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ABSTRACT

Described is a project in which architectural students designed and constructed a sensory environment for young multihandicapped children. It is explained that the architectural students were exposed to general curriculum information, teacher reactions, and experiences with the children. Benefits from this cross-disciplinary effort are seen to include student involvement with handicapped children. (CL)

MULTI-MEDIA SPACE FOR YOUNG MULTI-HANDICAPPED

Decision - Design - Delivery
Integration of Related Disciplines

First Chance Project Space - Interdisciplinary Program

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Decision - Design - Delivery

Educational Purpose

In the training of students of architecture for the profession, the Accredited Schools of Architecture are concerned not only with the role that professionals will play in the architectural design of basic types of construction, such as housing, commercial and industrial, but also the students' response to very specialized types of problems ... encountered as pilot considerations in many cases. This includes the ability to develop a program for the problems as well as to solve them.

Decision

The participation of the 22 fourth year design students of the School of Architecture and Environmental Design, Kent State University in the First Chance Project serves as an illustration of response by students to a very special need . . . generated with a desire to test their newly acquired knowledge should have opportunities to respond with new ideas. It is my intent to share our experience and their ideas with you.

First Chance

The First Chance Project Space, an interdisciplinary program by the Department of Psychology and the School of Architecture and Environmental Design was possible within the H.E.W. Handicapped Children's Early Education Program Grant, P.L. 91-230

First Chance (continued)

Title VI Part C, (July, 1974 to July 1, 1977) to Kent State University to be used at the site of the Hattie Larlham Foundation, Inc. In considering the limitations of institutional settings, the need for more stimulating and responsive environments for the profoundly handicapped was recognized. Likewise, it is appropriate to acknowledge the foresight of the author of the First Chance Project, Dr. Jeanette Reuter who is oriented to such concerns with both a brother and a son who are architects.

Design

In the "Learning Environment Program" of the "Services to Children" part of the grant, it was "the objective to rebuild the classroom to be a sensory environment including visual, auditory, tactile, and vestibular stimulation. Ideally, this "multi-media" room was to be used by the First Chance Staff and children six days per week. The room is open and available to aides, volunteers, parents and children on weekends, holidays and evenings."

To provide this kind of multi-media environment in a 27' by 18' space, was unquestionably a challenge for the students. This was a pilot project, unique to this grant and now is a new resource for the service to children in the community. Its purpose is the orientation to physical surroundings and

Design (continued)

and their influence on human behavior and stimuli.

A year ago at this time, the two-week program was issued to the eleven teams of two students for their response in the following areas of concern within it:

Learning Environment Program - emphasis on learning to develop a full time classroom as an exciting, attractive multi-media environment for exploration by handicapped young children.

Consideration of tactile, sensory, stimulative, auditory; as textures, sloping and multi-level areas, tunnels, mirrors, primary colors, graphics, pictures, switches or buttons to control lights or noises, dowels to lift body with hands, small spaces for contact with other children.

Children (ages 5-8 years) involved: Small groups of children will be using multi-media classroom eight hours per day, six days per week. A typical day is made up of half-hour modules, four to six children, each for a half hour.

Cost for Construction within grant $2,500.

The initial visit of the students to the Hattie Larlham Foundation where there are 105 multi-handicapped children gave the First Chance Staff an opportunity to present both oral and written information about the abilities and handicaps of the children using the classroom, general curriculum objectives and information relative to the multi-media design such as need for washable surfaces, some stimulus free space, etc. While there, the students measured in detail and recorded the information about the rooms which they would be

Design (continued)

designing. Following their visit, the first specific assignment was to prepare a written program wherein they determined the nature of the problem as they saw it, established a set of operating assumptions to clarify the restrictions on the area of investigation, and established a set of goals and objectives.

A few quotes will indicate the nature of the reports:

> Considering the variable stimulus response range of the children involved in the play area it became necessary to consider a lowest common denominator of perceptual ability in order to design a space that "does something" for everybody (we hope). Basing our proposals on the fact that most of the children can feel as well as see seems to be the most applicable assumption. The proposals we have attemped to show allow for flexibility and practical usage at a minimal expense.

> The room and its components are designed to be a sensory tool for use by the teachers. The simplicity of the design offers to the child the same devices, and because of their simplicity, an opportunity for utilization without supervision. This idea was stressed because the teacher:child ratio does not permit every child in the room to have a one to one relationship with a teacher at all times; thus, the one room provides these children with the opportunity to encounter certain stimuli on their own, either by the placement of the child for the less or non-ambulatory or through the exploration of the more mobile children.

A third team concisely identified the problems as "an idea of helping teachers to help the children to help themselves."

At this point it is important to identify the role of the consultant that were a part of the development of the multi-sensory space provided by the grant through -

Architecture - Research - Construction (ARC).

A Cleveland based organization of nine people who worked initially with the Western Reserve Psychiatric Rehabilitation Center to establish better environments for residents and staff in institutions were the consultants. TADS - Technical Assistance Development Systems of Chapel Hill, N. Carolina coordinated their efforts for H.E.W. A major Handbood entitled Changing Places and Settings has resulted from not only their research but their actual construction and evaluation of spaces and places.. Of major benefit to both the students and the staffs of this inter-disciplinary effort, ARC's first role was didactic. They were available four times in working sessions to determine patterns for the development of the physical space.

