

A CURRICULUM DESIGN FOR A YEAR-ROUND
ELEMENTARY SCHOOL

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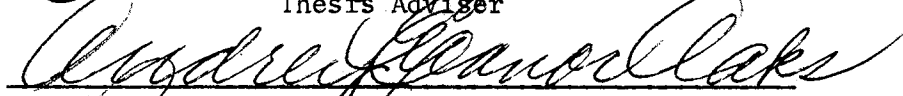
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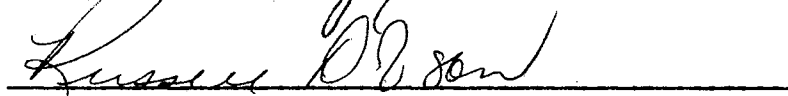
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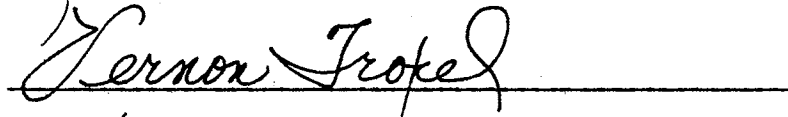
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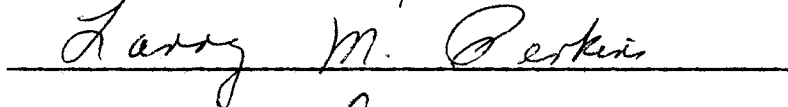
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PREFACE

This study was concerned with the development of a curriculum design for a year-round elementary school. The purpose of the study was to design a curriculum which would provide appropriate learning alternatives for pupils and facilitate optimum utilization of professional expertise, auxiliary personnel, community resources and school facilities.

The designer wishes to express her appreciation to her major adviser, Dr. Idella Lohmann, for her guidance and support throughout the study. Appreciation is also expressed to her other committee members, Dr. Russell Dobson, Dr. Audrey Oaks, and Dr. Larry Perkins, for their suggestions in the preparation of the final manuscript.

A special note of thanks is also given to Dr. Paul McCloud, Assistant Superintendent for Research, Planning and Development, Tulsa Public Schools, for his assistance in preparing the C.P.M. network chart, to Mrs. Betty Landrum for typing earlier drafts of the manuscript, to Mrs. Dixie Jennings for her valuable suggestions concerning form in typing the final manuscript, and to Mr. Dave Tomlin for the illustrations.

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CHAPTER I

INTRODUCTION

Societal changes during the last decade, the era of the sixties, have focused the attention of educators on the inadequacies of curriculum designs in current use. Prevalent among educators such as Berman (1968), Frazier (1971), and Burns (1970) is the contention that the curriculum which historically was designed to meet the educational needs of an agrarian society is inadequate to cope with the complexities of today's technological one. Student unrest, the concern over dropouts and the demands for accountability from the public provide ample evidence to support this contention (Kelley, 1971).

With rising operational costs and the reluctance of the public to make additional tax commitments the impact of the current school financial crisis in most districts is also evident. In order to attain not only maximum economic efficiency but also to provide improved educational opportunities for students, both educators and laymen are directing attention to the investigation of the potential for extended use of school facilities. According to reports from the National Education Association interest in the year-round school concept is gathering momentum. A conservative estimate is that six hundred school districts are seriously studying proposals that would extend the current nine-month calendar (Ernest, 1971, pp. 51-52).

In spite of this interest, it is the consensus of proponents of the

year-round school [Ernest (1971), McClain (1971), and Glines (1971)] that although in most cases the 180-day school is inadequate in providing for present-day needs of society, an operating model for the year-round school has not been universally accepted. It is viewed by some, notably McClain (1971) and Glines (1971), that this reluctance may be attributed to the lack of interest and effort in developing a curriculum design which provides appropriate learning alternatives for pupils and has sufficient flexibility to accommodate a year-round educational program.

The Problem

The problem of this study was to develop a curriculum design for a year-round elementary (K-5) school to accommodate a population of six hundred students. The purposes to be served by the study were to design a curriculum which would provide appropriate learning alternatives for pupils and facilitate optimum utilization of professional expertise, auxiliary personnel, community resources and school facilities.

In developing this design attention was directed to the four components identified by Venable (1967) as fundamental necessities for the existence of curriculum: the learner, subject matter or content, the learning process, and the teaching agency.

In developing an organizational scheme for the design, attention was focused on philosophical, sociological, psychological, and theoretical dimensions of curriculum. The beliefs and positions reflected in these dimensions provide the conceptual framework upon which the assumptions were established and serve as the basis for a logical analyses of the interrelationships existing between the components. Strategies were also developed to optimize the use of professional and auxiliary personnel,

community resources and school facilities on a year-round basis.

Background and Justification for the Study

The concept of year-round educational programs if viewed only from the perspective of expanding the school calendar is insignificant. However, when combined with curriculum revisions which establish new priorities and when considered in conjunction with massive educational reform needed in a changing society, it is predicted that a year-round educational program can have a tremendous impact on improving educational opportunities for today's youth (Glines, 1971).

Following is a review of the literature pertinent to two facets of the identified problem: the current status of the year-round school movement and its predicted impact on the improvement of educational opportunities and an analysis of function and assessment of needs in the area of curriculum design. In addition the unique aspects inherent in a year-round program are recognized in terms of their implications for design.

Current Status of Year-Round School

Historically the year-round school concept is not new. As early as 1904 a year-round school program was operated in Bluffton, Indiana for a short period of time. Other systems which have operated year-round programs include Omaha, Nebraska, Nashville, Tennessee, and Newark, New Jersey. Although most of these programs were short lived the Newark experiment had the greatest longevity. Beginning in 1912, the Newark program was discontinued in 1931 during the depression for lack of funding. More recently the Atlanta, Georgia secondary school plan and the

year-round elementary program developed by the Valley View School District located in the Chicago area have received the greatest acclaim (McClain, 1971).

The Atlanta plan, in an effort to improve the educational program, was funded by a federal grant of one million dollars. After a two-year planning period the year-round program was implemented in 1968-69. A special curriculum was developed and students had the option of attending either three quarters or all four quarters.

In reviewing case studies¹ by the National School Public Relations Association of the year-round school, much of the success of the Atlanta program is attributed to the development of a new curriculum which provided each child with challenging educational opportunities in which he could feel successful. Course offerings were determined by student needs -- thus creating greater flexibility for students.

Another factor which has provided support for the Atlanta program is the positive reaction of teachers, students, and the public. According to Superintendent John Letron, teachers generally favor the year-round program. One positive aspect for teachers is year-round employment. Many who had previously been forced to seek summer employment are able to work the full year -- thus increasing their income approximately twenty-five percent. School officials are quick to point out, however, that the advantages for the Atlanta program for the district are not financial.

The Valley View plan, sometimes referred to as the 45-15 plan, was implemented as an economy measure. Attendance for three consecutive quarters is mandatory. A student attends school forty-five days and

¹Case studies were compiled by Seymour Holzman.

"vacations" fifteen. The total student population is divided into four groups, and by staggering the entrance dates only three-fourths of the student body are in school at one time. Thus, the student capacity was increased by thirty-three percent without additional facilities. No special efforts were made to design a curriculum for the Valley View plan (Ernest, 1971).

School officials feel that the 45-15 plan is working and is serving its purpose in the community. So apparently do many other officials from around the country. The Valley View 45-15 plan is the one most closely studied, copied and adapted by other elementary systems. And even the federal government is looking at it closely. Following are the findings of a recent (1973) PREP (Putting Research into Educational Practice) report on the Valley View plan.

While posttest and evaluative data are not yet available on the Valley View 45-15 plan, the baseline information appears to warrant the following conclusions:

(1) One-third more classroom space can be made available immediately through the 45-15 plan.

(2) Immediate savings (up to 5% per pupil) can be gained if enrollment is rising rapidly, and debt retirement is high per pupil.

(3) Educational benefits immediately accrue if overcrowding or double shifting is prevented.

(4) The community can be won over to the support of short vacations at four different times during the year as they learn how to use the time. Those people most strongly objecting are generally critical of the school system.

(5) Student scheduling is the toughest administrative problem to solve. However, if a systems approach is used and a good organizer is responsible, scheduling can be done in two or three months and on a budget of about \$1 per pupil. Two factors that can ease the problem considerably are the use of individualized instruction and schools with large enrollments. Student scheduling is easier with nongraded programs because students can come and go if the instruction is truly individualized. Also, larger enrollments tend to reduce chance imbalances.

(6) Basic research objectives can be more easily reached if incorporated into "formative" evaluation. This means that the people involved must see "pay-off" from evaluation activities.

(7) Teachers are willing generally to try a year-round operation, especially if given the option on the length of their contract. However, they are quite skeptical of most claims made for year-round education prior to any experience with it.

(8) The move to a year-round operation wins strong support from economy-minded taxpayers and watch-dog groups. However, a majority of parents are more concerned about the educational outcomes of the program.

(9) Any school system can move to a year-round operation if it anticipates and plans for: winning community acceptance; involving professional staff with all the specific ramifications of the operation, especially student scheduling and developing a model or design that does not penalize in the eyes of the community, certain families.

Other models for the year-round elementary school which do have a special curriculum and hold even greater promise include Park Elementary School implemented in 1966 at Hayward, California; Becky-David Elementary School at St. Charles, Missouri implemented in 1969; and Wilson School, a K-12 laboratory school, at Mankato State College in Mankato, Minnesota. A research-demonstration model of the Flexible All-Year School is being developed at Clarion State College, Clarion, Pennsylvania. This model, a learning systems component of the Research Learning Center, has personal development, environmental improvement, and problem solving in the community as a major curriculum focus (McLain, 1971).

Advantages Cited

Glines (1971, p. 322) predicted that the year-round school is an exciting breakthrough that will descend upon education in the decade of the seventies. A vocal advocate of a more humane approach to learning, he maintains that the year-round school is a significant concept in developing humaneness in the school. Labeling the current school attendance practices as obsolete and the curriculum inflexible Glines alerts educators to the need for a self-paced year-round continuous progress

approach to learning.

Advocates of the year-round school believe that a year-round educational program offers the following advantages.

- (1) Facilitates continuous progress.
- (2) Eliminates fixed entry dates. A child may enter school on his birthday. He does not have to wait a full year to enter school because his birthday is a few days after the established entry date.
- (3) Provides maximum opportunities for the fusion of school and community resources. Community sponsored summer recreational programs could become an integral part of the year-round school curriculum.
- (4) Maximizes the use of school and community facilities.
- (5) Reduces delinquency by providing worthwhile activities during summer months.
- (6) Provides greater opportunity for teachers to grow professionally. Seminars and mini courses are traditionally restricted to summer sessions to accommodate the traditional 180-day school year. This arrangement would provide opportunities for teachers to implement new ideas immediately upon their return to the classroom.
- (7) Provides flexibility for teacher training institutions in scheduling intern teachers for teaching assignments.
- (8) Provides an improved educational program for the more mobile pupils.
- (9) Provides year-round educational research facilities for colleges and universities; and
- (10) Broadens the scope of experiences of pupils by making it possible for families to vacation during different seasons without interrupting the pupil's educational program.

Unique Aspects

Although a survey of the literature does reflect many advantages of the year-round school there are some problems which are unique to the year-round operation of an educational program.

Following is a summation of problems identified as unique to the year-round school and recommendations for remediation by design.

(1) With multiple-entry points as found in the year-round school the instructional program must be designed to accommodate varied levels of achievement. To avoid repetition of instruction, to provide a systematic means of accountability, and to facilitate the flexible scheduling of pupils the continuous progress concept should be recognized in the organization of content and the identification of learning strategies in the year-round curriculum design.

