity to take advantage of spontaneous interest, which is so often generated by children Planning an area for storing and using tools and materials is very important. I have selected an outdoor and indoor area near water for working and cleanup Space is provided for storing and using tools and materials in an uncramped manner Chris knows where everything is kept and is very helpful selecting and putting items away.

Our activities at times are done individually with Chris. We also include our other two children, Pam, 22 months, and Elizabeth, 8 years old. We have found Pam to be a distracting influence in some of our activities because she wants everything at once, is messy, and seems too young to handle many of the activities Chris enjoys. Elizabeth has been a positive influence for Chris. She shows much interest in what we are doing and is proud to share experiences she has had in her school art classes.

Although it is hectic at times, there is real value for all family members to participate in activities together. We try to give Chris extra individual attention in addition to the individual attention we give each of our children.

Our children enjoy having their work displayed. Therefore, we thumbtack or tape finished work on a large piece of cardboard or Homosote (or Upson board) attached to the work area and bedroom walls. Another method of displaying items inexpensively is to erect horizontal wire on the walls and use clothespins or paper clips to hold these items.

Open shelving is very valuable for displaying and storing materials you will collect as well as three-dimensional constructions that are made. Store display racks are adjustable and make excellent shelving. They can be obtained at no cost when stores are ready to discard them. Inquire!

A chalkboard can be purchased or constructed from a piece of cardboard, or masonite covered with chalkboard or flat paint.

Pegboard and assorted wire holders can be used to store and display the various tools selected to work with. It is easier to teach children the names of the tools and where they hang if an outline of each tool is made on the pegboard surface. Using a method to outline the tools that is not permanent will allow you to rearrange tools in the future or use the pegboard for another purpose.

An outline can be drawn around each tool as it hangs with a felt tip pen with water-soluable ink, or self-adhesive shelving paper can be cut with scissors and attached to the pegboard.

Chalkboards, bulletin boards, pegboards, and shelves can be improvised from a variety of inexpensive materials or purchased through a business, school, or hardware supplier.

It is wise and rewarding to date all work and make note of objectives, successes, and failures as you and your child experience various activities. After displaying items a while, store them for continued reference, which will help evaluate progress. I am storing much of the two-dimensional work in loose ring notebooks in their order of progression. Larger two-dimensional work can be stored in a variety of improvised covers, such as rug and wallpaper sample covers, or covers purchased at an art supply store. Three-dimensional constructions that are difficult to store can be recorded by dated photographs.

Included in this study are descriptions of activities we have undertaken during the summer of 1973. A prudent parent will select activities that capitalize on each child's stage of development, interest, and capability.

We added a great deal of dimension to our activities and minimized expense and waste by making an important part of our program collecting and using found natural materials and manufactured scraps. Many benefits can be gained from treasure hunts.

We offered Chris reinforcement by taking advantage of his moods and interest by reintroducing many activities when he wanted to do them. Since his moods and interests varied, the work he produced and the progress we anticipated also varied. The outcome of Chris's interest in some cases was very positive, even though the results were not what we had planned to achieve.

I have been guided into the selection of the following activities because Chris loves to be active. I feel each child deserves every possible opportunity to be helped through his natural assets and a wide variety of constructive, exciting, and relevant experiences.

Valuable resource information has been compiled at the end of our art activities section. Some preliminary reading will provide a meaningful guide for better understanding the philosophy and mechanics necessary to achieve progress through the medium of art and other creative activities.

Before beginning any activities it is wise to develop the habit of placing plastic, large cardboard, or newspaper on the table and floor. Make it a ritual for the children to dress in old clothes or put on an apron, smock, or old shirt that won't restrict or frustrate their freedom of movement. Always have soap, a pan of water, washcloth, and bath towel nearby for emergency cleanups. Be prepared for messy accidents that are unavoidable with young and active children.

My wife and I are especially grateful for the guidance provided through the John Tracy correspondence course. We strongly recommend that all parents of preschool deaf or hard-of-hearing children inquire about its availability without delay.

I have undertaken and recorded the following activities, done with my three and a half-year-old hearing impaired son, in order to share experiences that complement necessary professional guidance. I am also making an attempt to broaden the spectrum of therapeutic approaches and possibilities that are currently available for preschool hearing impaired children through professionals and parents alike.

I have not found it necessary to elaborate on the activities provided in the John Tracy correspondence course. I can only emphasize that its guidance is extremely clear,

flexible, and relevant in the area of daily living and learning situations.

It is important to note that we take every possible opportunity to talk directly to and elicit an oral response from our hearing-impaired child.

I feel that an opportunity to participate in activities such as those I have outlined will provide preschool hearing-impaired children and others an extra incentive to listen and communicate orally.

We have tried many activities Chris has shown a special interest in the following activities and we encourage him and participate with him whenever possible.

- Playing with his heavy-duty Tonka Truck, Shovel, and Loader
- Playing in a sandbox or with wet or moist sand at a beach
- Helping care for our lawn, picking up sticks, stones, and leaves.
- Rowing a boat
- Looking for frogs around the edge of pond and swamps.
- Sightseeing trips to various holiday store displays.
- Riding his tricycle and pulling items in his attached wagon.
- Sledding and a few attempts at skiing on a mild incline
- Shoveling snow and dirt.
- Throwing, kicking, and batting a large rubber ball
- Riding on and playing with a homemade trailer truck
- Playing with our homemade knock hockey board
- Playing with a children's set of golf clubs and balls
- Washing dishes and putting them in a drainer on the sink counter
- Helping sweep, clean, and organize things in the house and garage
- Stirring puddings and making instant breakfast
- Watching Sesame Street
- Playing with homemade building blocks and scrap blocks of wood.
- Taking apart and putting together homemade and manufactured puzzles
- Cutting, painting, and playing with assorted cardboard boxes
- Playing Doctor.
- Playing with a variety of Fisher-Price toys
- Manipulating items with Playschool tools on a Playschool bench
- Pounding pegs on a Playschool pounding bench.
- Playing with building logs
- Playing with multicolored giant Tinker Toy parts

Finger Paints

We purchased glossy white shelving paper at a chain store, as well as special finger-painting paper and finger paints at an art supply store. Finger-painting kits can sometimes be found in an art or chain store complete with directions.

We dip our pieces of paper into a pan of clean water or wet them by holding them under a slow-running cold water faucet. We shake the excess water from the paper and smooth our sheets out onto a newspaper-covered table.

We start this activity by giving the children one color at a time and then adding more colors. We let the children make designs any way they wish. However, we encourage them to try various techniques using fingers, fists, and hands many different ways.

All of our children enjoy finger painting. The ease of overlapping and blending colors together makes this activity one that creates much excitement among them.

Our first finger-painting episode ended with Pam leading Chris into painting their faces, arms, and hair with delight as they laughed at the sight of each other. A thorough bathing, complete with shampoo, was necessary after our first session. Because of the results of our first session, we now watch Pam and Chris more closely. When they start to act up, we divert their attention to something else or terminate our session completely.

Uninhibited expression, enjoyment, and color identification are our goals in this activity.

