

# Early Classroom Based Intervention and the Role of Organizational Structure

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**Abstract:** The role of organizational structure in classroom based early childhood intervention programs was explored. Nine characteristics were identified as necessary components for an effective system. The operation of a curriculum evaluation feedback model which incorporates these nine components is described and discussed in terms of the interrelationships among the elements of the system.

In recent years there has been an intensive search for the critical factors which influence growth and development in disadvantaged and handicapped preschool children. This search has explored the problem from all levels and perspectives. At the classroom level, new curricula and materials have been developed and studied, relevant staff characteristics have been identified, and various theoretical positions have been expressed in program designs and then evaluated. Indeed, these are important factors and their selection and evaluation should be carried out with considerable care. However, the continuing analysis of program effectiveness has recently led us to recognize a variety of other variables which can significantly influence the success of early intervention, classroom based programs. In fact, in many instances, these additional factors appear to constitute a condition necessary for success.

Taken together, the factors just referred to are perhaps best described by the term *organizational structure*. This, in turn, is related to the "systems" concept which is presently receiving more attention from special educators (see Lerner, 1973). Essentially, this refers to the explicit and implicit ways in which the elements of a program are defined and the ways in which they interact with one another.

A number of investigators have recognized the importance of this organizational component, although the design and systematic analysis of formal systems are clearly lacking. For example, in a review of research of early childhood intervention programs, Karnes (1973) noted,

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*The work reported herein was  
supported in part by Grant No. OEG-0-  
74-0546 from the U.S. Office of  
Education, Bureau of Education for  
the Handicapped. A version of this  
article was presented at the Annual  
Meeting of the American Association on  
Mental Deficiency, Toronto,  
Canada, June 1974.*

Attention to individual differences, precise planning, inservice education, parental involvement, and on-going evaluation appear to be important components of any preschool program, especially for the disadvantaged and handicapped. (p. 142)

Similarly, Weikart (1972) pointed out the absolute necessity for daily planning and supervision. Spicker (1971) also suggested that common elements of successful intervention programs include assistance by a research staff and structure in terms of short and long term goals and daily lesson planning.

At the National Children's Center we attempted to design a mode of operation for the classroom level which incorporated these and related findings. We identified nine characteristics an effective system should contain, and these characteristics will be elaborated upon as the model is described more fully. Specifically, we determined that to be useful a system should be designed to provide direction, permit the individualization of instruction, be adaptable, ensure accountability, maintain a strong evaluation component, provide a link to research, be feasible, provide for teacher training, and be empirically based.

With this background, then, I would like to describe the details of an organizational system for the classroom which has recently been developed at the Experimental Pre-school. Although this model was designed within a behavioral framework, the general concepts and methods appear to have relevance for a wide range of orientations.

## Description of the System

### Providing Direction

Conceptually, our program operates at three levels (see Figure 1). First, a planning level exists in which all behavioral objectives, criteria for success, necessary reinforcers, and instructional sequences for those objectives are mapped out. The specificity of these objectives may vary, but in this program they are highly focused. This permits a determination of baseline levels of performance on these objectives and placement of the child in the curriculum accordingly.

The planning level provides direction, the first characteristic of this system. In this regard, Weikart (1972) noted that a successful curriculum is one which guides the teacher by providing an activity structure which ensures