(2) In all case studies reviewed² the degree of success of the year-round program was commensurate with the public support of the year-round program. To facilitate grouping of students and to assure public support by offering an opportunity for pupils to attend the year-round school by choice it is recommended that the year-round school be designated as an alternative school.

(3) Valley View School officials are concerned with the number of different teachers which the pupil may encounter during the year. For example, due to scheduling, in the 45-15 plan a pupil can have as many as twenty-four different teachers during the school year. School officials feel that this inhibits the development of a positive interpersonal

²Case studies reviewed were year-round programs in Lake Oswego, Oregon, Chula Vista, California; Jefferson County, Louisville, Kentucky; Valley View, Chicago, Illinois; and Atlanta, Georgia.

relationship between teacher and pupil. It is recommended that a team teaching component be included in the curriculum design. In using the team approach it is assumed that at least part of the team would be able to remain with a pupil throughout the year.

(4) A fourth problem which must be recognized by districts considering implementing the year-round school concept is the legislation required to obtain funding for operation on a year-round basis.

Participants at the second national seminar on year-round education held in Harrisburg, Pennsylvania adopted a position paper recommending action by three parties: state government, local school districts and the U.S. Office of Education (USOE). Included in the position paper are the following recommendations.

1. Provide enabling legislation and/or policies to permit flexibility so that various patterns of year-round education could be explored.

2. Provide state aid on a prorated basis for extended school year programs.

3. Encourage experimental programs through financial incentives or grants.

4. Encourage experimentation in year-round education.

5. Examine all year-round education models which seem to be widely acceptable in terms of well defined, established criteria.

6. Foster the adoption of those plans or models which have demonstrated their value and acceptability so that nationwide patterns may emerge that are compatible with each other.

(5) According to PREP reports (1973) one of the concerns of the participators in the year-round program was for sufficient enrollment in

a school to reduce "chance imbalances" in enrollment. In order to insure feasibility in terms of the alternatives provided it is recommended that an enrollment of a school designed for year-round operation be at least six hundred students.

Status and Function of Curriculum Design

In reviewing the current status of curriculum design there is a notable concensus among authorities regarding both the function and the inadequacies of design in meeting the needs of society and the individual student. Goodlad (1966), Berman (1968), and Herrick (1965) define curriculum design as an organizational pattern or scheme which may facilitate or restrict the educational program. Herrick (1965, p. 324) identifies the function of curriculum design as, "a definer of elements of curriculum and their patterns of relationship." He considers design as having a key function in selecting and organizing learning experiences and in clarifying roles of teachers and learners in the total curriculum development process. Wilson (1971, p. 74) defines curriculum design as "a kind of environmental architecture in which the total creation reflects a tone, an expectancy, an appearance, an image." Wilson further cautions that, "Authentic environments can be created only when curriculum designers first admit that existing structure and processes can, in fact, betray teachers and students under certain conditions." Wilson (1971, p. 20) continues by making the observation that the most conventional and the most innovative programs have the same design components. It is the emphasis given to each component and the interaction between the components of design which make a significant difference.

Paul Klohr (1971, p. 455) in assessing the status of curriculum

development states,

In many cases innovations in curriculum were little more than a rearrangement or a deployment of the conventional elements of curriculum planning. Klohr concurs with Taba (1962) that the conceptual tools available to curriculum planners are quite inadequate for truly imaginative curricular alternatives.

Klohr (1971, p. 455) does predict that such projects as the Monroe City Simulation Project in which a conceptual framework is being developed to guide in the selection of more adequate simulation experiences, the work of John Herbert at the Ontario Institute, and the Center for the Study of Curriculum at Ohio State University suggest alternative curriculum designs which may provide a major thrust toward the improvement in design and may prove productive in meeting the needs of a changing society.

Needs Assessed

Taba (1962), Phenix (1964) and Tyler (1964) agree that the most universal need in the area of curriculum design is the recognition of the importance of philosophical, sociological, psychological, and theoretical dimensions in providing a conceptual framework for the development of curriculum. Such a framework provides a systematic procedure for establishing goals and objectives for each design component in terms of the assessed needs within each of the four dimensions.

Philosophical Dimensions

Inherent in any curriculum design are evidences of the philosophical position which one assumes in terms of three basic constructs: (1) the ontological, (2) the epistemological, and (3) the axiological (Morris, 1961). Simply stated ontology is concerned with that which is real or more specifically the nature and destiny of man; epistemology is

concerned with that which is true or the nature and source of knowledge; and axiology refers to that which is good or the nature of values and valuing (Butler, 1968, pp. 41-46).

Ontology. In considering the nature of man there are several philosophical positions which one may assume. One may agree with the realist's point of view in which it is believed that man is not free and man's actions may be determined by forces over which he has no control (Martin, 1969; Shermis, 1967).

A second position endorsed by the idealists is that man has the power of choice and is capable of genuine initiative. Idealists view man as being perfectible and having a spiritual destiny to fulfill in accordance with his own potentialities (Canfield and Donnell, 1964; Morris, 1961).

A third position which is pragmatic in nature is one in which man is viewed as being neither free nor determined. Man is viewed as being in a position to delay some responses long enough to reconstruct a total response, not completely automatic but not free, which does give a new direction to subsequent activity (Butler, 1968).

Epistemology. In the realm of epistemology the realists contend that there are fundamental truths which will always be valid regardless of the nature of the culture or the condition existing in society. The realist contends that an idea or proposition is true when it corresponds with those features of the world that it purports to describe. To the realist man does not recreate mentally the world as he perceives it. The world which man perceives, according to the realist, is the world as it is (Martin, 1969; Canfield and Donnell, 1964).

The idealists support Plato and Socrates in the belief that true knowledge is the product of reason. Hegel added still another dimension to knowledge when he proposed that knowledge was valid only "insofar as it formed a system." Idealists support the "coherence theory" of truth which is: "The more comprehensive the system of our knowledge and the more consistent the ideas it embraces, the more truth it may be said to possess" (Kneller, 1971, p. 17). Many modern idealists support Kant in the belief that the essence of knowing is the imposition of meaning and order on information gathered by the senses (Brubacher, 1969).

From the perspective of the pragmatist the human mind is active and exploratory as opposed to being passive and receptive. Thus knowledge is formed in part by the mind that knows it and knowledge is produced by a transaction between man and his environment. Pragmatists consider scientific investigation as the "road to truth" (Snyder and Peterson, 1970, p. 39).

Axiology. In the realm of axiology the realist is in agreement with the idealist in viewing values as permanent in nature. Classical realists agree with Aristotle that there is a universal moral law -- rational in nature -- which is applicable to all mankind (Smith, 1965).

Christian realists believe that reasoning may aid one in understanding moral law but that moral law was originally established by God and God's guidance enables man to practice moral law. Scientific realists reject the supernatural sanction of moral law and contend that Good is that which is compatible with man's environment while Evil estranges man from his environment (Martin, 1969).

The scientific realists see good and evil in terms of what scientific investigation has proved to be advantageous to man. Man overcomes evil

by improving the environment in which he lives.

For the idealists, values are absolute. Since values are a part of the universe they do not change. Values are viewed by the idealist as permanent in nature and do not change from generation to generation or society to society.

The pragmatists view values as relative. Values are not permanent but may change as conditions in society change (Smith, 1965).

The philosophical beliefs which one holds in regard to what is real, what is true, and what is good have implications for curriculum design. There is need to recognize the significance of ontology, epistemology, and axiology in developing curriculum design.

Sociological Dimensions

There is general agreement among educators today (Goodlad, 1963; Burns, 1970) that the goals of any educational system should be compatible with the values of the society which it serves. This commitment has significant implications for curriculum design. Decisions concerning the selection of content, the identification of learning strategies, and the sequencing of instruction are of little concern in a society where the mastery of a specific set of skills for earning a livelihood is deemed the only essential; or is it significant in a society where specific tasks or functions are assigned to each individual or where time and resources for schooling are extremely limited. Curriculum design poses a problem only in a complex society where the uniqueness of the individual is valued, where the individual has freedom to guide his own destiny, and where considerable opportunities for schooling are available (Phenix, 1968). Thus, two aspects of society which merit consideration in

curriculum design are the constancy of change and the prevalence of diversity (Shermis, 1965, pp. 105-106). Hanna (1968, p. 69) enumerates twelve problem categories attributable to change and diversity which she considers as having implication for curriculum design. These include:

- (1) the accelerated tempo of change
- (2) expansion of science, technology and automation
- (3) explosion of population
- (4) increased interdependence of individuals and peoples
- (5) the expanded role of government
- (6) intergroup friction and discord
- (7) worldwide rivalry of ideologies
- (8) intensified nationalism vs. world cooperation
- (9) cultural differences and conflict in values
- (10) intercultural relations
- (11) accelerated consumption of natural resources
- (12) waste of human resources.

In considering the school's responsiveness to the demands of the society which it serves Arnstine (1967, p. 352) cautions that when a curriculum is designed totally in response to the needs of a society the individual is controlled by society and education can well become a vehicle for indoctrination. Phenix (1950, p. 12) alerts curriculum specialists to the need for designing curriculum which "will prepare students for participation in the society that ought to be rather than conformity to the world as it is." Mannheim (1952, p. 233) proposes that knowledge is not merely a question of adapting men to a certain level of development, but of producing individuals capable of developing the existing form of society beyond itself to a further stage. Dewey (1961) proposed as a goal of education that education should not only transmit a way of life but also improve that way of life. From a sociological perspective of curriculum design there is a need to direct attention to the development of curriculum design with sufficient flexibility to accommodate the constancy of change and diversity which exists in society.

Psychological Dimensions

The psychological dimension is concerned with the human factor in curriculum design. Psychologists have defined three domains of human behavior as cognitive, affective, and psychomotor. The cognitive involves action taken on the basis of knowledge gained through past experiences, reason, evaluation, and imagination (Snyder and Peterson, 1970). The affective domain is concerned with attitudes, emotions, values, interests, and motives (Combs, 1968; Frazier, 1971). Studies concerning the development of psychomotor skills recognize the significance of the development of various motor skills as prerequisites to the acquisition of cognitive skills (Kephart, 1960; Frostig, 1964).

The development of skills in each of these areas has implications for curriculum design. In the area of cognitive behavior such factors as readiness, transfer and reinforcement of learning, motivation, and individual differences are all pertinent to the development of basic intellectual skills. Curriculum design may either facilitate or inhibit this development (McDonald, 1966).

In the affective domain the inclusion in the design of process skills such as perceiving, communicating, loving, knowing, decision making, patterning, creating, and valuing is significant (Berman, 1968).

In the psychomotor domain the development of some motor skills provides readiness for participation in an academic setting. Kephart (1960, pp. 20-31) maintains that the development of skills in the psychomotor area are prerequisite to the performance of many cognitive tasks. These skills include gross motor skills which involve large muscle activity, eye-hand coordination which includes physical and psychological skills such as laterality, directionality, the ability to stop, eye movements,

and dexterity, the temporal spatial translation which involves skills necessary for copying, and form perception which recognizes skills used in identifying various elements in a perceptual impression and organizing or integrating that into a figure or form. There is need for designing a learning environment which facilitates the development of the three domains of human behavior: the cognitive, the affective, and the psychomotor.

Theoretical Dimensions

Theoretical dimensions in curriculum design deal with strategies relevant to implementation and accountability. Included in the theoretical dimension is a systems approach to decision making, role clarification and the use of resources to improve the design. There is a need for the inclusion of elements of systems theory in the development and implementation of curriculum design.

Summary

Societal changes and the increasing cost of education have focused attention on the concept of a year-round educational program. Proponents of the year-round school contend that the extended school year in addition to providing an improved educational program offers maximum economic efficiency in terms of use of facilities and staff.

The concept of year-round education if viewed only from the perspective of expanding the school calendar is insignificant. However, it is the consensus of year-round school supporters that combined with curriculum revision and with the establishment of new educational priorities the year-round school may well provide educational opportunities which

are more relevant to today's rapid changes.

