

The Natural Environment and Human Development: Implications for Handicapped Children in Urban Settings

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ABSTRACT. This review of literature is intended to promote awareness of the needs of the 15 percent of the nation's children and youth who are afflicted with some form of handicap. It is imperative that those who design children's programs that utilize natural environments understand the special problems of handicapped children.

INTRODUCTION

THIS PAPER is based on a review of the literature prepared to help participants in the Symposium-Fair on Children, Nature, and the Urban Environment be aware that fully 15 percent of the nation's children and youth are afflicted with some form of handicap.

These children, be they physically or mentally handicapped; deaf, blind, or emotionally disturbed; suffering from impaired or speech-learning disability, face very special problems that make it difficult for them to participate in those life experiences that are the birthright of all the nation's children.

It is imperative that those who design the environments in which children must live and learn, and those who design the programs that use these environments, understand the special problems of handicapped children. Their goal must be to design environments and programs that meet the needs of *all* children.

In an effort to provide relevant input for the Symposium participants, the authors identified two major topics that were generally related to the topics presented and discussed during the Symposium sessions. They were: (1) the value of the natural environment in the growth and development of handicapped children; and (2)

program planning, administration, and evaluation.

A thorough search of the literature was undertaken for each of these topics to identify and review research with implications for handicapped children and youth. During the week of the Symposium, specially trained teams monitored all presentations and evaluated the information presented for applicability to handicapped children. Specific recommendations for designers and program planners were then developed to guarantee that the special problems and needs of handicapped children would be provided for. These recommendations were presented to participants at a panel discussion on the last day of the Symposium.

The Symposium program showed that little, if any, thought had been given to the unique problems of handicapped urban children. This oversight is more likely benign than willful.

THE URBAN ENVIRONMENT: A UNIQUE PROBLEM SETTING

Until recently, the urban environment was excluded from environmental education. When outdoor programs were offered at all to city children, teachers generally headed for a city

park to conduct a nature study class. The city as an environment was rarely considered. Yet the city is the area most profoundly affected by the environmental crisis (*Hawkins and Vinton 1973*).

Air and water pollution, solid wastes, and a lack of space for comfortable living are more serious problems in cities than in areas with low population density. In today's cities noise, crowding, inconvenience, and disunion from natural environments combine in a unique threat to personal mental and physical health. The inner-city child bears the brunt of the urban environmental crisis, for he is more crowded and his dwelling less sound.

Even the more fortunate city children grow up with little awareness of the natural environment. Urban environments are constricted; they offer little room for imaginative play and almost no contact with nature. They are often confusing, dysfunctional, and even dangerous. Although the city is notable for the diversity of cultures, values, lifestyles, and services it shelters, these are to a great extent segregated from one another so that children have few opportunities to experience the different environments within their city. The children move from their homes to their egg-crate schools and back, and fail to observe the nuances of even the small environment in between (*Yambert 1970, Bushnell 1970*). Instead of learning to perceive with all their senses, they learn to blot out unpleasant sights, sounds, and smells.

Environmental education for urban children—and most of our children now grow up in metropolitan areas—would enable them to perceive their environment, appreciate both its good and its bad aspects, and participate in improving it. It would take them out of what are usually gloomy school buildings and provide an environment for learning different from the one in which they too often face only failure. It would allow them to investigate real things instead of artificial ones and to develop all their senses.

Children of poverty, more than children of affluent backgrounds, tend to be what the Gesell Institute of Child Development terms "reality bound." They learn better dealing with the concrete than with the abstract. Environmental education could be a means of providing successful learning experiences for such children.

Environmental education for urban children should provide experiences in many kinds of environments, so that they can know of worlds beyond the tenement, the subway, and the street corner. Best of all, they might build a positive self-concept from success at solving problems in these environments that could encourage them to participate in ameliorating the problems of their own.

The city is actually an ecosystem, a community of physical and biological entities interacting with each other and with the total environment. Education that deals with the urban environment should help learners understand the city as such a totality. The city, moreover, does not end at a specific boundary, but influences environments far beyond its political limits.

Urban environmental education thus includes investigation of all types of environments. In addition to the study of the effects of the city on the natural environment, urban environmental education must deal with public health, transportation, architecture and landscaping, and zoning and planning. The most traditional forms of environmental education—nature study and conservation—are easily adaptable to urban surroundings and points of reference familiar to the city dweller.

According to current statistics provided by the National Advisory Committee on the Handicapped (1976), there are presently 8 million children in the United States who are classified as handicapped or disabled. Over three-fourths, or 6 million, of these children reside in urban areas. Few would deny that children growing up in urban centers today encounter problems unprecedented in our nation's history. For children who are handicapped, these problems are magnified.