Crayons

Coloring on various kinds of materials with different textures can offer stimulating experiences. My wife and I have introduced our children to the use of crayons on plain white shelving paper, assorted colors of construction paper, paper plates, paper bags, pieces of cork, rough and smooth cardboard, and various coarseness of flint sandpaper sheets.

To eliminate arguments over similar colors, we purchased two boxes of crayons—fat and regular. We broke some of the crayons in half and placed all of them in a shallow box. We can each select the colors we want from one box. At this time, we are limiting our colors to primary, secondary, black, white, and gray. We feel that limiting our colors as such will be less confusing for Chris when we emphasize and repeat the name of the colors he chooses to work with.

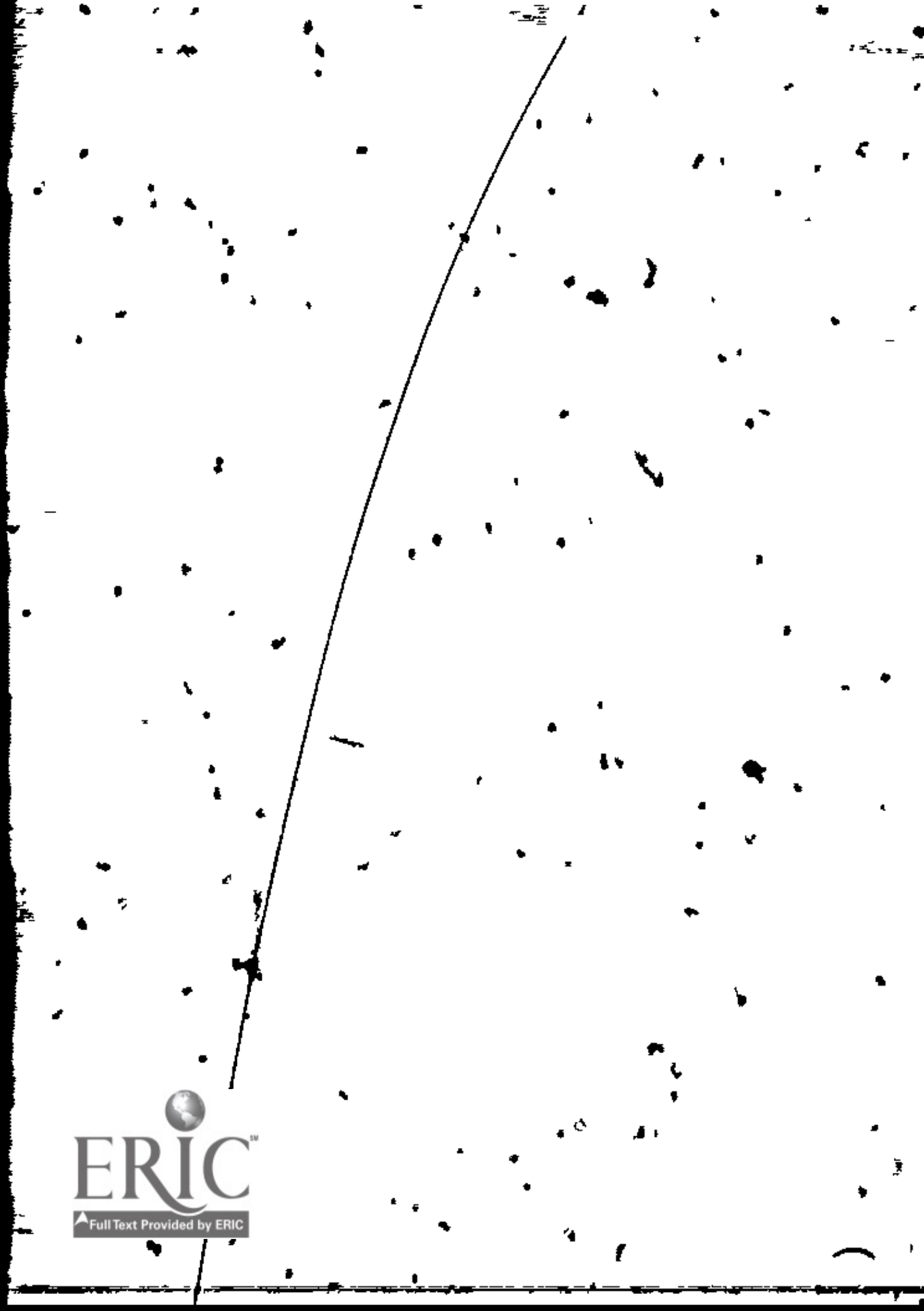
As our children select colors of their choice, we mention the name of the colors they select. We encourage the children to use the crayons on their sides as well as their points.

Although Chris loves to color with crayons on sandpaper, he prefers coloring with felt tip pens. Felt tip pens seem to take less effort to use.

We emphasize colors, the names of materials, and textures during these sessions.

Felt Tip Pens

Scribbling with felt tip pens is one of Chris' favorite



activities. He often walks into our material storage room, selects felt tip pens, with fine and wide tips, and begins working on paper by himself. The colors are bright, and Chris seems to gain instant satisfaction as he uses them. The colors, when overlapped as a result of scribbling, provide interesting results.

If possible, purchase the water-soluble ink type of felt tip pens because it is difficult to clean up after use of the permanent type if your children decide your furniture and household appliances need decorating when you are not looking. Be sure you know whether or not the felt tip pens you select "bleed" through paper before the children use them.

### Paper-Bag Masks

Our first session was initiated by spontaneous interest when Chris took a paper bag and used it to play monster. Therefore, we decided it would be a good idea to color bags with crayons and cut the eyes, nose, and mouth out with scissors. During this session we stressed repeatedly the names of the parts of the face, and Chris repeated some of the words we emphasized.

Elizabeth and Pam enjoyed coloring their masks with crayons. Chris cut his mask and did not appear interested in coloring it. However, he picked up the cut pieces, eyes, nose, and mouth and named them properly as he placed them over his own eyes, nose, and mouth.

My wife and I tried to reinforce Chris' enthusiasm by using our cut-out parts in the same manner he did. We made a game out of placing the eyes, nose, and mouth over ours. Chris was delighted with this activity.

Chris shows more interest in drawing faces on paper bags when he uses felt tip pens.

### Clay

We have native clay on our Vermont vacation property. It was necessary to sift stones and other debris out of the clay before using it. We made a sifter out of wire screen, which we purchased at a hardware store.

We moistened the clay and placed it in plastic bags to keep it moist during storage.

We also purchased clay at an art supply store to have a comparison. The source and quality of the clay did not bother Chris at all.

Chris enjoys digging up natural clay, wetting it, and rolling it into little balls.

Chris rolls his clay into balls and strips and then enjoys cutting them up into various shapes with a kitchen knife. He also uses an old rolling pin to flatten out small balls of clay. Because of the messy nature of this activity, we work outdoors.

### String Drawings with Tempera Paint

We use pieces of string, dipped in tempera paint, to scribble and make designs on white shelving paper and colored construction paper. Dipping a string in the tempera and swirling it around on the paper is interesting and fun.

Since the string has to be dipped in the tempera often, this activity is messy. We usually end up with as much paint on the children as on the pieces of paper.

To prevent mixing the colors together in the original containers, we pour a small amount of tempera into baby-food jars. We always begin our sessions using one color at a time and end our sessions by allowing the children to dip their strings into any of the colors as they desire.