For the curriculum designed for the year-round school the investigator has used philosophical, sociological, psychological and theoretical dimensions to define objectives in terms of needs assessed to establish a conceptual framework for the design. Chapter II describes the implications of these dimensions for each design component. Assumptions relevant to each component are made, supportive data is provided for the assumptions and organization strategies are defined.

The investigator contends that the development of an organizational scheme which recognizes the interaction of design components, provides accessibility to both human and material resources and offers sufficient flexibility in terms of learning alternatives are essential requisites to an improved educational program. It is believed that the year-round school offers a promising setting for the nurture of these requisites.

Definitions

Conceptual framework - a way of organizing thinking about all matters that are important to curriculum development.

Curriculum - all those learnings intended for a student or group of students (Goodlad, 1963).

Curriculum design - organization of content and learning experiences; a pattern of organization (Goodlad, 1963).

Teaching strategy - pattern and a sequence of teacher behaviors designed to accommodate all important variables, consciously and systematically.

Organizing centers - focal points for learning through which the school's objectives are to be attained (Goodlad, 1963).

Continuity - the reiteration of desired behavior through learning

experiences concerned with reinforcement and broadening in scope and depth of learning experiences (Goodlad, 1963).

Sequence - related to the order or gradation of learning; each learning experience builds on and broadens previously learned concepts (Goodlad, 1963).

Integration of learning - concerned with relating what the student is learning in one field to content and learning experiences in another field.

Ontology - a philosophical construct concerning nature of reality and the destiny of man.

Epistemology - a philosophical construct concerning the nature and source of knowledge or pertaining to that which is true.

Axiology - a philosophical construct concerning the nature of values or pertaining to that which is considered good.

Basic skills - skills deemed essential for effective functioning (Gagne, 1970).

Process skills - skills which have an element of ongoingness about them. Berman (1968) identifies eight process skills as perceiving, communicating, loving, decision making, knowing, patterning, creating, and valuing. Such skills may be applied to a wide scope of situations.

Vertical organization - aspects involved in learning as the pupil moves forward in school from grade to grade or level to level.

Horizontal organization - relates to alternatives provided in terms of learning experiences on a frequent - perhaps even on a daily basis.

Continuous progress - a philosophy in which the prime commitment is to the recognition of individual differences; involves a strategy for the fluid movement of students and a sequential arrangement of content to be

learned.

Differentiated staffing - a staffing pattern in which there is a differentiation of tasks and responsibilities for teachers requiring different levels of competency and having different salary ranges.

CPM (Critical Path Method) - the path which requires the longest time between the starting date and the final termination.

Dummy activities - do not involve work or consume time or resources in the system under consideration. Indicate a necessary procedure or dependency upon events.

Event - boundary point which indicates the beginning or ending of an activity.

Interface event - when one sequence of activities ends or interests another.

Milestone events - key program or project accomplishments in the network.

PERT - Program Evaluation and Review Technique

PERT/CPM Process - pictorial plan, schedule, or budget designed to guide planners in initiating and controlling initial or one of a kind complex system operations or networks (Kaimann, pp. 43-57).

Slack - time existing on every path in the network except the critical path which comprises the difference between the predicted activity time and the latest allowable time needed for completion.

System - sets of elements or parts which possess some degree of independence or identity but, at the same time, are an integral part of a larger ensemble or whole.

CHAPTER II

DIMENSIONS OF DESIGN

There are certain fundamental beliefs which provide the underpinnings for the organization and implementation of curriculum design. Basic assumptions concerning the nature of man, the nature of learning and knowledge, and the nature of values within a society fall within the philosophical dimension of design. Other dimensions include: the psychological which is concerned with the human factor; the sociological concerned with societal changes; and the theoretical dimension which relates to a systematic approach to decision making, role clarification, and the change process.

The following is a review of philosophical, psychological and sociological beliefs and theoretical strategies which provide support for the assumptions made in developing the year-round school curriculum design. Supported by early proponents of pragmatism such as Bacon and Comte and more recently Pierce, James, and Dewey (Butler, 1968), the designer assumes the philosophical position of the pragmatist in developing a curriculum design for the year-round school.

Philosophical Dimensions

The philosophical dimension is concerned with three basic constructs: the ontological or the nature of man; the axiological or the nature of valuing and values; and the epistemological or the nature of

knowledge (Snyder and Peterson, 1970).

Ontology

From the perspective of the pragmatist reality is defined as the reaction of the human being to his environment; reality is the sum total of what we experience. Man and his environment are responsible for what is real (Kneller, 1971, p. 209).

Change to the pragmatist is the essence of reality and unlike the realist and the idealist pragmatists believe that human nature can be changed. The child is regarded by the pragmatist as an active organism who is continually interpreting and reconstructing his experiences (Morris, 1961).

Axiology

According to Kneller (1971, p. 220) axiology is concerned with three basic questions: (1) Are values subjective or objective; personal or impersonal? (2) Are values changing or constant? (3) Are there hierarchies of value?

The pragmatist considers values as being relative. As cultures change, values change; as societies change, values change (Bayles, 1966). The pragmatist believes in testing problems as one would test ideas. Human problems are considered by the pragmatist in a scientific and objective manner and values are chosen which would most effectively solve them. Values in the view of the pragmatist should not be imposed by a higher authority but determined through open discussion based on objective evidence (Shermis, 1967).

Epistemology

Pragmatism, like realism, is an epistemological philosophy (Martin, 1966). For the pragmatist compilation of facts does not constitute knowledge. The pragmatist uses sense perception as his frame of reference and is unwilling to accept knowledge verified in the past at face value. Knowledge to the pragmatist is produced by a "transaction" between man and his environment.

William James contended that an idea is true if it has favorable consequence for the person who holds it. Pierce and Dewey maintain that only after an idea has satisfactory results is it true and these results should be observed objectively and tested scientifically if possible. For the pragmatist the truth of an idea depends on the consequences that are observed objectively when the idea is put into operation.

From the position of the pragmatist the curriculum should be flexible and open to revisions to accommodate the notion that "change is the essence of reality." Since man cannot be separated from the world in which he lives, school cannot be separated from life. Education in the view of the pragmatist is life -- not preparation for life (Dewey, 1961). Learning experiences for the pragmatist should deal with real life situations which are relevant to everyday living.

Kneller (1971, p. 229) quotes William James as he describes the position of the pragmatist in his belief toward the nature of man, the nature of values, and the nature of knowledge as follows.

She (pragmatism) has in fact no prejudices whatever, no obstructive dogmas, no rigid canons of what shall count as proof. She is completely genial. She will entertain any hypothesis, she will consider any evidence . . . Her only test of probable truth is what works best . . . what fits every part of life best, and what combines with the collectivity of experience's demands, nothing being omitted . . . You see how democratic

she is. Her manners are as various and flexible, her resources as rich and endless and her conclusions as friendly as those of mother nature.

Psychological Dimensions

From a psychological perspective the designer has assumed an eclectic position supported by assumptions emerging from the viewpoint of the humanists and two psychological systems: genetic psychology which provides the theoretical support for the developmentalists and behaviorism supporting the learning strategies in which a more structure approach is needed.

In essence the designer has derived assumptions from a composite of certain aspects of both behaviorism and developmentalism. Following is a brief review of each psychological theory as it relates to the learner.

The Learner

Behaviorism had its beginnings more than fifty years ago with John B. Watson. A controversial modern proponent of behaviorism, B. F. Skinner (1972, p. 65) defines behaviorism as "a philosophy of a science of behavior." He expands this definition by alluding to the fact that instead of attributing behavior to states of minds or feelings we attribute it to environmental history. Operant behavior emerging from Thorndike's study of the law of effect is described by Skinner (1972, p. 66) as behavior which operates upon the environment in producing effects. Unlike the stimulus-response theory in which something occurs (a stimulus) to entice the organism to act (the response) - in operant conditioning something very important happens after the organism acts. In operant analysis, a current psychological system used by post

Skinnerians, consideration is given to three elements: the setting, the behavior, and the consequences. A more current basic principle of behaviorism is that behavior is affected by its consequences.

The behaviorists' belief concerning the nature of man has its origin in the philosophical outlook of realism or positivism which was supported by early stimulus response associationism. Realists assume the basic principle of the universe is cause and effect; every event is caused by that which has gone before. By nature man is a neutral, passive organism shaped by his environment. This belief which embraces the scientific conception of human behavior entails the acceptance of determinism. Supporters of determinism contend that behavior is caused and environment controls the individual (Bigge, 1967). B. F. Skinner (1971) the leader in the behavior modification movement, maintains that through evolution the environment selects the behaviors that survive in one's genes. Environmental conditioning shapes each person and in order to control behavior one must control the environment; thus a learning environment which features any degree of control whether it be in the selection of learning materials or the identification of specific learning strategies must recognize aspects of behaviorism in the design.

Humanism is described as a movement more than a theory or system. In contrast to the behaviorists who contend that man is a neutral, passive organism shaped by his environment, humanists in agreement with the developmentalists, adhere to a philosophy of natural unfoldment. Supported by the psychological viewpoint of proponents of idealism, humanists believe that man is naturally good and at the same time active in relation to his environment. Earlier proponents of this belief were Jean Rousseau and Friedrich Froebel.

More recent supporters of the humanistic viewpoint include Allport (1954), Kelley (1952) and Combs (1962). These authorities believe that man is in the process of becoming; in experiencing man reacts, evaluates, and projects. Such responses establish him as a rational being.

Coleman (1960, p. 11) although viewed by many as a supporter of the humanistic viewpoint assumes a more eclectic stance. He supports humanism in his belief that man is creative and purposeful while at the same time acknowledging that much of human behavior is determined by conditioning and also that opinions, values and ways of behaving are not only influenced by experiences but also by the culture in which one lives. Coleman (1960, p. 28) continues with this premise by attributing aggressiveness and cruelty in man to distorted pathological conditions, repeated failure, or a repressive culture.

Havighurst and Piaget are contemporary subscribers to the humanistic movement. Proponents of genetic psychology frequently referred to as developmentalists Havighurst and Piaget view growth, development, adjustment, and learning as synonymous.

The Nature of Learning

Early behaviorists define learning as non-purposive habit formation in which habits are formed through conditioning. For the behaviorist, experience has little significance and when he does use the term it is defined mechanistically. Experience could mean no more than a conditioning process by which one acquires a new response.

Other components of learning such as perception, sensation, interaction and motivation are also defined in mechanistic terms. Perception is a two-step process (sensing and deriving meaning) which focuses on

particular objects of the environment only to the extent that previous conditioning directs. Sensation to the learner may prove to be indiscriminate in that he frequently tends to take in all the aspects of the physical world to which his sense organs are sensitive. The behaviorist describes interaction as a chain of cause and effects. Stimuli are causes; response are effects. Motivation is the urge to act which results from a stimulus. Man -- like a machine -- has no thought-out goal (Bigge, 1964).

From the perspective of the developmentalist supported by principles of genetic psychology, learning is an internal process involving growth and development of the individual's personality. The underlying assumption is that the learning process is the development of that which is already there.

Venable (1967, p. 78) quoting Havighurst explains learning in terms of "developmental tasks in which there is a sequence of essential learning experiences resulting from needs of children at varying stages of development." Each developmental task is presented to a given age level. Havighurst contends that learning is not a matter of stockpiling factual knowledge but a process of growth in which each age level presents the child with challenges, some of which are derived internally while others are brought about by living in a certain social scheme.

Venable (1967, p. 78) continues to support Havighurst's basic need premise when he quotes anthropologist Montague as follows: "From simple, direct experiences growing out of basic needs, the individual evolves toward more complex, subtle, and human-like experiences which make him a fit member of human society."