THE VALUE OF THE NATURAL ENVIRONMENT IN THE GROWTH AND DEVELOPMENT OF HANDICAPPED CHILDREN

Although limited, existing research indicates that the natural environment can provide a fertile medium for the physical, emotional, intellectual, and social development of the disabled child (*Havighurst 1965; Lefebvre 1972; Holden 1962; Robb 1971; Balla, Butterfield, and*

Zigler 1974; Guthrie, Butler, and Gorlow 1963). The value of the natural environment as a therapeutic modality can also be inferred from studies that have identified the detrimental effects of isolation, hospitalization, and institutionalization and the positive effects of exploration, free play, and the home environment.

Physical and Motor Development

Research has shown that physical and motor development of handicapped children may be retarded by environmental conditions related to their disability, such as institutionalization and isolation. Other research has shown that for some disability groups, physical and motor development can be enhanced by the provision of physically-based learning experiences in a play environment (Drowatzky 1968, Oliver 1972, Rarick 1973.)

Perceptual Development

The available research indicates that perceptual development is independent of intellectual development in the mentally retarded and that haptic perceptual development is similar for blind and sighted children (Doyle 1967, Gottesman 1971). Since, in these skill areas, the mentally retarded and blind can perform at approximately the same levels as their normal peers, it can be inferred that providing opportunities to develop these skills through play could give the disabled child successful experiences. It can be further theorized that these successes may be of value in enhancing self-attitudes and may have carryover value in other areas as well. Further research is needed to substantiate these inferences.

Behavioral, Personality, and Affective Development

Numerous studies of various dimensions of the self-concept of handicapped children have been reported (American Camping Association 1972). It is generally accepted that the lower self-concepts found among disabled children are due primarily to environmental factors related to the disability, and that self-attitudes can be enhanced through programs in which the environment is manipulated so that the child is able to perceive himself in positive ways. Similarly, in other areas of personality and social development, research indicates that en-

vironmental manipulation can be of benefit to the disabled child (Lowry 1974, Robb 1971, Tait 1972).

Intellectual/Cognitive/Language Development

The effect of the natural environment on intellectual, cognitive, and language development has been investigated in several recreation and school camps, as well as in recreation-oriented education programs. The results of these studies indicate that camping and recreation in general can benefit the mentally retarded, blind, deaf, and those with learning disabilities in improving communication and academic skills (Baer and Stanley 1969, Buell 1956).

PROGRAM PLANNING, ADMINISTRATION, AND EVALUATION

A considerable amount of literature describing innovative ideas in programming and program administration, and a limited number of research studies have been published. However, the body of scientific knowledge about the planning, administration, and evaluation of programs for the handicapped that use the natural environment contains many large, easily identifiable gaps.

Programs

Many environmentally oriented programs for handicapped children have been implemented. Some, within public school systems, have helped mentally retarded and learning disabled children to improve their academic skills and attitudes (Albert 1970, Brannan 1969). Others have been used to enhance the physical and social skills and self-attitudes of children with all kinds of handicaps. The activities in these programs have ranged from highly structured nature studies and traditional recreation to individualized environmental exploration.

Environmentally oriented programs for the handicapped in the community, sponsored by youth organizations such as the Girl Scouts, Boy Scouts, and YM and YWCA's, also comprise both traditional and innovative activities (Barnett 1970). Unlike school programs,

however, their objectives are usually not stated in terms of specific physical, emotional, and intellectual benefits.

Community-based programs sponsored by municipal recreation departments, universities, voluntary health agencies, and private organizations (*Mitchell 1971, Ryan 1964*) differ according to the philosophy and goals of the sponsoring agency. Some, like public schools, establish their programs to achieve specific therapeutic objectives. Others, like the youth organizations, offer a purely recreational program based on the philosophy that activities which use the natural environment are inherently therapeutic.

Outside the urban community, environmentally oriented programs for the handicapped can be found in organized camps and in federal and state parks. Most camp programs described in the literature are at therapeutic camps and integrate therapeutic techniques into traditional camping activities (*Vinton and Pantzer 1974*). In the parks, services have been expanded in recent years to include not only accessible outdoor facilities, but also larger environmental programs for the handicapped.

Two major trends are the integration of handicapped with nonhandicapped participants (mainstreaming) and year-round programming. Integration of people with every major type of disability has been described in the literature, and both successful and unsuccessful integration efforts have been documented (*Bent and Miller 1969, Williams and Coltoff 1965*). Although we do not fully understand when and how integration is successful, some answers are being provided by demonstration projects and research studies.