Using several colors of tempera can make the designs full of varying blends. As the children dip their string into the different colors, the colors in the baby-food jars mix together.

At the termination of our first session, the children tried pouring the tempera from one jar into another and then onto their paper.

### Plaster Casting

Although this activity is messy, Chris shows much interest and enthusiasm while doing it. He assists in gathering our tools and materials outdoors and helps mix plaster, as well as making faces and other shapes for molds in moist sand.

We also use a variety of small containers, such as cardboard milk cartons, boxes, and plastic items as molds. We rub vaseline on the inside surface of our molds to insure that the plaster and mold will part properly after the plaster has hardened.

We place a few pieces of colored tiles in the face of some castings. We purchased our plaster of paris and a small amount of colored tiles at a hardware store.

### Tempera Straw Blowing

We tried creating designs on construction paper by blowing tempera paint through straws.

During our first few sessions Chris blew the colors on directly without moving the tempera around very much. It was not until we repeated this session several times that he understood he had to hold the straw at an angle and blow in various directions to push the tempera colors around into a variety of patterns.

It may be necessary to thin the tempera paint slightly to make it easier to work with.

We have found that it is wise to experiment with materials sometimes before presenting them to our children.

### Cutting and Gluing

Chris enjoys and is quite coordinated using good quality scissors to cut paper. He also loves to use fast-setting, nontoxic glue.

Prior to our cutting and gluing activities we visit chain

stores, toy stores, auto salesrooms, sports equipment stores, motorcycle and snowmobile shops, farm and construction equipment dealers, children's zoos, Santa's Land, a local airport, and a dairy farm.

During our outings we always obtain permission before allowing our children to touch anything or sit on items that interest them. People are very cooperative when they understand our intent and purpose and when they feel the children will not cause damage or injury. A telephone call in advance of some visits can be advantageous.

Shortly after our visits we provide Chris with meaningful word reinforcement by going through the pictures, describing them, and letting the children cut and glue them on colored construction paper. We also cut the names of the items out and let Chris glue them over the related pictures.

### Gluing Wood Constructions

Using pieces of wood all shapes and sizes, Chris spends time on several occasions gluing the pieces on top of each other. Usually he selects a large, flat piece as his foundation. On top of this base he glues smaller pieces, holding them a short time before adding others, allowing time for the bottom pieces to adhere to one another.

Chris enjoys stacking the wooden pieces on top of each other, similar to the fun of building with blocks. However, these pieces, all of different sizes and shapes, when glued together result in interesting constructions of varying sizes and shapes that can be saved and displayed.

Chris loves to have his constructions displayed. He proudly pointed to one of his constructions as we were showing visitors through our activity room one afternoon.

Interesting effects can be obtained when scrap pieces are colored with tempera or spray paints. A variety of items can be added for gluing with interesting results.

### Driving and Pulling Nails

Chris has often imitated my use of a hammer with his Playschool mallet. Therefore, I selected a variety of nails and used cardboard boxes, soft pieces of ceiling tile, and wallboard for driving the nails into. I had to hold the nails for Chris most of the time. During the first session I noticed that Chris could manage driving large-head roofing nails better than most other nails.

During succeeding sessions we used scrap wood and attached pieces together with roofing nails. I used an awl to indent the wood so that Chris could hold and drive the nails by himself.

Chris becomes very frustrated when the nails do not go in straight and pulls them out with the claw hammer. He displays good coordination, using a regular good-quality, seven-ounce claw hammer to drive as well as to pull the nails. Chris will copy a pattern, such as putting nails in the corners, depending on his mood and what I show him.

I always stress words such as hammer, nail, and wood. I use phrases such as drive the nail in, pull the nail out, and hold the nail. I say "up" when Chris raises the hammer and "down" when he lowers it. I also say "bang" when he hits the nail.

I have tried to make a game out of saying "up," "down," and "bang" when Chris uses his hammer. Consequently, Chris thinks it is funny to repeat these words after me.

### Sawing

Chris found a small coping saw in my workshop and wanted to use it. I therefore clamped a small vise on the seat of a picnic table to enable Chris to hold the wood securely. I had to place the wood in the vise and remove it for Chris during his first few attempts. However, after some practice he was able to place the wood into the vise jaws, tighten the jaws, cut the wood, and remove it from the vise himself.

I gave Chris assorted sizes of wood and found the wood that took very long to cut frustrated him. After this, I gave Chris pieces of soft pine approximately one foot long and one-quarter to one-half inch square. He was able to handle this wood and cut it with ease.

After a few sessions using a coping saw, we tried a small crosscut saw. Chris became very frustrated with the crosscut saw because it was too cumbersome and the teeth were too coarse to allow him to push and pull it with relative ease.

Because of the interest Chris showed in sawing, I purchased a hacksaw blade with coarse teeth to fit my hacksaw frame. Chris is able to use both the coping saw and hacksaw to cut an assortment of sticks. I keep assorted sticks stored with our other materials. It is important to note that Chris is closely supervised whenever he works with tools that could be dangerous.

Chris is beginning to show some interest in combining his activities in sawing, nailing, and gluing pieces of wood.

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# PHYSICAL DEVELOPMENTAL THERAPY TECHNIQUE FOR SEVERELY MULTIPLY HANDICAPPED CHILDREN

THE Onondaga Center for the Retarded serves approximately 160 school children and 65 adults. Eight of the children (CA 3 to 6) have severe physically handicapping conditions with accompanying mental retardation. Children below the age of three years are also helped through the Out Patient Clinic. Multiply handicapped children here are usually unhappy victims of refusal for admission to other local agencies serving such children in upstate New York because of complications they manifest due to combinations of mental retardation and physical conditions.

Pathological and congenital conditions seen at the Center and in the Clinic include spastic and athetoid cerebral palsy, general hypotonia and gross psycho-motor retardation, brain damage, and other syndromes. Most of these children are unable to sit independently and possess no head control of any kind. Occasionally hyper-stereo movements of the head complicate therapy techniques. Therefore, some basic objectives of Center and Clinic Programs for these children include:

- Teach head control so each child sees the surrounding environment right side up, not upside down or sideways as is the case when he is prone or supine on the floor most of the time.
- Teach independent sitting skills so each child can be exposed to a variety of toys, puzzles, and appropriate academic concepts.
- Prepare each child for further developmental skills such as crawling, creeping, standing, and walking.