In concurrence with viewpoints of other developmentalists Piaget

believes in the philosophy of natural unfoldment which he describes in four stages of cognitive development (Wadsworth, 1971, pp. 114-115): the sensori-motor stage which includes the period from birth to two years; the preoperational stage from two to seven years; the concrete operational stage from seven to eleven years; and the formal operational stage from eleven to fifteen years. Although Piaget describes stages of development within this period he stresses that age norms are only approximate. Each stage is sufficiently open ended to allow for different levels of ability, knowledge, and skills as function of the rote and quality of the learning experience they encounter.

Cognitive Stages of Development

The first two years of life are described as the sensori-motor period. During this period development proceeds from reflex activity to representation and sensori-motor solutions to problems.

The infant interacts with his environment by using his reflexes which are inherent in his biological endowment. Normal development of the infant is characterized by a maze of undifferentiated, unspecified, and unreflective experiences. Sigel states (1964, p. 215), "to accomplish this the infant establishes a differentiation of himself from objects; he localizes himself in space; he establishes a beginning awareness of cause and effect, of time and space."

During the preoperational period (2-7 years) development proceeds from sensori-motor representation to prelogical thought and solutions to problems. This period is characterized by an increasing importance of language. In acquiring concepts the child must use a complex set of processes. He must become increasingly more sensitive to objects in his

concrete world. The child must become aware not only of the existence of concrete objects but also be cognizant of the many characteristics and attributes of such objects. "What is it like?" and "What does it do?" frequent questions from this age group, verify the child's natural propensity to organize diverse items into classes or categories. During this period language facilitates as well as directs the process of conceptualization.

The operational stage occurs approximately between the ages of seven and eleven. During this period language becomes increasingly more significant. Development proceeds from prelogical thought to logical solutions to concrete problems.

The formal operation stage occurring between eleven and fifteen years is characterized by the development of the ability to think scientifically and find logical solutions to problems. With the maturation of cognitive structures the child is able to solve complex verbal problems (Piaget, 1967).

Piaget devotes little attention to the emotional aspect of development. However, he does admit that emotions influence thought and that no act of intelligence is complete without emotions.

Curriculum design considered from the behaviorist's perspective is more structured with emphasis on periodic assessment and prescriptive teaching. The psychology which endorses behaviorism is amenable to instructional areas where programmed learning materials are effective. From the developmental viewpoint the learning environment should be one in which the child has freedom to explore, choose, and investigate with limited guidance from the teacher. The year-round school curriculum design includes aspects of both psychological systems.

Sociological Dimensions

It is the consensus of many (Hanna, 1962; Berman, 1968; Toffler, 1972) that the rapidity at which change is occurring in society is one of the prevalent problems which education faces today. These authors contend that the task of educating today's youth to cope with an unknown future with intelligence and confidence requires a new focus in curriculum which will allow the learner to discover new meanings and solutions to problems.

If a system of education is to function properly in a democratic society, its underlying philosophy must be in tune with the basic tenets of that society (Dewey, 1961). Current day social conditions reflect constancy of change and a prevalence of diversity as characteristics which have implications for curriculum. There is a need for a design which reflects flexibility to accommodate that change and features sufficient alternatives to recognize diversity.

Theoretical Dimensions

In a rapidly moving society where there is an increasing need for emphasis on interpersonal skills, the recognition of a systematic procedure for the improvement of communication is significant (Hershey and Blanchard, 1972). Shared decision making is becoming increasingly more evident as teachers become more vocal and the public becomes more aware. A systems approach to decision making and role clarification has implications for the implementation of curriculum design.

Summary

There is an agreement among curriculum theorists [Taba, 1962; Phenix, 1964; Tyler, 1964], that the most universal need in the area of curriculum design is the recognition of the importance of philosophical, sociological, psychological, and theoretical dimensions in providing a conceptual framework for the development of curriculum. Such a framework provides a systematic procedure for establishing goals and objectives for each design component. Chapter II provides a review of philosophical, psychological and sociological beliefs and theoretical strategies which provide support for the assumptions made concerning each component of the year-round school curriculum design.

In developing a curriculum design for the year-round school the designer assumed the philosophical position of the pragmatist in which reality, viewed as the sum total of what we experience, is defined as the reaction of the human being to his environment. The designer in concurrence with the pragmatist recognizes change as the essence of reality and man and his environment as being responsible for what is real. Viewing the child as an active organism the designer contends that the learning environment for the year-round school should be designed to provide opportunity for experimentation and problem solving.

In considering the nature of values (axiology) and the nature of knowledge (epistemology) the designer in concurrence with the pragmatist philosophy considers values as being relative; as cultures change, values change; as societies change, values change. From an epistemological perspective, the designer in accordance with the pragmatist views the truth of an idea as dependent upon the consequences that are observed objectively when the idea is operative. Therefore, the curriculum designed

for the year-round school is flexible and open to revisions to accommodate the notion that change is the essence of reality.

From a psychological perspective the designer has assumed an eclectic position supported by beliefs emerging from two psychological systems: genetic psychology which provides the theoretical support for the developmentalist and behaviorism supporting the learning strategies in which a more structural approach is needed. In concurrence with Coleman (1966) the designer contends that although man is creative and purposeful, at the same time much of human behavior is determined by conditioning; opinions, values, and ways of behaving are not only influenced by experiences but by the culture in which one lives. The curriculum design for the year-round school reflects aspects of both psychological systems. In the vertical grouping of students the designer has used the developmental growth stages as advocated by Piaget. In the area of humanities and the process skills centers where pupils have opportunities to explore and make choices the philosophy of the developmentalist is also evident. In the basic skills area for ages 8-11 where a more careful diagnosis is made and a more structured approach is needed, aspects of behaviorism are easily identified.

Within the theoretical dimension, the designer recognizes the need of a system's approach to implementation. This need is accommodated in the design by using the Critical Path Method (CPM) to provide a systematic method of accountability in the implementation of the design.

CHAPTER III

SELECTION AND ORGANIZATION OF CONTENT AND LEARNING EXPERIENCES

The selection and organization of content and learning experiences is a design problem which is becoming progressively more serious among educators. Curriculum theorists (Phenix, 1968; Tyler, 1957) have advocated that content should be selected and organized in terms of purposes and that these purposes should be formulated from an analysis of data derived from the needs of the individual, the needs of society, and the nature of knowledge. However, examination of content organizational patterns currently in use indicates that change in the selection and organization of content and learning experiences is emerging slowly. Little attention is given by practitioners to the evaluation of present organizational schemes and the exploration of new emphases. Paul Klohr (1971, p. 455) laments the fact that larger learnings proposed by Frazier and the new priorities explored by Berman have not been in the picture.

A Historical Perspective

Historically, additions have been made to the content area but limited consideration has been given to the deletion of irrelevant content. Burns (1970, p. 4) supports this contention when he states, "Virtually all the subjects taught now in the elementary and secondary schools were taught in 1920." Taba (1962, p. 264) voices the same

concern when she states, "When more and more diverse content is pressed into the same amount of time, it becomes impossible to preserve unity, depth, or sequence in learning."

A review of past practices in organizing content reflects a commitment by most educators to organizing content by separate subject. Limited attempts were made in the early 1900's to break down subject matter barriers. The organization of instructional units cutting across subject boundaries and the writings of Thomas Hopkins on curriculum integration had some impact. However, such writers as Kandel (1935, p. 157) protested that the integration of subject matter emphasized methods and external mechanics rather than content.

With Sputnik in 1957 came a renewed emphasis on separate subjects. Government intervention played a significant role in the organization of curriculum content. Federal support for projects such as the School Mathematics Study Group and the National Science Foundation mandated that each subject maintain its identity as a separate discipline.

In assessing the positive aspects of such projects it may well be that they will provide the impetus for a new thrust in determining learning activities and organization of content and learning experiences. Miel (1964) proposes that deeper understanding of the key concepts of separate disciplines and the nature of separate pieces of the total curriculum may lay the foundation for curriculum content synthesis.

Problems in Content Selection

Taba (1962, pp. 263-264) identifies the selection of content as one of the crucial decisions in curriculum development and points out the need for a rational method of selecting content. She verifies her

concern by enumerating four major problems which curriculum specialists should recognize in the selection of content.

(1) The ferment in education and the confusion among educators about criteria for the selection and organization of content is rapidly increasing.

(2) The knowledge explosion necessitates either adding more subjects or assigning new priorities in the current offerings to make room for new knowledge and new concepts.

(3) A new definition of literacy has emerged which requires an understanding of a bewildering variety of living conditions and the sobering inequality of these conditions.

(4) The extension of the objectives of education has called for new areas of learning which were not part of the classical curriculum.

An improved educational technology presumably permits an expansion of what can be learned in a given time. Newly tapped realms of knowledge not only broaden the scope of materials and resources from which content may be selected but also warrants consideration of another component -- the productive use of the student's time. Berman (1968, p. 1) cautions that children may become overloaded with concepts and recommends that new priorities be established in conceptualizing what and how the school will teach.

Criteria for the Selection of Content

Fraser (1962, p. 13) admonishes curriculum specialists that "content that was pertinent and useful for the learning of an earlier generation may no longer be the most useful for the learning of children whose lives will extend into the twenty-first century." Tradition should not be considered an appropriate criteria for the selection of content. Fraser continues further by recommending criteria to be followed in improving the selection and placement of content at the elementary level.

(1) Content is the means to selected goals and does not represent a goal in itself.

(2) Content should be placed so that children can gain a

sequential development, from one school year to the next, of the generalizations, values, and skills that are the goals of education.

(3) The existing program should be examined to determine whether it is failing to challenge pupils and, if so, what can be done through better selection and placement of content to raise children's standards of performance and broaden their learning horizons.

(4) The selection and placement of content must help youngsters learn in such a manner that they establish relationships and grow toward an increasingly mature organization of their knowledge.

(5) Curriculum research must be adequately financed, broad in scope, and draw on the cooperative efforts of public school personnel, academic scholars, scholars in the appropriate fields of professional education, and informed lay persons.

Continuity, sequence, and integration are the three criteria considered by Tyler (1957, p. 255) as essential for a well organized curriculum. He further describes continuity as the reiteration of desired behavior through learning experiences.

Goodlad (1963, pp. 25-50) describes the continuity aspect of the organization of content and learning experiences as being concerned with the reinforcement and broadening in scope and depth of learning experiences. Thus, continuity is concerned with timing, scope, and depth of content and should be considered in sustaining and reinforcing learnings as they emerge in the curriculum.

Sequence is related to the order or gradation of learning; each learning experience builds on and broadens previously learned concepts (Stratemeyer, Forkner, McKim, and Passon, 1947, pp. 86-105).

Integration of learning is concerned with relating what the student is learning in one field to content and learning experiences in another field. Belleck (1965, p. 320) supports the significance of the integration potential of content when he alludes to the limited time and capacity of the school. Belleck raises the question, "What shall the

schools teach to secure results that can be generalized beyond the immediate situation in which the learning takes place?" Berman (1968, pp. 9-10) supports this concern when she describes man as a "process oriented being" and calls attention to his need for the development of process skills which may be used in a variety of contexts.

Continuity, sequence and integration are significant criteria for consideration in the selection and organization of content and learning experiences. These criteria are used as organizing elements in the year-round curriculum design.

Assumptions Concerning Content and Learning Experiences

Following are assumptions made by the designer related to the selection and organization of content and learning experiences. Supportive data is provided and implications for the year-round design are described.

Assumption 1: The timing, continuity and integration of learning experiences should be determined physiologically and psychologically.

When considering the physiological and psychological determinants in the selection of content and learning experiences one is concerned with the developmental growth of the learner in terms of his physical, intellectual and emotional growth (Barth and Rathbone, 1969).

Phenix (1958, pp. 69-72) in concurrence with many developmental theorists (Enhelder and Piaget, 1968; Havighurst, 1953; Ames, 1965) considers physiological and psychological growth as especially significant in making curriculum decisions concerning timing or when concepts should

be introduced.