They provided some behavioral/environmental implications for the program guidelines established which consisted of expanded consequences of tactile, vestibular, auditory and visual-stimulation as well as interaction between children, motor skill development, body image, socialization, child scale, burden of carrying children, etc. There was also considerable detailed information on teacher's desk, one to one booths, socializing pit, feeding tables, lighting, mirrors, graphics, hanging net, relationship to windows, etc. Their questions served to stimulate the thinking of both students and staff beyond our limits of expertise.

Space for
[illegible] Handicapped

It is important to recognize the interest and response of the students who made extra trips--about seven miles from Kent State to the foundation to observe the children, talk with the staff, and the psychology students who work directly with the children and record their responses to the environment and direct stimulation process. Some students, in an effort to enter more fully into an understanding of the children and their problems took time to work and play with them directly. This kind of interaction was important to the end result in many cases.

Final Presentation

Following criticism by the staff and consultants and more specific instruction the two-week design solutions were finished. Final presentation included not only plans, isometrics and details but also a narrative statement that described the rationale for the design and an estimated budget. Even a new vocabulary of terminology evolved from the designs when students identified solutions with such words as "noodle box," "pudding wall," and "pit pranks," which had evolved from some activities with the children by the staff.

Jury

It required seven hours in two separate sessions both with and without the students for the staff and consultants to make a decision and select one of the 11 team projects to be built. It was the "moment of truth" --soul searching

(continued)

on the part of psychologists, educators, architects and consultants as to the implication for the solution chosen. The strongest realization by all involved was that in the review of all of the ideas presented there were no wrong answers.

Meeting with the student winners, James Beal of Kent, Ohio and Con Kubilus of Akron, Ohio, the staff determined answers for the following questions:

A. A priority listing for various parts of the solution

B. The extent to which drawings were needed to build the solution

C. The accuracy of cost estimation as determined by winners

D. Compliance with codes and fire inspection

E. Alternatives to method of payment of money and fund release

F. Insurance of those involved

G. Alterations to existing building space outside of First Chance expenditure as part of Larlham Foundation

H. Time frame over summer of 1976 to construct the solution

Delivery

Each of these being resolved the two men proceeded as their schedules allowed to assemble materials. Extremely helpful to them was the assistance of Dan Marchetta of the Marchetta Construction Company of Akron who not only obtained at re-

Delivery (continued)

duced prices many of the materials and hardware necessary to complete the room but also donations of materials. Contact with purchasing and delivery through a general contractor was a new dimension of experience for the students.

At the time of preparation for this presentation I asked Jim and Con, the two students, to reflect on their summer experience in building their design. They indicated that,

A. This was their first experience with a client as a "real client".

B. Coordination of First Chance requirements with Larlham Foundation accommodations caused conflicts to do jurisdictional problems.

C. They were initially considered as cabinet makers rather than aspiring young architects.

D. At one point the client stopped the work which is an Owner's right not the architects.

E. They have empathy for the role of the Contractor as he assisted them in obtaining materials.

F. It required one month of effort to obtain one material -- the reflective Mylar.

G. They realized that there were many more problems to be solved beyond what they had drawn, e.g., the tube -- which required consideration of size and shape of openings for the tube to be structurally "safe," its angle in relation to the children's use and the floor, as well as methods of attachment.

H. All of the construction had to be free standing and removable from the room in that it was not a permanent installation.

I. Their solution was entirely built except for the glass bubble window which would replace the existing window. First Chance still hopes that they can afford to have this glass bubble window to add further to the experiences the child can have along the path of movement.

J. It was important to them that their solution was used -- that it benefited both children and teachers, and therefore was a rewarding experience.

The multi-sensory space has now been in use for over six months. What of response by the children as well as staff to it as a result of the earlier decisions? The staff is of the opinion that there is increased response on the part of the children, e.g., a desire to use and move on the ramp. The children seem to sense the paths that are available to them as new experiences with the ramp, the platform and the tube. The definition of different kinds of spaces as well as the possibility of different kinds of experiences. The children are negotiating the total path repetitively from ramp to waterbed to ramp to window through tube and back again. Their enjoyment of the waterbed has become a reinforcement for other activities. In other words, they will do other things knowing that the reward will be the waterbed experience. For the spastic it is a way of getting movement without tension. There is increased laughter and enjoyment by the students and the effect of the new environment has had its effect on the staff as well. The cubicles for one to one use are in constant use the entire day. The standing bars have provided a source for physical accomplish-

ment and development are carefully recorded as part of the grant on a day to day basis.

In Summary

In summary, several benefits have been derived from this kind of interdisciplinary problem:

1. Architectural students became involved in determining the solution to a very pragmatic and real problem.
2. Students obtained empirical feedback for their designs and the effectiveness of the environment as a teaching tool in and of itself.
3. They participated in a cross-disciplinary effort at the university level to produce a unique contribution to space planning.
4. They learned about handicapped children and in a way helped to determine learning patterns and instructional strategies through their designs.
5. Those who visit the prototype environment will probably be inspired to change existing spaces, many of which are totally devoid of stimuli.

As psychologists and educators you should make use of the schools nationally that have accredited programs in architecture as a resource for both your benefit and ours.