These pictures show this three year old child progressing from having virtually no head control (no 1) to fairly good head control (no 5) The child (no 2) is seated in a well inflated tube He has no head control and therefore assumes various flexion extension positions After experiencing discomfort he is reinforced with a desirable comfortable position (no 3) Occasionally upper trunk support is given to reinforce the trunk positioning and encourage head movements alone (no 4)

## METHODS

Have the child in a sitting position on the floor with his legs in front of him and the soles of his feet facing each other Then measure the cross distance from the tips of the toes to the back of the buttocks Obtain a car inner tube of this diameter from a service station or tire dealer Inflate the tube and put the child inside making sure his elbows rest on either side of the inflated tube Assist the child in holding his head up straight while he is inside the tube

Occasionally let the child experience some discomfort from extreme flexion and extension of his head Resulting discomfort is a basic means of communication in that the child *feels* and *experiences* that these positions are not the most comfortable or desirable

After each experience of pain and discomfort it is important to reinforce the normal straight head holding position This method should be repeated for short periods of 10 to 20 minutes at least three times a day with increases as necessary

When the child is ready to learn sitting skills encourage him to use his arms that are resting on the inflated tube Again, you are guiding the child to learn through experiences When the child is ready to progress further remove about two to three pounds of air from the tube This allows slightly more give in the firmness of the tube when the child seeks support with his arms and requires trunk muscles to provide needed support This is hard and prolonged work but the rewards are great

By HASU S PATEL

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# Interdisciplinary Early Intervention Program

**BARBARA CONNOLLY, BS,**
**and FAY RUSSELL, MN**

*Developmental data were obtained on 40 children with Down s syndrome by an interdisciplinary team during an ongoing early intervention program Interventive methods are described Results are compared with available data on children with Down s syndrome who were not in early intervention programs Comparisons of developmental progress are also made of children begun in the early intervention program before six months of age with those begun after six months of age Conclusions from the study indicate that early intervention helps the child in earlier attainment of many developmental tasks and enhances functioning of the family unit*

Physical therapists have been involved with early intervention programs for many years nowever the stimulation programs have often included many types of children such as the hypertonic hypotonic high risk and environmentally deprived making comparisons of developmental achievements difficult

An interdisciplinary program was begun at the University of Tennessee Child Development Center (CDC) in late 1972 to determine the effects of an early intervention program on one group of infants Children between birth and three years of age with Down s syndrome were chosen because of the similarity of their physical problems (hypotonia) and because statistical data were available on the rate of overall development in the child with Down s syndrome Primary members of the interdisciplinary team who were involved were from the disciplines of physical therapy nursing and social work Other disciplines such as occupational therapy speech pathology nutrition and dentistry contributed to the program through consultation with the staff periodic lectures and demonstration to the parents

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Mrs Russell is chief of nursing Child Development Center University of Tennessee Memphis TN

Tne program was based on the concept that infants with potentially delayed development may be favorably influenced through early intensive motor and sensory stimulation The staff agreed that parents should be the primary programmers for their children since the program was to be carried out daily in the home In addition the program was oriented to promoting family stability through group experiences for the parents

Early referral is a basic requirement for an early intervention program In the first program held at the CDC seven families who had children with Down s syndrome contacted the center and requested services for their children Following this first group referrals came from physicians social agencies and parents Since the first program in March 1973, seven clinical sessions have been held

## METHOD

Forty children with Down s syndrome were included in tne program Eligibility for the program was based on the parents being able to bring the child into the clinic for sessions and their willingness to follow through with the activities at home Additional physical problems such as congenital heart defects and esophogeal atresias (common complications in children with Down s syndrome) did not eliminate the child from the program A specific control group was not available at

CDC since all families contacted for the program were accepted Data collected and reported by Fishler and his co-workers on children with Down s syndrome not in early intervention programs using the same scale for development (Gesell)[1] were used as the control [2]

Programs held in the clinical settings consisted of two sections infants (birth to 18 months) and toddlers (18 months to 3 years) The parents and children came to the center for one-half day for a period of 10 weeks in the fall and spring. During the winter and summer months home programs were continued with visits by the staff of the physical therapy and nursing departments Before the child came to the clinical program the child s condition was evaluated in the home setting and the child was placed on a home program which included motor and sensory stimulation as well as support for the mother-infant relationship and encouragement of the nurturing process By six months of age the children were given a complete evaluation by the interdisciplinary staff at CDC

During the formal program the parent and child were seen in a group session with other parents and trained professionals. Parents were urged to get on the exercise mat with the children and follow the demonstrations of the therapist or nurse with their own child and with other children in the group The sessions were planned to be informative to the parents, and information was given on motor sensory play and social activities feeding skills and nutrition language development and self-help skills Home programs were continued during the planned clinical sessions Activities were individualized to each child according to his developmental progress During the parent-child sessions the parents were encouraged to discuss problems and share ideas with other parents and professionals

Normal sequential development was explained because many of the parents were unaware of what to expect from their child and in what sequence The physical therapist provided gross motor activities for the child which included muscle strengthening range of motion, sensory and gross motor stimulation and play activities. Equipment used for the home programs consisted primarily of vibrators, large (61 cm) beach balls and towel rolls The vibrators were used for stimulation of muscle groups such as the neck and back extensors elbow extensors hip abductors, and knee extensors which are typically weak in the child with Down s syndrome The vibrators were also used for oral facilitation, inhibition of drooling and general sensory stimulation The beach balls and towel rolls were primarily used for the facilitation of neck and back extensor muscles and righting reflexes The nurse directed activities for sensory stimulation for the child including simple games such as pat-a-cake peek-a-boo searching rattle and mirror games and sand and water play Different textures sounds and smells were used for tactile auditory and olfactory stimulation

Parent sessions were conducted weekly by the nurse and the social worker as a part of the total program The parents were urged to discuss their problems in dealing with their children to share concerns and to interact with each other The initial common concerns at the beginning of the parent meetings were confusion anger guilt and grief These feelings were often compounded by the way professionals had handled events subsequent to the birth of the child The parents were often charged with take him home and love him and were given little or no constructive information As soon as these concerns were expressed and could be placed in some perspective the parents seemed to relate better to their child The staff recognized marital stresses as well as family stresses complicated by the presence of the exceptional child in the household. Individual as well as group efforts were made to help the parents cope with their day-to-day problems The parents were encouraged to enjoy their infant and to think of their child first as an infant and then as an infant with a problem

To augment the parents sessions, an organization known as the Down s Parents of Memphis was formed in September 1973. A purpose of the organization was to provide a setting in which the mothers and fathers could meet together to discuss their concerns and feelings their plans for their handicapped child (present and future), and the education of the public about Down s syndrome Another purpose was to reach new

TABLE 1

*Comparison of Gross Motor Milestones in Children with Down s Syndrome in Early Intervention Programs with Children with Down s Syndrome Who Were Not in a Program*

| Behavior[a] | Normal[a] Age Onset (mo ) | Population without Program[b] (mo ) | CDC Group with Program (mo ) | Number in CDC Program |
|---|---|---|---|---|
| Holds head erect (zone II) | 3 | 3 5 | 2 8 | 32 |
| Rolls over | 5 | 5 7 | 4 5 | 35 |
| Sits unsupported (one minute erect) | 8 | 11 3 | 8 0 | 34 |
| Crawling (pivots) | 8 | 12 5 | 8 6 | 28 |
| Creeps | 10 | 17 3 | 14 0 | 18[c] |
| Pulls to standing position | 10 | 18 4 | 12 4 | 24 |
| Stands (at rail) | 11 | 17 1 | 11 6 | 30 |
| Stands momentarily alone | 14 | 21 5 | 16 8 | 24 |
| Walks with support | 13 | 22 3 | 13 9 | 24 |
| Walks unsupported | 15 | 24 8 | 18 4 | 16 |

[a] The qualitative criterion for each behavior c ted can be found in Gesell and Amatruda Developmental Diagnosis

[b] From Fishler Share and Koch Adaptation of Gesell Developmental Scales for the Development of Children with Down s Syndrome [2]