Several proponents of developmental theories have defined growth stages in terms of biological, intellectual, and social development. Piaget (1967) has delineated a fairly exact sequence of development from intuitive thinking, to being able to reason concretely, to the utilization of abstractions. Ginsburg and Opper (1969, p. 231) in relating Piaget's theory to educational practices cautions that children should not be forced to learn materials for which they are not ready. Enhelder and Piaget contend that a child cannot learn to perform any activity for which the requisite physical organs and cognitive structures have not matured. Havighurst (1953) defined a hiarchical system of developmental tasks. He defined developmental task as "a problem which arises at or about a certain period in the life of the individual, successful achievement of which leads to his well being, positive adjustment, and success with later tasks." Failure to perform these tasks (problems), however, leads to unhappiness in the individual, disapproval by society, and difficulty with later tasks. Such tasks are believed to arise from three different sources: physical maturation, cultural pressures, and personal values and aspirations.

Ilg and Ames (1965) contend that the child's developmental level determines readiness for academic tasks. They have constructed a developmental examination to be used in assessing the developmental level of children ages 5-10.

Frostig (1964) maintains that roughly 20-25 percent of beginning first grade children are insufficiently mature in perceptual development to make successful academic progress without "undue effort." Frostig goes even further by defining the optimal age span for the development of

visual perception as ages three and one half to seven and one half.

Content and learning experiences must be organized in such a way that the timing of learning experiences does not conflict with developmental growth patterns.

The recognition of developmental growth stages is evident in the vertical organizational scheme for content and learning experience in the year-round design.

Assumption 2: The timing, continuity and integration of learning experiences should be determined logically and sociologically.

Logical and sociological determinants relate to the function of the learning experience in terms of learner needs and the relevance of the learning experience to societal needs. Fraser (1962, p. 15) cautions that the ability of a pupil to learn a particular content at a given age is not the only criterion for the selection of content. Fraser continues by posing other questions which should be asked such as: (1) How will the child's total school program be affected? (2) Will other content potentially more significant at the child's present stage of learning and growth have to be minimized? (3) Are there other content areas not receiving adequate attention that deserve a higher priority? (4) Is the concept or subject one which the child can learn more easily at a later stage of development? and (5) Does the concept of learning experience fit into the developmental pattern of the child?

Content and learning experiences should be relevant to the society setting in which the learner functions and be logical in terms of the learner's needs. The year-round design accommodates both social relevance and function in the horizontal organizational scheme.

Assumption 3: Process skills should be recognized as being as significant as basic intellectual skills in selecting and organizing content and learning experiences.

A major controversy related to selection and organization of content over the past decade has been concerned with the relative importance of content and process.

Basic skills or intellectual skills are defined as those skills deemed essential for effective functioning while process skills are described by Berman (1968) as those skills which have an element of ongoingness about them. Parker and Rubin (1967, p. 1) define process as a system for learning or a cluster of diverse procedures which surround the acquisition and utilization of knowledge. Berman (p. 10) identifies eight process skills which include perceiving, communicating, loving, decision making, knowing, patterning, creating, and valuing. Process skills may be applied to a wide scope of situations.

Burns (1970) and Berman (1968) deplore the deficiency in emphasis on process skills. On the other hand Gagne (1970) cautions that:

School learning has two perspectives, and both are necessary for effective human development. One cannot confine instruction to the learning of basic intellectual skills, since these amount to little unless they are used in a great variety of problem solving situations requiring imagination and inventiveness.

Gagne further states that "One cannot adequately design opportunities for creative thought for students who do not possess the basic intellectual skills necessary for effective functioning.

Goodlad (1963) and Miel (1963) propose that both the problem-centered and the discipline-centered approach be used in curriculum design. Other curriculum specialists (Frazier, 1968; Frost and Rowland,

1969) concur with these authors in the belief that in a well designed curriculum attention must be directed to the two perspectives: a systematic development of basic intellectual skills and opportunities must be provided for creativity and independent thinking which emphasize values and quality of life commitments.

Process skills emphasized during the orientation period include perceiving which is considered the stimulus for all of man's behavior, creating which is dependent upon readiness of perception, and communicating which is considered important at all levels.

Process skills emphasized during the exploratory/reinforcement phase include valuing, caring, and knowing. As children move from emotional dependence to growing independence and eventually into fruitful interdependence Berman (1968) contends that helping children to develop skill in establishing priorities is a significant objective. A priority becomes a value only after a given priority has repeatedly been established by a person. Caring and knowing are process skills which are closely related to valuing (Harmin, Kirschenbauner and Simon, 1973).

Process skills emphasized during the quest phase are decision making, knowing, and valuing. Due to the growing independence of most children in this age group (7-9) the designer has designated these skills for emphasis during this phase. The year-round design recognizes the significance of the development of process skills by including specific process skills for emphasis during each learning phase.

Assumption 4: Learning alternatives are a significant aspect
of the curriculum design.

Sealey (1966) in concurrence with Webber in reporting observations made in the British Primary School, contends that when learning

alternatives are provided for children they accept the responsibility for their own learning experiences. The year-round design features learning centers, using the integrated day concept during the orientation period and includes personal development and environmental improvement as an instructional area in the exploratory/reinforcement and quest phases. Also, pupils enrolled in the quest phase may have the option of spending more time in one instructional area than another.

The organizational scheme designed for the year-round curriculum is two directional. In this scheme, a modification of a scheme proposed by Goodlad (1967), consideration is given to providing alternatives as the child moves both vertically and horizontally. The vertical organization is concerned with those aspects involved in learning as the child moves forward in school; the horizontal organizational scheme relates to the alternatives provided in terms of learning experiences on a more frequent -- perhaps even on a daily basis.

Vertical Organization of Content and Learning Experiences

Vertically, as the child moves forward in the year-round design, schooling is divided into three sequential phases: orientation, exploratory/reinforcement, and quest. In determining objectives for each vertical phase attention is given to the three aspects of timing defined by Phenix (1957, p. 15) as developmental, logical, and personal-social. Content emphases and priority as described by Berman (1968) are also considered. Developmental growth stages are used as a major determinant of timing and emphases of content and learning experiences. Although unique and distinctive functions are prescribed for each phase, the

organizational scheme provides for an overlapping and fusion of phases. Figure 1 provides a schematic description for the vertical organization of content and learning experiences.

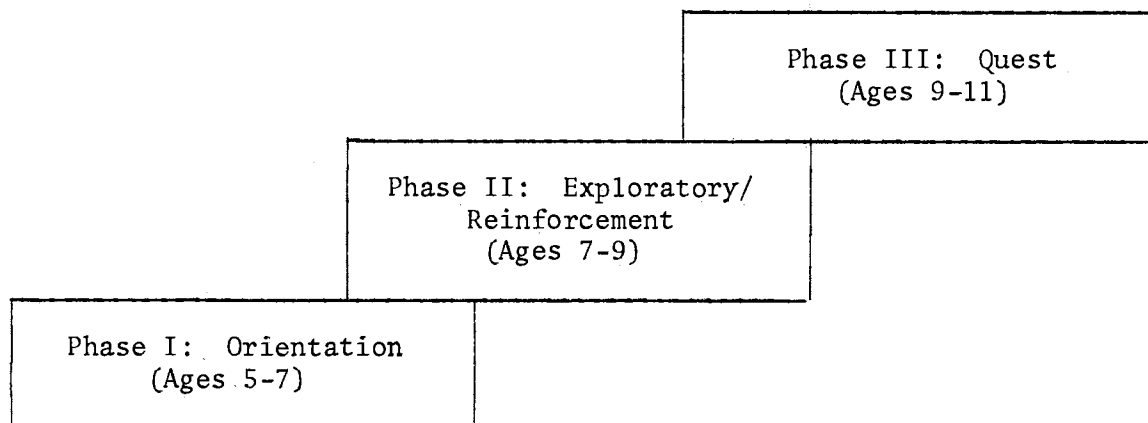


Figure 1. Vertical Organization

Orientation Phase

The prime objectives of the orientation phase are to develop in the child a positive concept toward self and to create a positive attitude toward learning. Using the integrated day concept which had its beginnings in the British Infant School Movement (Webber, 1971), content as such is not specifically defined for the orientation phase. Content is determined by the interests and experiences of the child.

Unlike a conventional classroom setting in which all six year olds are introduced to formal reading and mathematics these content areas are a part of many learning experiences. Capitalizing on the young child's propensity for exploration and his natural curiosity, the

language-experience approach is used in the teaching of the language arts and the laboratory approach in the teaching of mathematics and science. The expressive arts such as music, art and drama, are integrated with other content areas as a significant part of the curriculum.

Process skills emphasized during the orientation period include perceiving which is the stimulus for all of man's behavior and provides a basis for the development of other process skills, creating which is dependent upon readiness of perception, and communicating which is the sharing of meaning -- an important process skill at all levels.

The importance of the development of physical and motor skills as a prerequisite to learning many cognitive skills is given special recognition during the orientation phase. Included as a content area in the orientation period is a learning center described on page 48 designed for the development of physical and motor skills.

In contrast to a conventional primary school setting in which there are clearly defined subject matter areas the emphasis and priorities established for the orientation period are on creating a learning environment which facilitates what Rogers (1969, p. 5) describes as experiential learning. There is a climate of freedom in which the child is an active participant in choosing his own direction and discovering his own learning resources.

Figure 2 on the following page provides a schematic description of the content areas which are recognized in the orientation phase. Circles denote interest centers established for each content area defined for the orientation phase. The process skills center provides an opportunity to integrate and optimize the cumulative results of the learning experiences which pupils have in each of the six designated interest centers.

Process skills emphasized during the orientation phase include perceiving, creating, and communicating.