Year-round programming is gaining impetus across the nation. It is being offered as a partial solution to the financial waste of using facilities and personnel only part of each year. Some descriptions and discussions have been presented in the literature, but the overall impact of year-round programming has not yet been assessed.

Administration

The diverse public, private, and voluntary organizations involved in providing environmental programs to special populations share certain administrative concerns, especially

ly funding and staff development (*Nesbitt et al. 1972*).

Inadequate funding has prompted agencies in some communities to pool their resources. In other communities, it has led to a greater use of volunteers. Among the sources of volunteers cited in the literature are Vista workers, members of senior citizen groups, older persons with handicapping conditions, and reformatory inmates.

Although it is generally agreed that staff working with the handicapped need specialized training, there appears to be little agreement on the type or extent of training necessary.

During the spring of 1972, a major national conference on training personnel in camping and outdoor recreation for handicapped children was sponsored by the Bureau of Education for the Handicapped and San Jose State University. Using a modified Delphi technique, the participants developed a position statement that was published with other position statements in the conference proceedings (*Nesbitt et al. 1972*). To date, there is little evidence that the recommendations of this conference have been implemented.

One need identified by that conference was further study of program evaluation. Although considerable research has been reported on the physical, psychological, educational, and social effects of specific programs that use the natural environment as a therapeutic modality, few investigations that dealt with overall program evaluation have been reported. In studies of the effects of camping programs, the programs are generally described, but rarely quantitatively or qualitatively defined. Thus, replicating successful programs remains difficult and evaluating failures remains guesswork.

SUMMARY AND RECOMMENDATIONS

Environmental learning is a joyful activity, a relevant pursuit, and a way to help the handicapped child understand his or her own environment. Environmental learning programs for handicapped children should closely resemble those for nonhandicapped children. Modifications should be based on the needs and abilities of each child, not on their handicapping conditions.

In developing such programs, parents, camp personnel, recreation leaders, and teachers should understand that environmental learning includes various stages of experiential development—planning, anticipation, actualization, recollection, and evaluation. The following are general suggestions for developing and implementing those experiences:

- Provide group situations that encourage close contact with other people.
- Use interested people and whatever equipment, props, and spaces are available.
- Provide a nonthreatening, nondemanding environment.
- Develop a program that will allow all children a variety of experiences despite their handicapping conditions.
- Introduce new activities gradually or incorporate them with familiar ones to expand the child's experiential range.
- Encourage creative, inventive, and expressive efforts by providing environments with a wide array of manipulatable materials.
- Develop a program what will afford personal enjoyment and satisfaction to all participants.
- Provide the positive "can" instead of the negative "can't".
- Encourage the child's sensitivity to what is happening in his environment by helping him to understand his own feelings and reactions.
- Develop within the child the responsibility and desire to manage life pursuits.
- Work to create a positive self-image and self-respect leading toward the desire to grow and develop.
- Encourage self-discovery, curiosity, inquiry, and initiative.
- Don't limit yourself to one facility. Utilize all types of environments, especially the natural environment.
- Integrate handicapped children and other children in the same program.
- Recognize that children are innately curious and will explore their environment without your intervention.
- When two or more children are interested in exploring the same problem or materials, give them full opportuntiy to collaborate in some way.
- Understand that a child may possess knowledge and yet be unable to display it publicly. Knowledge resides with the knower, not in its public expression.

Although camping and environmental education are steps in the right direction, they touch only a small group of children and usually only for one or 2 weeks a year. What kinds of environmental learning activities can take place every day? It is much easier for the handicapped child to adjust to the natural world, with its diversity, than to the physical or cultural environment.

The man-built physical environment presents problems for the handicapped child because design standards have ignored those with unusual requirements. Advocacy of the handicapped child's right to equal opportunity is beginning to create public awareness and bring about changes. The next major problem is the social environment, which includes people and their culture. The handicapped child is restricted by social norms that exclude those who are different.

Traditionally, environmental programs for the handicapped have been endorsed by parents, educators, and recreation professionals because of the supposed benefits of living in the natural environment. As we enter a new era of concern for our natural, physical, and cultural environment, the concept of human ecology is coming to the fore. There is a trend toward reconceptualizing programs for the handicapped, with the focus on the individual, not the handicapping condition, and on the individual's interaction with his total environment. The learning experience that takes place in the natural environment can take place in daily life also—in the home, the school, the recreation center — everywhere. The environment itself is the classroom, and the learning that takes place there can help the handicapped child enter the mainstream of society.

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