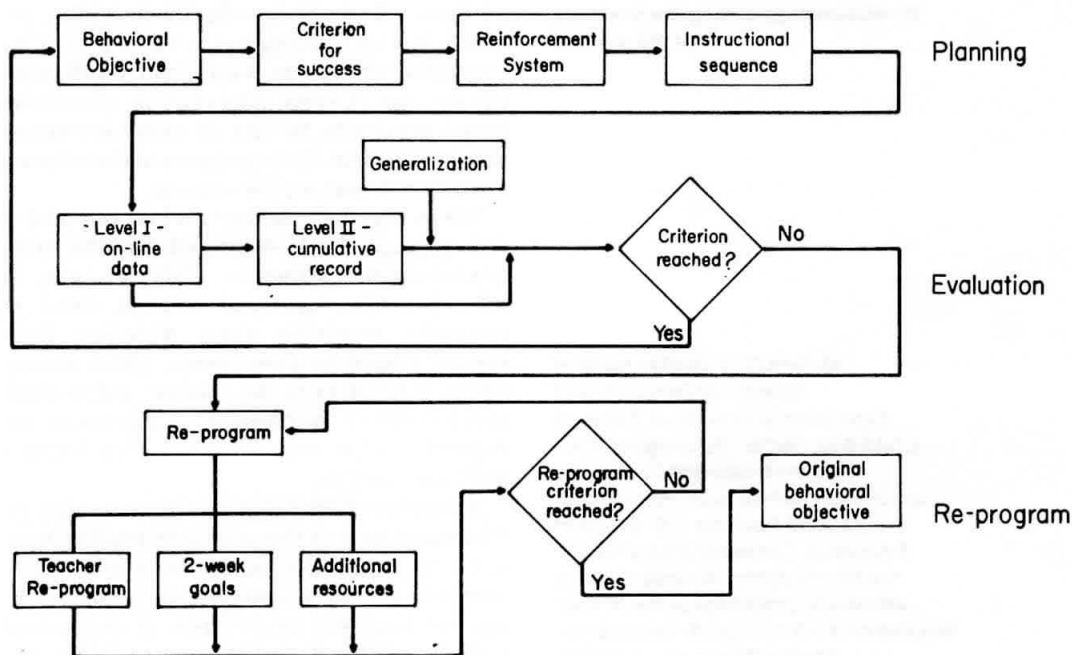


FIGURE 1. Curriculum evaluation feedback system.

that his energies are not diverted to irrelevant and presumably nonfunctional interactions. The structure inherent in the model at the planning level does in fact insure a constant focus on relevant interactions and, more importantly, directs an organized relationship between planning and evaluation. In addition, the planning level generates a product which is a public statement of goals and objectives. In this way the program lends itself to careful examination and review by those participating in it and by professionals, parents, the advisory council, and other community members. Recent criticisms of behavioral programs have focused on the frequent tendency to maintain tangible rein-

forcements but simultaneously record behaviors as well. The Level I record sheet contains information which includes the behavioral objective on which each child is currently working, an indication of whether criterion has been reached, and notes on any other relevant information. During unstructured periods or related play, social, and cultural activities, other forms of data collection procedures are used.

Generally, lessons are presented to a group of four or five children. However, although there are questions directed to and appropriate for the group (intended to increase general attending skills or for children at the same level), each lesson is actually designed on an

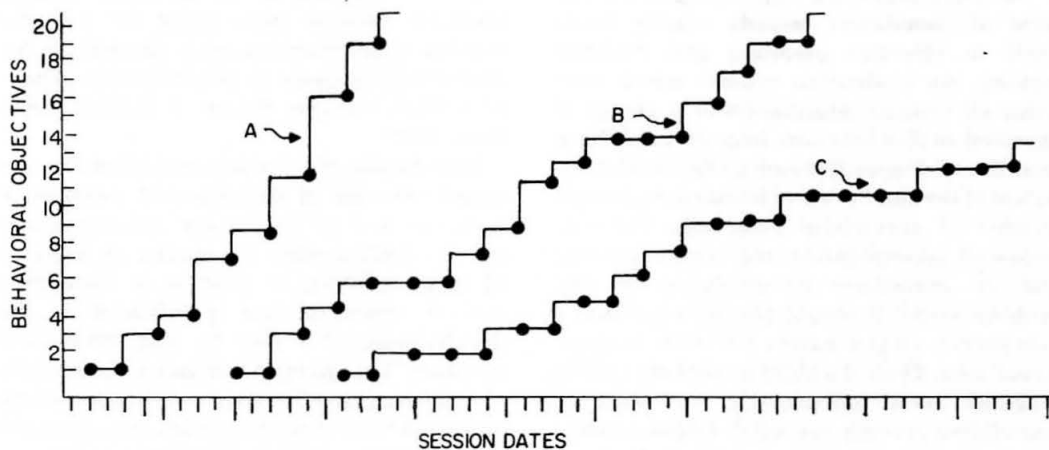


FIGURE 2. Results of three children working through a particular curriculum at different rates.

forcement systems unnecessarily (Forness & MacMillan, 1972) and the failure of many to perceive behavioral interventions as implicit value judgments (see Winett & Winkler, 1972). These criticisms underscore the importance of creating conditions for critical examination of the program's objectives.

#### Evaluation and Individualization

On the second level, we evaluate our planning in the classroom by recording the outcomes of our instructional interactions during each lesson and nonlesson activity. Level I evaluation (see Figure 1) refers to the recording of each child's responses to critical probe questions related to each behavioral objective during every lesson unit. Of course, this requires the teacher to not only present

individual basis with different teacher-child interactions and separate materials. In accordance with prior planning, the teacher interacts sequentially with the children to provide and elicit different information from each member of the group. Consequently, the curriculum, as translated into specific behavioral objectives, the gathering of baseline data, the instructional methodology, and the recording technique are all compatible with the second characteristic a classroom based system should contain—a means for individualizing instruction.