[c] Majority of children did not creep

parents of children with Down s syndrome as soon as possible to help the new parents through some of the initial feelings that accompany the birth of an exceptional child

The success of any early intervention program of this kind is dependent upon the cooperation of the parents Success in parents becoming the primary programmers of their children depends upon the parents cooperation and participation in the overall program planned for their child Emphasis was placed on the continuous day-to-day stimulation of the child therefore and was not limited to the half-day sessions in the center

## RESULTS

A comparison of the gross motor milestones of children with Down s syndrome using the results of Fishler and co-workers as the control with children in the CDC study illustrated that gross motor skills such as head control sitting and walking were attained earlier through early stimulation (Tab 1) [1,2] A comparison of fine motor feeding and social skills again using the same control was similar to the results obtained in the gross motor comparisons For example finger feeding was accomplished by 8 5 months (27 children) and feeding with a spoon by 22 months (17 children) The majority of the children in the study spoke their first word at 11 months compared to the average time of 23 5 months in children with Down s syndrome in the Fishler study [1]

Results also showed the importance of intervention before six months of age In the study those infants begun after six months of age exhibited evidence of delays in most areas Table 2 shows the development of chil-

TABLE 2

*Developmental Milestones of Children with Down s Syndrome in Child Development Center Study*

| Behavior | Begun in Program After Age 6 mos (mo ) | Begun in Program Before Age 6 mos (mo ) |
|---|---|---|
| Holds head erect (zone II) (by parent report) | 3 0 | 2 7 |
| Rolls over (by parent report) | 4 6 | 4 4 |
| Sits unsupported (one minute erect) | 9 1 | 7 2 |
| Crawling (pivots) | 9 3 | 7 8 |
| Creeps | 12 9 | 12 0 |
| Pulls to standing position | 13 2 | 12 1 |
| Stands (at rail) | 12 2 | 11 4 |
| Stands momentarily alone | 16 9 | 15 6 |
| Walks with support | 15 6 | 11 6 |
| Walks unsupported | 18 9 | 17 5 |

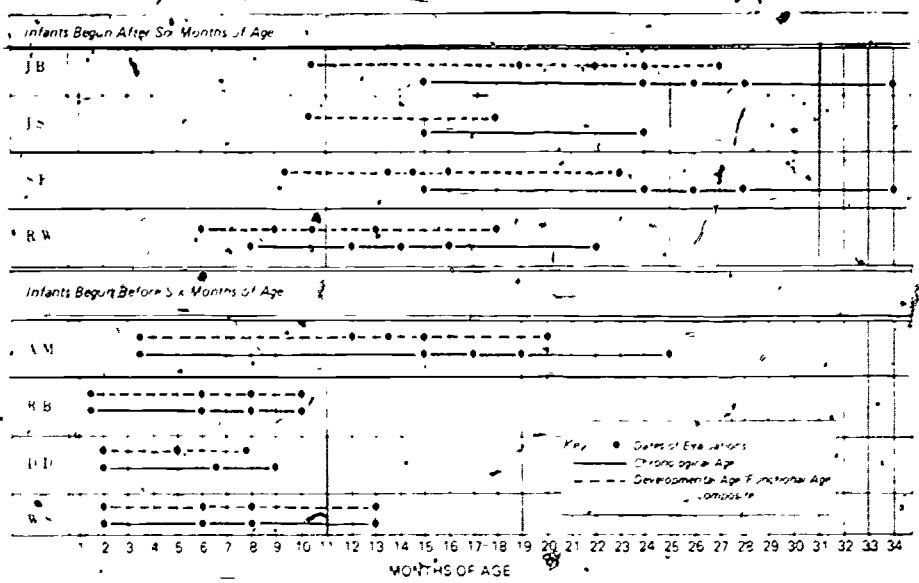


*Figure The developmental and functional progress of infants who were begun on an intensive motor and sensory stimulation program is shown The progress in relation to the chronological age of the infants who were started later in the program is much less than for the infants who were enrolled in the first two to three months of life*

dren seen before six months of age and those begun after six months of age The Figure illustrates the differences in the rate of development in children begun before and after six months of age Early milestone information on the children begun in the program after six months of age was obtained from parents

Effects of the program were also seen in the families after the group experiences The families showed evidence of improved interfamily relationships and improved adaptation to the handicapped child indeed they became the primary programmers of their children in most instances

## DISCUSSION

The belief that early intervention programs are important for the potentially developmentally delayed child is supported by the results of this study of children with Down s syndrome Also the previously held belief that the child with Down s syndrome did not have noticeable developmental delays until six months of age seems disputed by our findings Favorable effects of an early intervention program were seen in both the child with Down s syndrome and his family in our study The intensive motor and sensory stimulation program seemed to accelerate the attainment of most developmental milestones

The results of this study do not allude to an alteration of the childrens intellectual capacity Once the child is able to be mobile and able to partially care for himself however he is better able to cope with the world around him and is more receptive to the learning process Follow up studies at a later date will assist in determining any changes that may have been brought about by early intensive developmental stimulation

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## EARLY INTERVENTION PROGRAMS

According to Merle B. Karnes, early intervention programs that are the most successful tend to have the following characteristics:*

- A well-defined approach for working with young children, backed by a strong philosophy.
- Time allotted for inservice training, curriculum development, and daily planning, with a five-to-one child-to-adult ratio.
- Individualized curriculum that fosters development of cognitive language, motivation to learn, self-concept, social skills, motor skills, and information processing; in other words, total development of the child.

The programs described in this section were contacted, for the most part, through TADS (Technical Assistance Development System) which provides technical assistance to projects in the First Chance (HCEEP) Network. Many of the programs receive funding through the Bureau of Education for the Handicapped which administers funds from the Handicapped Children's Early Education Act.

Most of these programs include the following components: recreation/play, motor activity, sensory stimulation, self-care skills, language and speech development, and parent training and counseling. Depending on who conducts the program, there may be more emphasis on one area than the others. Despite the fact that some sort of physical education and recreation is offered by all programs, only three actually employ a physical education or recreation specialist. Others either delegate these areas to teachers and parents or utilize the services of a consultant. This trend is indicative of two problems:

- Early intervention programs are feeling the budget crunch and must hire staff members with expertise in many areas, rather than specialists in one or two areas, and
- There is a general lack of understanding of the need for a person specifically trained in physical education and recreation for handicapped children to conduct these programs.

The inclusion of programs in this section is not intended as an endorsement of the programs, although they all may be excellent. These programs were selected for inclusion because they met several basic criteria: (1) all responded to a letter of inquiry or had sent recent information to IRUC; (2) all are concerned with early intervention for handicapped children, and (3) all include physical education and recreation components in their programs.

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*June B. Jordan and Rebecca F. Dailey, editors. Not All Little Wagons are Red: The Exceptional Child's Early Years. Reston, Virginia: Council for Exceptional Children, 1973. p. 59.

For further information about these programs, write to the addresses given. For information about other programs, consult the bibliography at the conclusion of this section.