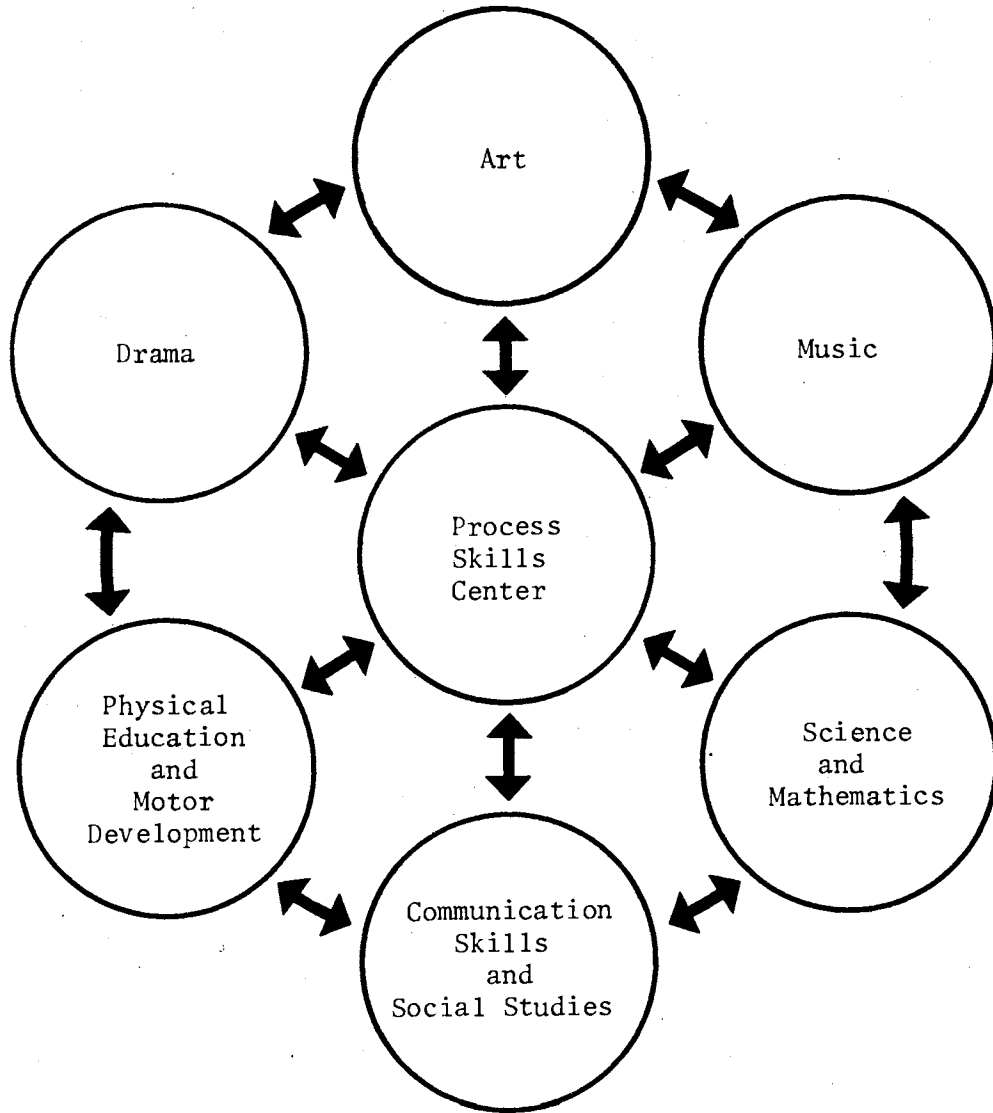


Figure 2. Content Areas: Orientation Phase

Exploratory/Reinforcement Phase

Content for the exploratory/reinforcement phase is unique in that more structure is provided in terms of content organization. Although broad in nature with flexibility in terms of time allocation and learning activities within a given area, four content areas are defined for the exploratory/reinforcement phase. These areas include: communication skills which include the traditional language arts subjects; mathematics and science; the area of humanities comprised of social studies, music, art, drama, and literature; and a fourth content area which focuses on personal development and environmental improvement. Physical education is included in the area of humanities. The process skills emphasized during the exploratory/reinforcement phase include valuing, caring and knowing.

During the exploratory/reinforcement phase special attention is directed to the development of specific needs in the cognitive skills area. Individual learning styles of pupils are explored and emphasis is placed on precise diagnosis of the needs of pupils.

Quest Phase

During the quest phase content emphases and selection are determined by the pupil under the guidance of the teacher and with the consent of the parent. The four content areas defined in the exploratory/reinforcement phase are also offered in the quest phase. Process skills receiving priority during the quest phase are decision making, knowing, and valuing. Content emphases are determined by the needs and interests of the pupil.

Figures 2 and 3 on pages 45 and 47 provide a graphic description of

the vertical organization of content and learning experiences selected for each phase of the year-round curriculum design.

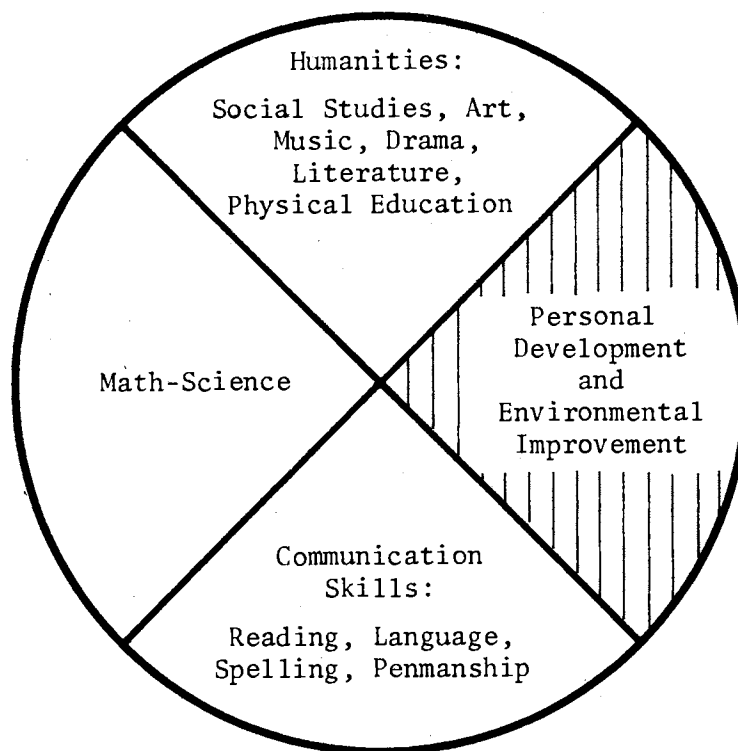


Figure 3. Content Areas: Exploratory/ Reinforcement Quest Phase

The school day is divided into four time blocks to accommodate the four instructional areas. Pupils enrolled in the quest phase may elect to spend more time in one instructional area than another.

Content areas for the exploratory/reinforcement and quest phases are depicted graphically on this page in Figure 3.

Four content areas are defined for the exploratory/reinforcement and quest phases: communication skills, humanities, mathematics-science, and

personal development and environmental improvement.

At the beginning of the exploratory/reinforcement phase the pupil is placed on a continuum of skills described in Chapter III in reading, mathematics, and music. Process skills receiving major focus during the exploratory/reinforcement phase are valuing, caring and patterning. During the quest phase process skills receiving priority include decision making, knowing, and valuing.

Horizontal Organization of Content and Learning Experiences

For the horizontal organization of content and learning experiences, the designer has established as organizing elements the development of three types of behavior: cognitive, psychomotor, and affective. Although it is evident that any human behavior involves each of these behaviors, Goodlad (1968, p. 315) considers this taxonomy a useful tool for determining curriculum content and evaluating teaching results. Goodlad further contends that:

Any comprehensive patterns of curriculum organization must identify the concepts (cognitive realm), skills (psycho-motor realm), and values or attitudes (affective realm) to be used as guides in the selection of specific learnings.

Horizontally the content for the year-round school curriculum is organized in terms of three broad areas with learning centers to accommodate each area: a physical and motor skills development center with primary focus on developing motor skills considered prerequisite to learning basic academic skills; a cognitive skills area emphasizing basic intellectual skills deemed essential for effective functioning; and the affective skills center which provides opportunity for a variety of problem-solving situations with major focus on the utilization of process

skills. The organizing elements used in the horizontal organization are shown in Figure 4. The intersection of the three circles representing each content area (labeled D) denotes the integrated learning dimension as prescribed by Tyler (1957).

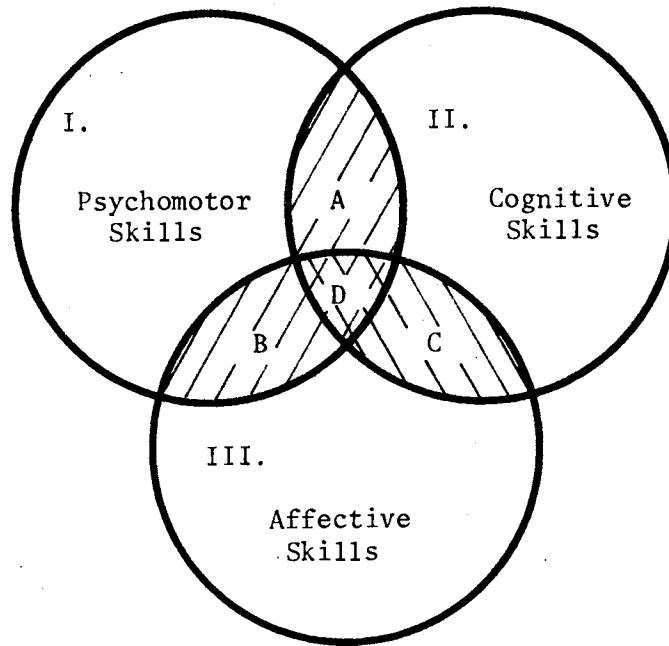
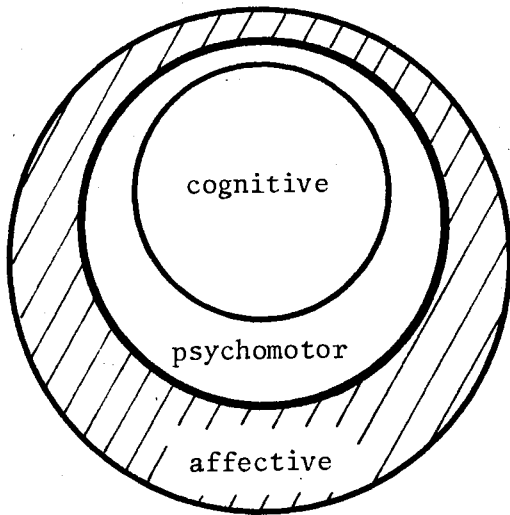
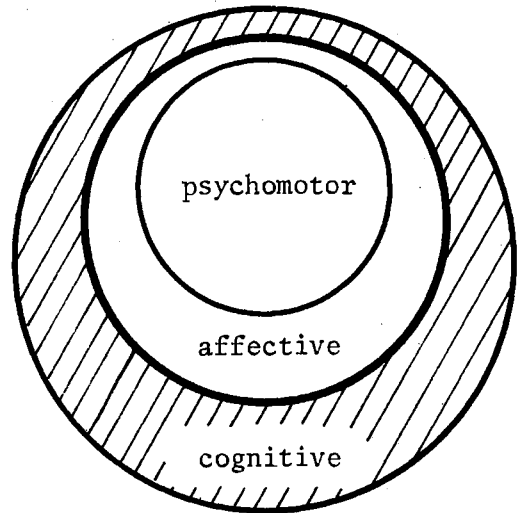


Figure 4. Horizontal Organization:
Organizing Elements

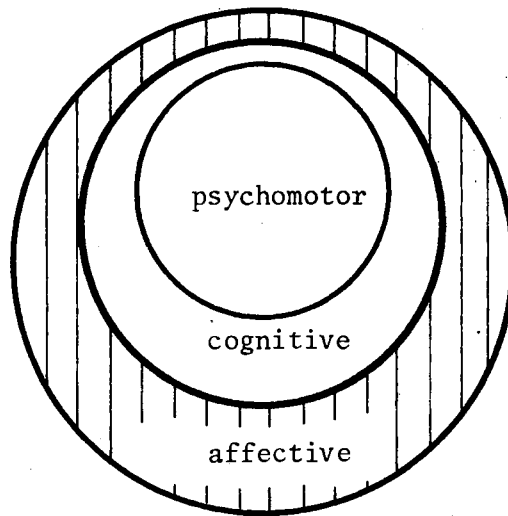
Developmental growth stages, and the logical aspect of the introduction of content and personal social factors are determinants in timing and emphases in terms of time allocation of the development of the three types of behavior used as organizing elements for content areas. Figure 5 graphically depicts the emphasis given to the development of each behavior during the three phases.



A. Orientation Phase



B. Exploratory/Reinforcement Phase



C. Quest Phase

Figure 5. Emphases: Affective, Psychomotor, Cognitive Behaviors

Due to the fact that the prime objective during the orientation period is the development of the self concept the affective domain receives the greatest emphasis. Development of psychomotor skills is the

second priority established supported by the belief that the development of many psychomotor skills is prerequisite to the development of cognitive skills. Cognitive skills receive the least emphasis during the orientation period depicted in Figure 5A.

During the exploratory/reinforcement period (Figure 5B) the cognitive skills receive the greatest emphasis. Pupils are placed on a continuum in reading and mathematics after a diagnosis of needs. The affective domain is considered a second priority while psychomotor skills are emphasized the least.

During the quest phase (Figure 5C) with an emphasis on the process skills the affective domain receives the greatest emphasis. With increased independence pupils have more interest in developing interpersonal skills and participating in a broader scope of activities. This is notable in the content area stressing personal development and environmental improvement. Psychomotor skills during the quest period receive the least emphasis.