Data from each lesson are then transferred to cumulative records while assessing whether criterion has been reached at each point. Figure 2 illustrates the form of the data generated by this technique. The graph shows three hypothetical though representative

results of three children who have worked through a particular curriculum at different rates. The numbers on the vertical axis reflect previously defined behavioral objectives while the horizontal axis reflects the number of sessions or lessons. Vertical increments indicate that the child has reached criterion on the probe questions for that lesson unit. As illustrated, child A proceeded quite rapidly through the 20 steps of the curriculum, never failing a lesson and frequently reaching criterion on two or more objectives in a single lesson period. Child B proceeded at a moderate rate, finding difficulty only at certain points, while child C learned at a slow rate with considerable problems at various points in the curriculum.

The description of a child's progress in the form of cumulative records readily lends itself to effective planning and decision making. An evaluation system which provides all critical information at a glance is essential to this function. Inspection of these records (see Figure 3) permits a rapid determination of the child's rate of learning, types and number of specialized programs, the outcomes of generalization and review probes, and an immediate identification of any problem areas. It should also be noted that a cumulative record exists for each instructional area. Thus, if a child is working on five language areas concurrently, five separate cumulative records are used. Consequently, this process is consistent with Gallagher's (1973) notion that for evaluation (another characteristic of the system) to be valuable in planning and decision making, it must be an intrinsic part of the total program.

#### **Teacher Training and Accountability**

If criterion is reached on any objective, we, of course, proceed to the next step. However, if it has not been reached over a period of time (three lessons without success is a rule of thumb), then we enter the third level of our model, the *reprogram* level. Here we assess what is wrong. For example, the reinforcer may not be sufficient or appropriate, or the task may be too complex or not sequenced properly. The reprogram may initially be a modification by the teacher, following a procedure similar to Cartwright and Cartwright's (1972) diagnostic teaching model. However, if the problem is persistent or severe, a short term goal program is designed, usually intended for a 2 week period. Here an

intensive analysis of the situation is conducted, and a step by step program is written jointly by the teachers and consulting staff. Following a successful reprogram, we return to the original behavioral objective.

There are numerous behavior patterns unique to each child which are in need of attention but are not generally part of a social or academic curriculum. Whenever a teacher recognizes such an area of concern and feels it warrants special attention, an intervention program is designed within the context of the short term goal procedure. This technique provides a simple and immediate means of adapting the program to attend to subtle forms of behavior. Furthermore, the short term goal procedure forms the basis for an important segment of the inservice training program, another requirement for a useful system, supplementing other procedures for instructing teachers in reinforcement principles (Hall, Panyan, Rabon, & Broden, 1968; Rule, 1972).

Specifically, the 2 week goal identifies the target behavior in objective and measurable terms as well as the setting and antecedent events. Additionally, it requires an analysis of task variables in relation to the child's current repertoire and is followed by the development of a step by step behavioral program. This program includes the process of collecting baseline data, a definition of the units and type of measurement (e.g., periodic probes, time sampling, frequency counts), a written sequence of instructional procedures, a statement of the criteria for each program component, and an identification of the reinforcers to be used. This information is then summarized in graph form.

Typically, most of the initial short term goal programs relate to behavioral and instructional control. As the year progresses, however, reprograms for academic objectives in many areas as well as various social-emotional programs become the focus of attention. At the outset, most of the programs are written primarily by the consulting staff but as the teachers gradually acquire the various skills needed to effectively carry out this procedure, they perform this function. Consequently, this technique generates extensive experience in writing, implementing, and evaluating a wide range of educational programs.

As this overview has revealed, the interrelationships of the elements of our model

assure accountability at many levels. Carefully defined goals and objectives and the measurement of change are essential to any notion of accountability (Jones, 1973). Our planning and evaluation levels require a continuing assessment of each instructional activity, as well as provide a decision rule and method for devising new programs when difficulty develops. Certainly, the many issues surrounding the concept of accountability are complex and beyond the scope of this article. However, as the description of our model suggests, we operate in general agree-

week goal procedure also generates a series of programs which may be catalogued for future use or incorporated directly into the program planning level. Moreover, the redefinition of behavioral objectives and changes at the planning stage provide a ready channel for the input of new conceptual or theoretical ideas.