Churchwood Pre-school and Developmental Day Centre
935 Northwood Drive
Windsor, Ontario, Canada

Churchwood Pre-school has been in operation for 9½ years and is currently operated under the Windsor Mentally Retarded Association. There is a staff of six teachers, three teacher-aides, one infant education coordinator, a cook, and three drivers. The school has two vans with wheelchair lifts and one station wagon to transport the children to and from school. This is both a nursery school and a training center for the 32 mentally retarded and multiply handicapped children who attend. Fifteen children are in the developmental program, attending on a full-day basis; the others attend one of the two half-day nursery school programs. The program includes play therapy, gross motor activities (such as trampoline and an obstacle course), music activities, perceptual-motor remediation, speech therapy, physical therapy, and educational activities. Monthly parent-teacher meetings are held to discuss each child's program and progress. A new program is infant stimulation in the infant's home once per week. Referrals to Churchwood are made by parents, a doctor, a family counselor, or the Children's Aid Society. Some children leave the Centre to attend regular school, and others who are severely involved may attend a special school or remain in the Centre's programs until age 18.

Communication Project for Multiply-Handicapped Blind Children
John Hay School
411 Boston Street, Portable #1
Seattle, Washington 98109
Annette R. Tobin, Project Coordinator

Directed by a speech pathologist, an interdisciplinary team (parents, teachers, students, nurse, occupational therapist) conducts this program for three through eight year old children. Currently seven children with deficits in language or speech, hearing loss, blindness, and/or mental retardation participate. Children are taught to use sign language as a means of communicating needs and preferences. In addition, each child has an individualized program of self-care skills. Indoor and outdoor recreation activities are provided, and toy-play is carried over into the classroom setting. The occupational therapist directs gross motor play, which includes orientation skills, play with large toys, and scooterboard. Sensory stimulation is provided through gross motor and music activities, dancing, tracking activities, and play with bubbles.

Comprehensive Preschool Programs
Southeast Mental Health and Retardation Center
700 1st Avenue South
Fargo, North Dakota 58102
Marie Bristol, Assistant Director, Children-Adolescent Services

Over 800 children, ages three months to eight years, primarily emotionally disturbed, are served by this program. Various aspects of the program include:

- Stimulation to Potential Program--Center therapists provide weekly in-home help for parents of preschool handicapped and high risk children by teaching them how to stimulate their child's emotional, intellectual, and physical development.
- Therapeutic Evaluation and Treatment Center--intensive evaluation and treatment of children with more serious problems in cognitive, self-help, motor, language, socialization, and academic areas.
- Development Infant Program--supplies computerized prescriptions which suggest methods of teaching communication, self-help, perceptual, social-emotional, motor, academic, and vocational skills.
- The Magic Kingdom--community based preschool screening program designed to identify 3-6 year old children with auditory, language, conceptual, and/or social-emotional problems.
- Lekotek--lending library where parents may borrow books, assessment tools, and other materials to use with children at home.

All phases of the program include parent involvement. A recent evaluation by a University of Utah professor was very favorable, emphasizing that this program could serve as a model for others. Numerous publications and audio-visual materials are available from the Center.

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Early Education for Multihandicapped Children Project
Whitten Village, Drawer 239
Clinton, South Carolina 29325
David Sexton, Director, Early Childhood Education

This is a residential program for two to 12 year old mentally retarded and multiply handicapped children. Presently 27 children are being served. Parents, teachers, students, a medical doctor, social worker, and physical and occupational therapist are involved in the program, as well as a physical educator and recreator. Individualized speech therapy, occupational therapy, special education, and physical therapy are part of the program. Motor skills are developed through physical education, and a recreation program of playground activities, field trips, and swimming for multihandicapped children is also included. The project was evaluated for national replication possibilities and was placed in the top 20 such projects evaluated.

John Tracy Clinic Correspondence Course
806 West Adams Boulevard
Los Angeles, California 90007
(213) 748-5481
Virginia B. Thielman, Director
Correspondence Education

This course is planned for parents of deaf or deaf-blind preschoolers to use with their children (under five years old). Both the course for parents of preschool deaf children and the program for parents of preschool deaf-blind children consist of 12 lessons which may be spread over one to two years, depending on the child's age and readiness when enrolled. Parents must report to the clinic each month on what they and their child are doing and learning. There is no cost. Each lesson in the course for preschool deaf children includes information on (1) communication, (2) development and growth (physically, emotionally, socially) of all children, (3) activities planned to help the child take beginning steps in lipreading, listening, sense training, and language and speech. Each lesson in the course for preschool deaf-blind children includes information on (1) relating and communication, (2) motor development, (3) self-care skills. Much of the program is relevant to physical education and recreation for the young deaf or deaf-blind child. Although this course was not designed for classroom use, it is available in book form for professional use:

Correspondence Learning Program for Parents of Preschool Deaf-Blind Children. $9.50.

Correspondence Course for Parents of Preschool Deaf Children. $8.50.

The John Tracy Clinic provides a variety of other services at no charge to parents of deaf or deaf-blind children of all ages. Hearing and development evaluations, classes for parents, nursery school, counseling, and a summer session of preschool and parent education are among the services.

Nisonger Center
Outdoor Learning Center
Ohio State University
Columbus, Ohio 43210

The Nisonger Center officially opened its Outdoor Learning Center on October 22, 1975. The outdoor facility is adjacent to preschool classrooms. It includes a network of contoured pathways and sloping greens that create stimulus for movement. The playground is designed to accommodate the needs of both severely handicapped and the most active preschooler.

OUTREACH: Early Childhood Education
P. O. Box 10716
El Paso, Texas 79997
Dr. Patricia G. Adkins, Director

In its sixth year of operation, this program currently reaches almost 60 handicapped children under five years of age. Participants have a variety of handicaps including orthopedic, speech, and hearing defects, emotional disturbance, and mental retardation. In addition, a special program is aimed at disruptive toddlers. The staff includes students, teachers, physician, psychologist, social worker, language specialist, infant stimulation coordinator, music therapist, and physical educator. Prescriptive teaching techniques with parent involvement are seen as integral components of the program, so that gains in the program are carried over into the home. All physical activities have a perceptual-motor orientation, and recreation activities are geared toward physical development. Language development and self-care skills are also aspects of the program. Music, art, and swimming, considered as means of sensory stimulation, are included.

Project HELP ME
Brookside School
Drummond Avenue
Waterville, Maine 04901
Sally Doxtater, Director

This project is a preschool program for two, three, and four year olds having physical, emotional, or learning handicaps (including visually, hearing, and speech impaired). Fifteen to 20 children are served at one time with re-evaluations of each child every ten weeks. At that time children are mainstreamed into Head Start, nursery school, etc., if another situation is more appropriate. The program consists of recreation (group games, singing, field trips, films), motor activities (climbing, swinging, tricycles, balance beam, playground), sensory stimulation (water play, clay, paints), self-care skills (toilet training, dressing and undressing, feeding), and language development (through games, music, and all other activities). Two teachers and two aides work as a team.