Summary

Historically few significant changes have occurred in curriculum content for elementary school. Although new content has been added on a limited basis little attention has been given to the deletion of irrelevant content. Prompted by federal intervention and special interest groups the tendency has been to organize content as separate subjects. The integration aspect of subject areas has received limited recognition.

The need for criteria for the selection of content is becoming increasingly more evident. The knowledge explosion, the diversity of student population, and the lack of agreement among educators are only a

few of the factors contributing to the problems encountered in establishing a criteria for the selection of content and learning experiences.

Content for the year-round school curriculum design is organized into broad areas with sufficient flexibility for fusion of related subject areas. Consideration is given to the organizational content both vertically and horizontally. Vertically, content is organized for three different phases: the orientation, the exploratory/reinforcement, and the quest phases with different emphases recommended and priorities established for each phase.

Content for the orientation is to a great degree unscheduled and is determined by the needs, interests, and experiences of the child. During the exploratory/reinforcement and quest phases the content is divided into four broad areas: the communication skills comprised of reading, language, spelling and penmanship; humanities which includes social studies, art, music, drama, and literature; the area of mathematics and science; and a fourth area in which the focus is on personal development and environmental improvement.

Horizontally, the development of three types of behavior has been established as organizing elements: cognitive, psychomotor, and affective with different emphases determined for each phase by the developmental needs of the pupils.

CHAPTER IV
ORGANIZATION OF STUDENT POPULATION AND
IDENTIFICATION OF LEARNING
STRATEGIES

As more attention is devoted to the individual needs of students the organization of student population becomes increasingly more significant. Two aspects to consider in organizing student population are vertical organization and horizontal organization. Vertical organization provides a system for classifying students and moving them upward from entry to departure from the school unit (Goodlad, 1966). Horizontal organization refers to dividing the student population into instructional groups and allocating a certain number of students to a teacher. The over-all school structure facilitates the total learning environment and is a product of decisions on both the vertical and horizontal organizations of the school (Hawkes, 1971).

In reviewing the organizational schemes in terms of vertical organization it is evident that there is a lack of consensus on the most effective method of grouping students for instruction. It is interesting to note the incompatibility of the philosophy held by many educators and the organizational schemes currently used for grouping students. For example, Smith's (1968) research supports the notion that at certain ages maturation rate differs for boys and girls; yet no differentiation is made in school entry dates or in academic activities prescribed.

Differences also exist between individuals in terms of learning rate. Although there is no organizational scheme which fully provides for individual differences, there are some organizational schemes which are more supportive than others (Borg, 1966; Ekstrom, 1959).

Vertical Grouping

A review of the past history and an assessment of the present status reveals that a variety of schemes for the organization of pupil population has been tried. Two types of vertical organization are significant: the graded organizational system and the nongraded. The graded system had its beginnings in the Quincy Grammar School in 1848. The nongraded system emerged as a reactive movement to the limitations imposed upon the learner by the graded program (Goodlad and Anderson, 1959).

The beginning of the nongraded movement can be traced to the St. Louis School System. An organizational scheme was introduced in 1865 in which students were evaluated and reclassified every six weeks. No doubt this proved administratively awkward; however, it did indicate that some educators realized the inadequacy of the graded system. The Batavia system was another attempt to nongrade. In this system, two teachers were assigned to the same classroom; one teacher taught the slower students while the other teacher assumed the responsibility for teaching the more accelerated group. Adjustment of instructional materials to slower learners, the formation of accelerated classes and mid-year promotion were all attempts toward recognizing the need for nongradedness (Hillson, 1965). However, the organizational scheme remained sacred; no attempt was made to change the grade concept. Teachers still tried to adjust the student to the organization. In essence, educators seem to lose sight of

the "form should follow function" concept (Goodlad, 1966). The nongraded program in which grade designations were eliminated had its beginnings in the late 1930's in Milwaukee, Wisconsin. During the last half of the 1950-58 decade the nongraded movement moved at an accelerated pace and continues to be significantly evident in elementary school organization. Frequently labeled as multi-graded or multi-age grouping, the nongraded program has as a primary focus the provision of a continuous progress instructional program for all students.

Continuous Progress

Advocates of the continuous progress concept (Goodlad, 1966; Hyman, 1968; Hillson, 1965) view as a major advantage its adaptability to the unique needs of students. More than an organizational scheme continuous progress is a philosophy in which the prime commitment is to the recognition of individual differences. Basically it involves not only a strategy for the fluid movement of students but also a sequential arrangement of content to be learned. Both dimensions of continuous progress the organizational scheme which permits flexibility of movement for students and a well designed sequence of content to which the student can move are of equal importance in curriculum design (Cremin, 1961).

Perhaps the greatest advantage offered by continuous progress is the accommodation of the different learning rates of students. The scope in academic variability among students in any given grade is overwhelming to most teachers when attempting to provide for instructional needs of individuals. For example, Goodlad (1966, p. 33) defines a fourth grader as "any child enrolled in a fourth grade class who scores between 4.0 and 4.9 in each subject on a standardized test taken at midpoint of the

school year." In analyzing test data Goodlad contends that less than twenty percent of a given fourth grade class is at grade level. Goodlad continues by deploring the fact that little pertinent data is available which is related to individual differences. Standardized test data provides a group appraisal. Goodlad (1966, pp. 34-35) makes the following generalizations which are considered worthwhile in organizing the student population for instruction.

(1) The broad spread from high to low achiever steadily increases with the upward movement of heterogeneous classes (relatively homogeneous by chronological age) through the school. In the intermediate grades, this spread is approximately the number of years designated by the number of the grade-level: that is, by the third grade, three years; by the fourth grade, four years; by the fifth grade, five years.

(2) In subject areas, such as reading and language arts, where children can readily proceed on their own in a variety of out-of-school situations, the spread from high to low achiever frequently is one and one-half to twice the number of the grade-level. Hence, in the fifth grade, there frequently is an eight-year spread in reading achievement between the best and poorest readers. Differentiation in classroom group stimuli to provide for varying levels of accomplishment does not encompass this range, but the encouragement of self-selection of materials for supplementary reading at home and school facilitates highly individualized rates of progress. In arithmetic, the over-all spread in achievement is rarely greater than the number of the grade-level. Instruction in arithmetic, as generally carried on, makes relatively little provision for individual progress.

(3) There are very few fourth-grade children in a so-called fourth-grade class when a fourth-grade child is defined as one who achieved at fourth-grade level in all subjects at approximately the midpoint of the school year. (Fourth-grade level, in turn, is defined as between 4.0 and 4.9 on a standardized achievement test.) Actually, only three or four such children are found in the heterogeneous classes of today's elementary schools, according to the results of preliminary analyses. Certainly, the number is safely within the 0-to-20 percent bracket. A teacher, then, who considers himself a fourth-grade teacher is addressing himself to only three or four youngsters!

(4) The relative absence of fourth-graders in a fourth-grade class is a corollary of the irregular progress of a single child in the several fields of school study. Most children in the intermediate grades vary in achievement from subject to subject by at least a full grade. That is, a sixth-grader may achieve at 8.1 in reading, 6.9 in arithmetic, 7.7 in

spelling, 6.3 in science, 7.8 in social studies, for an over-all range of 1.8 grades. But some students vary from subject-field to subject-field by as many years as the number of the grade-level. Thus, a fifth grader may score at 9.6 in reading, 5.8 in science, 8.4 in spelling, 6.7 in social studies, 4.8 in arithmetic for an over-all range of 4.8 or just short of 5.0 full grades. Most so-called heterogeneous classes contain at least two or three children whose achievement profiles represent such diversity and many others who approach it.

In view of the increasing diversity among student population it is evident that there are many advantages in using a continuous progress model. Hillson and Hyman (1971, pp. 35-36) list the following advantages for continuous progress.

(1) Learning skill sequences that are operationally defined and developed to meet the needs of the learner population involved generally reflect better teaching opportunities as well as learning opportunities.

(2) Children are taught skills from learning sequences ranging from readiness to competency or mastery, and the development of skills is more carefully attended to.

(3) The elimination of promotion or nonpromotion eliminates much of the threat that brings about unhappiness in school.

(4) Children who are deliberate learners, but no less intelligent than their faster counterparts, can move at their own pace without the penalty of being nonpromoted simply because necessary coverage over a given year is defined as a grade. When multiaging is used in skill development programs, older children frequently become leaders when working with slower or younger children and teach them how to use manipulative and mechanical materials.

(5) When multiaging is used, children who would not make a contribution because of their peer critics, now tend to do so in a group where they are at a relevant, problem-solving level.

(6) There are no gaps in instruction because there is no grade to skip.

(7) There is no repetition of material that the child already knows since he begins each year where he left off.

(8) There is a greater opportunity for flexibility in grouping procedures and this allows for appropriate and pertinent placement of youngsters.

(9) Because of the problem-solving nature of the program attendant to the need of the child, the reduction in behavior problems is great.

(10) There is much more teamwork on the part of faculty members when they are involved in a collaborative planning program that allows them to evaluate and to deal with the needs of the individual youngsters.

(11) There is increased awareness of pupil individuality since individual differences are the very core of continuous progress.

(12) Where multi-adult exposure (through team teaching) takes place, a greater opportunity for real evaluation of the quality of the learner is made.

(13) There is no fear of encroachment on materials supposedly reserved for a particular grade.

(14) There is no ceiling on learning in a continuous progress program.

(15) The pressures normally found in graded education to achieve end-of-term goals and to maintain standards that may be clearly outside the attained abilities of pupils are eliminated since the norm in continuous progress is the child. His placement and work are always appropriate to his capacity, readiness, or competence.

In spite of the recommended criterion which may be used for inter-class grouping it is well that the teacher be aware that it is impossible to "organize away" individual differences (Goodlad, 1966, p. 60). Regardless of the grouping plan individual differences still exist and must be given prime consideration if learning opportunities are maximized.

Horizontal Grouping

There are numerous systems employed by teachers in organizing groups of students within a given class. The underlying purpose of organizing inter-class groupings is to make more effective use of teacher expertise, available space, and instructional materials. There are several alternatives available to the teacher for the organization of horizontal groupings: ability grouping, achievement grouping, or interest grouping is only a partial listing of current trends (Cohen, 1971; Goldberg, Passon, and Justman, 1966).

Ability grouping, long advocated by many lay groups as the solution to many problems, has glaring limitations. With the growing concern among recognized authorities of the unreliability of I.Q. measures teachers are becoming more reluctant to rely on ability grouping. George

Harris (1972, p. 39) in discussing I.Q. abuse indicts public schools with using I.Q. test results to label students. Harris continues by deploring the fact that I.Q. test results also help determine teacher expectations -- an aspect of the learning environment which cannot be minimized.

Guidelines for the Grouping of Students

In analyzing the preceding generalizations it appears feasible that an organizational scheme for the grouping of student population should be developed which would provide alternatives in terms of student needs. The following guidelines are proposed for vertical and horizontal grouping of students.

(1) A grouping plan is needed which will allow pupils within the same chronological age range to remain together for a part of the school day. Social and emotional as well as intellectual aspects should be considered. Erikson (1968, pp. 445-458) views the peer groups as a major instrument in resolving the identity crisis.

(2) Opportunities should be provided for many kinds of groupings. Berman (1968, p. 74) supports this premise when she states, "For optimum development, fluidity of grouping should characterize a school. Children then have the opportunity to establish mutually satisfying relationships with a variety of different kinds of people."

(3) Groupings which provide an opportunity for pupils to relate to a variety of kinds of persons. In addition to learning to relate to those with whom an affinity is rather easily established, children and youth need to examine their perceptions of those unlike themselves if they wish to include a range of differences among those for whom they care (Tewksbury, 1967).