It was necessary to devise an operational procedure which guided our activities and generated the essential data but did not interfere with the teacher's instructional activities or ability to alter an instructional sequence to take advantage of unexpected

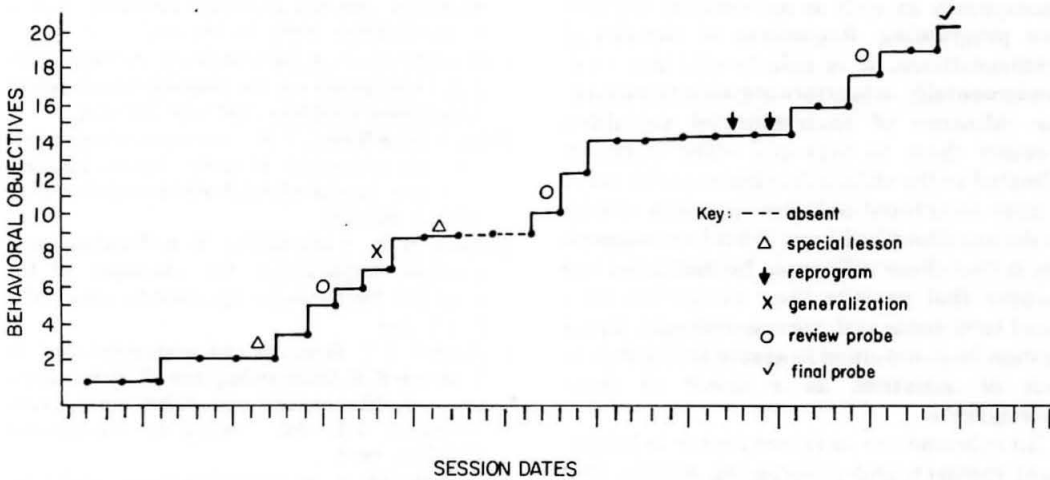


FIGURE 3. Record of one child.

ment with Jones' (1973) proposal regarding accountability:

Rather than seek measures of student, teacher, and school characteristics and performance for purposes of deciding who is responsible, the measures be obtained and the relationships studied to determine what has been accomplished, and how the achievement of objectives can be facilitated. (p. 641)

#### Adaptability and Feasibility

The concept of accountability is related to another characteristic of the system, adaptability. Any useful system must be designed to ensure its own modification as a result of new inputs. The continuous monitoring of each child's performance provides ample feedback for this purpose. In addition, rules for meeting objectives and reprogramming exist. The 2

ways to enhance the learning experience. That is, the system must be feasible. Our experience has shown that the data recording and related planning and evaluation methods become a natural part of the teaching process.

#### Research and Empiricism

Blackman (1972) recently described the general lack of impact of educational research. He argued that this research has been too far removed from day to day classroom situations and advocated that researchers pay more attention to teachers' needs. Our system has certain characteristics which relate to this point. By maintaining explicit behavioral objectives and an evaluation system, the form of teacher generated problems generally corresponds more closely to that which researchers feel is necessary to conduct their work. The identification of

persistent problems through continuous evaluation and the short term goal procedure facilitate communication among teachers and researchers. Moreover, behaviorally based research methods, such as multiple baseline designs, are highly compatible with teacher selected problems and are typically carried out within the classroom setting. I have described elsewhere a research-service model (Guralnick, 1973) designed to meet these needs.

Finally, the system must be empirically based. Although our model was conceived within a behavioral framework, the adoption of a particular set of principles is both unnecessary as well as antithetical to effective programming. Regardless of theoretical predispositions, it is safe to conclude that, fundamentally, educators are all interested in the influence of environmental variables, whether these be toys and other materials adjusted to the child's developmental level or a more structured didactic approach similar to the one described here. What I am suggesting is that these influences be measured in a manner that permits their evaluation on a short term basis and, correspondingly, that a system be maintained to assure the modification of activities as a result of these assessments.

An examination of recent trends in behavioral research and programming reveals that education is in fact approaching the state of affairs, as Winett (1973) noted, in which behavioral programs reflect "a broadly based model of environmental influences" (p. 209). He further pointed out that this conceptual framework is highly compatible with even open classroom approaches, since considerable structuring of the teacher's role in the form of individualizing, planning, and assessing actually does take place. Recent research on the role of ecological factors in the classroom (Kounin & Gump, 1973) and the design of day care centers (Doke & Risley, 1972) clearly demonstrate the potential value of this concept of general environmental modification. Moreover, the methodology of behavior modification can be extremely useful in assessing the outcomes of these environmental variables while not interfering with essential classroom functions (Guralnick, 1973; Winett, 1973).

### Concluding Comments

At this point we cannot determine the boundary conditions for the effectiveness of

our model and I expect that it will undergo considerable change as new information becomes available. Suffice it to say that it has worked successfully for us in a structured setting. Also, it has generality with regard to the entire range of handicapping conditions, since it has been useful for children with virtually no functional speech or socially appropriate behaviors to children with no developmental difficulties whatsoever.

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