Project Vision-Up
A Model Project for the Early Identification and Education of Visually Handicapped Children in a Rural State
Idaho State School for the Deaf and the Blind
Gooding, Idaho 83330
(208) 934-4457
Lee W. Robinson, Project Director

The Project Vision-Up Curriculum is a program for teaching visually impaired preschool children developmental skills. The curriculum was designed to provide a structured instructional program for the major areas of development for preschool visually handicapped children, although it is also effective with

developmentally delayed children regardless of handicap. Based on Jean Piaget's theories of cognitive development, the curriculum deals with the areas of physical development, fine motor development, self-help skills, social-personal skills, language development, and intellectual development. Such activities as bead stringing, pounding, dressing, rolling, running, and general play are used to stimulate development in the areas listed.

Stepping Stones Center for Handicapped
5650 Given Road
Cincinnati, Ohio 45243
(513) 831-4660
Larry Zinn, Executive Director
Susan Radabaugh, Program Director

Stepping Stones Center is a United Appeal facility. They initiated their Infant Stimulation Program for "Tiny Tots" in 1971 to serve a five-county area in Kentucky and Ohio surrounding Stepping Stones Center. Handicapped infants are accepted at six months of age. Program meets five days a week for two-and-one-half hours year round, accommodating 25 children daily. Infants work on a one-to-one relationship with a volunteer. Activities are conducted on a group basis and are planned to enhance motor skills, spatial awareness, protective reflexes, sensory and language skills, and self-help. Testing procedures and studies of "before and after" film strips verify improved motor skills of participants. Parents are actively involved in conducting and promoting the program, as well as contacting parents of newborn handicapped infants in the community.

## Additional Programs

More complete information on these programs was not available when this publication went to print.

Agency for Infant Development
1030 Sir Francis Drake Boulevard
Kentfield, California 94904
Susan Collins, Director

Children's Health Home
Early Child Development Program
515 East Poplar Avenue
San Mateo, California 94401
Karen E. Campbell, Director

Circle Preschool
9 Lake Avenue
Piedmont, California 94611

Early Intervention Project for Handicapped
Infants and Young Children
Institute for the Study of Mental Retardation
and Related Disabilities
University of Michigan
130 South First Street
Ann Arbor, Michigan 48109
Martha S. Moersch, Project Director

Early Childhood Stimulation Programme
Surrey Place Centre
Toronto, Ontario M5S 2C2 Canada
Rhona Wolpert, Director

The Experimental Preschool
National Children's Center
6200 Second Street, N. W.
Washington, D. C. 20011
Dr. Michael Guralnick, Director

Project MEMPHIS
Department of Special Education and Rehabilitation
Memphis State University
Memphis, Tennessee 38152
Alton D. Quick, Director

Texas Handicapped Children's Early Childhood Program
1601 South Cleveland
Amarillo, Texas 79102
Wendell Jones, Director

## Bibliography


+1. Calvert, Donald R., Rayford C. Reddell, Ursula Jacobs, and Susanna Baltzer. Experiences with preschool deaf-blind children. Exceptional Children, 38(5): 415-421, January 1972.

A program for deaf-blind preschoolers established in 1966 at the San Franciso Hearing and Speech Center is described. Problems, techniques, and evaluation are discussed. Authors conclude that a program of training in preschool years is beneficial to deaf-blind children; other conclusions are given.

+2. Floyd, Jane B. Special programs help infants who are multiply disabled. On Your Own (newsletter), 5(10): 1-2,4, October 1, 1975.

Describes the Rural Infant Stimulation Environment and Tri-Mod Projects in Alabama. Educating and training parents is an integral part of both programs of early intervention.

3. Hartman, Harriet. Prepping the child and the home. Day Care and Early Education, 1(5): 18-22, May-June 1974.

Describes the Parent Readiness Education Project (PREP) conducted for 48 preschool children diagnosed as potentially learning disabled. Parents and volunteer high school students provided individualized programing. Both parents and children selected toys on a regular basis from a toy lending library. Parents identified language stimulation as an important aspect of child development during preschool years.

4. Kedrich, Vivian. Training the mentally retarded: a progress report. American Education, 11(9): 10-13, November 1975.

Describes program at the University of Washington's Model Preschool Center for Handicapped Children, which serves nearly 190 newborn to six year old mentally retarded children.

5. Jew, Wing. Helping handicapped infants and their families: the delayed development project. Children Today, 3(3): 7-10, May-June 1974.

This project, carried on in the Stockton (California) Unified School District, has aimed to enhance growth in gross and fine motor skills, language development, and self-help skills. Some children were reached through home visits, and others participated in group activities.

+6. Lynch, Barbara. Early childhood education: preschool preparation for children with epilepsy. National Spokesman (newsletter), 9(1): 5, January 1976.

Describes program of a Louisiana preschool for epileptic children regardless of mental ability, physical handicap, or medical needs. Parent education and the curriculum (nursery, kindergarten, and primary programs) are discussed.

*7. Peniston, Eugene. An Evaluation of the Portage Project: A Comparison of a Home-Visit Program for Multiply Handicapped Preschoolers and Head Start Program. Paper presented at the annual meeting of the American Educational Research Association (Washington, D. C., March 30-April 3, 1975). 14 pp. (ED 112 570 $1.58 papercopy, $0.76 microfiche)

Evaluated the effectiveness of the Portage Home Visit (PHV) Parent Involvement Program in improving IQs and motor, language, adaptive and personal-social developmental skills of 36 multiply handicapped developmentally delayed preschoolers. Analysis of pre and posttest data indicated that children made significant gains in IQ adaptive behavior, language development, and personal-social skills, but the PHV program did not enhance motor skills (perhaps due to severity of handicaps).

8. Quick, Alton D., et al. The Training of Exceptional Foster Children and Their Foster Parents: Enhancing Developmental Progress and Parent Effectiveness. Project MEMPHIS. Memphis, Tennessee: Memphis State University, Department of Special Education and Rehabilitation, 1973. 152 pp.

Project MEMPHIS is a research and demonstration project designed to develop methods of remediating developmental deficiencies in handicapped foster children. The MEMPHIS Comprehensive Development Scale, designed to aid child evaluation in personal-social, gross motor, fine motor, language, and perceptual-cognitive areas, is presented in toto. Complete lesson plans for teaching in the five areas are given.

+9. Rosendorf, Sidney. Pa-la-tee-sha--"they are blooming." Children Today, 3(2): 12-17, March/April 1974.

Describes Project Pa-la-tee-sha which serves 95 Yakima Indian children from infancy to age seven who are handicapped in speech, hearing, learning, walking, or getting along with others. This is a Head Start project. Program areas are self-help, motor, language, educational skills, and socialization.

+10. Wiehn, Virginia. An early childhood education program for deaf-blind children. New Outlook for the Blind, 64(10): 313-316, December 1970.

Michigan School for the Blind's education program for young deaf-blind children is detailed. Home visitations and a six-week summer program for the whole family are discussed. Parents' evaluations were very positive.

## FURTHER RESOURCES: PERIODICALS

The following listing of journals and newsletters contains those dealing with early childhood education/early intervention. Some are specifically concerned with handicapped children, while others include occasional articles on the subject of early intervention for handicapped children.

### Journals

Child Care Quarterly
Behavioral Publications
2852 Broadway
Morningside Heights, New York 10025
(quarterly, $25.00)

Child Development
University of Chicago Press
5750 Ellis Avenue
Chicago, Illinois 60637
(quarterly, $25.00)

Children Today
U. S. Government Printing Office
Superintendent of Documents
Washington, D. C. 20402
(6/year, $6.10)

Children's House
P. O. Box 111
Caldwell, New Jersey 07006

Day Care and Early Education
Behavioral Publications, Inc.
72 Fifth Avenue
New York, New York 10011
(bimonthly, $9.00)

Early Child Development and Care
Gordon & Breach Science Publishers, Inc.
One Park Avenue
New York, New York 10016
(quarterly, $16.50)

Exceptional Children
The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091
(8/year, $20.00)

International Journal of Early Childhood
Irish University Press
81 Merrion Square
Dublin 2, Ireland
(2/year, $3.50)

Young Children
National Association for the Education of Young Children
1834 Connecticut Avenue, N. W.
Washington, D. C. 20009
(bimonthly, $10.00)

## Newsletters

Children of the Silent Night
Perkins School for the Blind
Watertown, Massachusetts 02172
Distributed by:
R. M. Campbell Associates
Academy Avenue
Saxtons River, Vermont 05154

The Children's Voice
Commonwealth of Massachusetts
Office for Children
120 Boylston Street
Boston, Massachusetts 02116

Cycles
TADS
500 NCNB Plaza
136 East Rosemary
Chapel Hill, North Carolina 27514

Early Childhood Project Newsletter
Education Commission of the States
300 Lincoln Tower
1860 Lincoln Street
Denver, Colorado 80203

ERIC/ECE Newsletter
ERIC Clearinghouse on Early Childhood Education
University of Illinois at Urbana-Champaign
805 West Pennsylvania Avenue
Urbana, Illinois 61801

Head Start Newsletter
Head Start
P. O. Box 1182
Washington, D. C. 20013

Teaching Research Infant and Child Center Newsletter
Exceptional Child Research Program
Oregon State System of Higher Education
Monmouth, Oregon 97361

Young "Uns
Mississippi Child Development Council
Governor's Office of Education and Training
1935 Lakeland Drive
Suite A
P. O. Box 4300
Jackson, Mississippi 39216

## FURTHER RESOURCES: ORGANIZATIONS AND AGENCIES

### General

These organizations and agencies are concerned with young children or young handicapped children.

American Association of Elementary/Kindergarten/Nursery Educators
National Education Association
1201 16th Street, N. W.
Washington, D. C. 20036
(202) 833-4390

Association for Childhood Education International
3615 Wisconsin Avenue, N. W.
Washington, D. C. 20016
(202) 363-6963

Black Child Development Institute
1028 Connecticut Avenue, N. W.
Suite 514
Washington, D. C. 20036
(202) 659-4010

Child Study Association of America
50 Madison Avenue
New York, New York 10010
(212) 369-6300

Child Welfare League of America
67 Irving Place
New York, New York 10003
(212) 254-7410

Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

Day Care and Child Development Council of America, Inc.
1012 14th Street, N. W.
Washington, D. C. 20005
(202) 638-2316

Education Commission of the States
300 Lincoln Tower Building
1860 Lincoln Street
Denver, Colorado 80203
(303) 893-5200

ERIC Clearinghouse on Early Childhood Education (ERIC/ECE)
University of Illinois
805 West Pennsylvania
Urbana, Illinois 61801
(217) 333-1386

National Association for the Education of Young Children
1834 Connecticut Avenue, N. W.
Washington, D. C. 20009
(202) 232-8777

National Institute of Child Health and Human Development
Public Health Service
National Institutes of Health
U. S. Department of Health, Education, and Welfare
Building 31
9000 Rockville Pike
Bethesda, Maryland 20012

Office of Child Development (OCD)
P. O. Box 1182
Washington, D. C. 20013
(two major bureaus--Children's Bureau and Bureau of Head Start & Early Childhood)

Research and Demonstration Center for the Education of Handicapped Children & Youth
Teachers College
Columbia University
New York, New York 10027
(212) 678-3845

Also see:

Glassman, Lynne, compiler. Handicapped Children in Head Start Series. Utilizing Resources in the Handicapped Services Field: A Directory for Head Start Personnel. Reston, Virginia: Council for Exceptional Children (1920 Association Drive, 22091), n.d. 210 pp. $4.35.

This guidebook contains state-by-state resource entries for a variety of centers, organizations, and agencies that provide direct and indirect services to handicapped children. The three major sections of the guide are: selected federal agencies, associations, and directories; program descriptions at all levels; and state-by-state resource entries.

## Specifically Concerned with a Handicapping Condition

The organizations and agencies listed here focus on persons of all ages with a particular handicapping condition.

Alexander Graham Bell Association for the Deaf
3417 Volta Place, N. W.
Washington, D. C. 20007

American Foundation for the Blind, Inc.
15 West 16th Street
New York, New York 10011

American Heart Association
44 East 23rd Street
New York, New York 10010

Epilepsy Foundation of America
1828 L Street, N. W.
Washington, D. C. 20036

Gallaudet College
Florida Avenue at 7th Street, N. E.
Washington, D. C. 20002

Multihandicapped Rubella Foundation, Inc.
161 Maywood Way
San Rafael, California 94901

The National Association for Deaf-Blind Children
61 Sennelyles Park Road
Northfield, Birmingham 31, England

National Association for Retarded Citizens
2709 Avenue E East
Arlington, Texas 76011

National Easter Seal Society for Crippled Children and Adults
2023 West Ogden Avenue
Chicago, Illinois 60612

National Society for Autistic Children
169 Tampa Avenue
Albany, New York 12208

Perkins School for the Blind
175 North Beacon Street
Watertown, Massachusetts 02172

United Cerebral Palsy Associations, Inc.
66 East 34th Street
New York, New York 10016

## FURTHER RESOURCES: PEOPLE

Dr. Patricia G. Adkins, Director
OUTREACH: Early Child Education
P. O. Box 10716
El Paso, Texas 79997

Ms. Jane DeWeerd
Program Development Branch
Room 2036
Regional Office Building No. 3
Bureau of Education for the Handicapped
U. S. Office of Education
7th and D Streets, S. W.
Washington, D. C. 20202

Dr. H. D. "Bud" Fredericks
Research Professor
Teaching Research
Oregon State System of Higher Education
Monmouth, Oregon 97361

Dr. Molly C. Gorelick
Associate Professor
Pre-School Project Director
Pre-School Laboratory
California State University
Northridge, California 91324

Dr. Roger Kearns
Chairman of Physical Education
Department of Physical Education
North Dakota State University
Fargo, North Dakota 58102

Helen S. Knight
Information Coordinator
TADS
Suite 500
NCNB Plaza
Chapel Hill, North Carolina 27514
(919) 967-9221

Mrs. Janet Pomeroy
Founder and Director
Recreation Center for the Handicapped
207 Skyline Boulevard
San Francisco, California 94132



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Sherry Raynor, Director
Project Outreach: Infant Program for the Visually Impaired
Ingham Intermediate School District
2630 West Howell Road
Mason, Michigan 48854

Jeri Salkin
Director, Body Ego Technique
Cedars-Sinai Thalians Community Mental Health Center
8730 Alden
Los Angeles, California 90048

Dr. Pearl Tait
Division of Professional and Clincial Programs for Visually Disabled
School of Education
Florida State University
Tallahassee, Florida 32306



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