Since horizontal groupings are tentative in nature -- frequently on a day-to-day basis -- and the emphasis is on the needs of the individual child, no attempt is made to describe horizontal groupings.

The following vertical organizational scheme for pupil population is proposed for the year-round school.

Grouping Students for the Year-Round School

Vertical Grouping Plan

This system of vertical grouping proposed for the year-round school is compatible with Piaget's cognitive stages of development (Ginsburg and Oppen, 1969). A similar multi-grade plan was also used to facilitate continuous pupil progress in Englewood, Florida and Torrance, California (Goodlad, 1966, p. 39).

In this plan the student population is divided into three family groups: the 5-7 age group which in a conventional graded school would be kindergarten, first, and second grade pupils; the 7-9 which includes a few students traditionally assigned to second grade in addition to third and fourth grade pupils; the third family is comprised of pupils in the age range 9-11 which would be the third, fourth and fifth graders in a graded organization. A notable feature of this plan is that each group is comprised of at least three age levels. Goodlad contends (1968, p. 39) "A longitudinal view of the curriculum by the teacher and continuous progress for the pupils are encouraged through the instructional modification of grade lines within a three year unit." The overlapping of grades is depicted in Figure 1, page 43. Alternative placements are provided for a student at any given grade level. For example, a nine-year old who traditionally would be placed in a fourth grade may well be

reading second grade level. By using the Continuum of Skills as described on page 66, the student is instructed at his reading level yet remains with his own age group.

Students enrolled in the orientation phase (ages 5-7) remain with the same team of teachers in the same learning center throughout the day. Provisions are made for students to work with the older students on special projects, thus recognizing the need for the association of students of varying ages. Details of this plan are discussed under horizontal organizational schemes.

Horizontal Organization of Students

Students enrolled in the exploratory and quest phases move in family groups in a cyclic schedule to four different instructional areas: communication skills, mathematics-science, humanities which includes social studies and the fine arts and the personal development and environmental improvement area. An instructional team is assigned to each of the first three areas described. (Special competencies of team members are described in Chapter V, page 76.) The instructional team for the personal development and environmental improvement area may be comprised of not only the regular school staff but also other community resource personnel. This horizontal plan allows the student to remain with his chronological age group while at the same time providing an opportunity for him to work on different levels in each of the subject matter areas.

Unique Enrollment Features

Students who are enrolled in the year-round school have the unique option of enrolling for either nine months or on a twelve-month basis.

However, those pupils enrolling for nine months are not required to attend school for nine consecutive months. Since some curriculum areas are spiral-cyclic in nature, entry dates are scheduled for the beginning of each quarter session. This system avoids the possibility of a student missing a part of a learning cycle. Students who choose to enroll for the year-round session have a choice in terms of time spent in the different instructional areas during three months of the twelve-month school attendance period. It is predicted that many pupils will elect to attend the conventional four quarter attendance period (180 days) using the remaining quarters for enrichment, special projects, maintenance of skills, or reinforcement of skills; however, it is possible for the pupil to continue the regular instructional program for a twelve-month period.

Learning Strategies Identified

In identifying learning strategies for the curriculum design a broad spectrum of needs merit consideration: the needs of the learner, the nature of the social setting in which the child lives, and the nature of the concepts to be taught is only a partial listing. Psychologists are concerned with the nature of the learner and question his emotional and intellectual development; sociologists question the child's experiential background in terms of environmental deficits; and the educator questions the nature of the knowledge to be learned. The task in curriculum is to define learning strategies which will accommodate all of these needs.

Combs (1969), Rogers (1961), and Moustakas (1973) believe that one cannot divorce learning strategies from environment. Each can enhance the other if a common focus is defined.

Following are assumptions concerning the learning environment and

learning strategies and implications for the year-round design.

Assumption 1: Freedom to be, choice and capacity to choose and responsibility and self confirmation are essential conditions of an authentic learning environment.

Clark Moustakas (1971, pp. 9-12) alludes to the "authenticity of the learning environment" and apprises teachers of the conditions for authentic growth. Moustakas considers freedom as an original gift of life, "the natural way for a newly-born child to make contact with the world." Piaget (Ginsburg and Opper, 1969, p. 221) describes the young child as active and responsive with a natural propensity to explore his environment. Rogers (1969, p. 5) in describing experiential learning alludes to "personal involvement and self initiation" as significant elements in a learning environment which endorses freedom.

In considering choice and capacity to choose one is concerned with aspects of valuing. Rath, Harmin, and Simon (1966) propose that the making of choices is a preliminary step to the formation of values.

Responsibility and self confirmation implies trust in one's own ability. Erikson (1968, p. 96) in assessing the significance of the development of trust contends that it is "the most fundamental prerequisite of mental vitality." Erikson continues by stating "trustfulness of others as well as a fundamental sense of one's own truthworthiness is essential for mental vitality."

The year-round curriculum design accommodates the conditions of an authentic environment in the integrated day for the orientation phase in which the child has opportunities to choose from centers of interest learning activities which are compatible with his interests. In the

exploratory and quest phases alternatives are provided by design in the personal development and environmental improvement instructional area.

Assumption 2: Individuals differ in learning rate, style, and aptitude.

Goodlad (1963) points to the wide range of differences in reading achievement in a specific grade level. Goodlad contends that the spread in achievement in terms of grade level is approximately the number of years designated by the number of the grade level; for example, the achievement spread in reading at the fourth grade level is four years.

The need to accommodate individual needs in terms of learning rate is evident in the continuous progress model designed for the exploratory and quest phases. Since cognitive skill development has not been established as a priority for the younger pupils enrolled in the orientation phase, learning strategies are exploratory in nature involving activities which accommodate the special interests of the child.

The diversity of learning styles found among children is recognized by offering different modes of learning through a variety of materials which include: auditory, visual, motoric, and kinesthetic.

Assumption 3: Every child must be enabled to relate nonschool experiences with school experiences.

To help the child learn to prize diversity, opportunity should be provided for the child to assume authentic social responsibilities (Berman, 1968). The inclusion of the personal development and environmental improvement area in the exploratory and quest phases in the design support this premise.

Assumption 4: In implementing learning strategies teachers should systematically evaluate the strategy.

The emphasis on accountability by legislative groups and a better informed public focus attention on tangible evidence that educators need to provide in order to obtain public support for programs. Lessinger (1970) alerts educators to the need for informing the public about student performance in terms that can be understood,

Accountability for the teacher is recognized in the design in the use of a Continuum of Skills developed for the basic skills area and used in the exploratory and quest phases where cognitive skills are emphasized.

Orientation Phase

The learning strategies designed for the orientation phase differ from those designed for the exploratory/reinforcement and quest phases. In designing learning strategies in the orientation phase, the designer used the rationale emerging from the British Infant School and frequently described as the integrated day concept. Lillian Webber (1971, p. 3) describes the integrated day in terms of the setting or arrangements, in which the child has freedom to investigate and explore. The teacher's role is to implement and open up a child's purposes.

Interest centers will be established for each learning area: communication skills, mathematics and science, humanities including the expressive arts, and physical education and motor skills.

Using the Language-Experience Approach (Stauffer, 1970) opportunities will be provided for the pupils to capitalize not only on their own experiences but also on the stimulus afforded by the interest centers. For the mathematics and science area opportunities are provided for the pupil to work with concrete objects and explore and investigate the nature of things as they exist to him in his world. It is the contention

of the designer supported by Piaget (1968), Combs (1969) and Moustakas (1973) that under the subtle guidance of the teacher the pupil will accept the responsibility to synthesize his own learning experiences if the learning environment is stimulating.

Emphasis is placed upon the needs and interests of the child and experiences are provided which facilitate the fulfillment of these needs and encourage the pursuit of activities which satisfy his interests. Such characteristics as flexibility, openness, initiative, enthusiasm, constructive human relationships, and discovery of self are readily visible in the learning environment designed for the orientation phase.

Exploratory/Reinforcement and Quest Phases

The learning strategies identified for the exploratory/reinforcement and the quest phases are continuous progress for reading, mathematics and music. A spiral of learning experiences will be designed for social studies, art, drama, and literature with social studies providing the theme for other areas. Subject areas such as art, drama, and literature will support the social studies theme while at the same time providing opportunities for the development of skills unique to a given subject.

In order to provide attendance options and multi-entry points for the design, a continuous progress model featuring a continuum of skills in reading and mathematics is provided. This continuum was developed by the Curriculum Department of the Tulsa Public Schools. The continuum is comprised of fifteen levels for both reading and mathematics which allows the pupil to progress at his individual rate. Placement tests are administered upon the pupil's entry into school to identify the appropriate level on the continuum on which he should be

placed. Performance objectives are defined; activities are prescribed; and a posttest is administered to determine if the objectives have been attained. If the pupil does not meet the criterion established for a given level a different learning mode is prescribed.

To describe this continuous progress model in isolation from other components of the curriculum may create an impression among readers that there is too much structure, overemphasis on evaluation, and little opportunity provided for exploration. In response to this predicted criticism the designer points out the following unique features of the cognitive skills instructional area.

(1) Formal instruction in reading and mathematics is not introduced to all pupils at a specific time. Prerequisite skills are identified, needs assessed, and pupils are introduced to formal instruction in the cognitive skills area only after a careful appraisal is made by the team of teachers.

(2) Although it may be possible for a few five-year olds to begin formal instruction in reading, it is equally possible that formal instruction may be postponed for many children until they are seven years old -- a practice condoned by Frostig (1965), Webber (1971), and Ames (1965). During the orientation period major objectives are to help the learner identify his unique learning style.

Summary

The organization of the student population facilitates the total learning environment and is a result of decisions involving both the vertical and horizontal grouping of students. The continuous progress concept recognizes the individual needs of students and provides a

rationale for the movement of students through a sequential arrangement of content to be learned.

Students enrolled in the orientation phase remain with one team of teachers in a family group through out the school day. Students enrolled in the exploratory and quest phases move in family groups from one instructional area to another. Some students enrolled in the quest phase upon the consent of the teacher and the parent may establish one instructional area as a priority in terms of time and spend the greater part of their school day in the selected area. Students also have the option of enrolling either for a nine-month or a twelve-month period.

Learning strategies designed for the year-round school accommodate the diversity among students in terms of rate, style, and aptitude.

Learning strategies are compatible with behavior emphasis designated for each phase. During the orientation period when the emphasis is on the affective, the child is allowed a great amount of freedom to choose his own learning experience. Conversely, during the exploratory/reinforcement phase when the emphasis is on development of cognitive skills the continuum is introduced, and the learning strategies are more structured. During the quest phase as the learner becomes more socially responsible he has more learning options from which to choose.

The organization of the student population and identification of learning strategies recognizes the organizing elements proposed by Tyler. There is evidence of continuity, sequence, and integration.

CHAPTER V

ORGANIZATION OF STAFF

Staffing Trends

New concepts of school organization, vocal demands by the public for accountability and increasing interest of educators in the management sciences have prompted the critical examination of many time-honored staff organizational patterns traditionally used by school systems. Educators are beginning to explore concepts of organization that seek to make more efficient use of educational personnel. Staffing patterns are being examined in terms of use of professional expertise, time, energy and money.

The introduction of new teaching materials which are not only self instructing but also self correcting has decreased the amount of supervision and direction by the teacher. New teaching devices initiated by the development of technology have broadened the range of competence among persons working with children. These changes along with renewed focus on individualization have created an awareness of the need for a new clarification of the role of the professional teacher.

Nationwide the trend in staffing at the elementary level has been the self contained classroom taught by one teacher who is responsible for the total instructional program for an assigned group or grade (Chamberlin, 1969). Although it is true that some degree of specialization may be detected in staffing patterns used in semidepartmentalized or platoon

systems, in each case the teacher plays an autonomous role with minimum division of labor and limited opportunity for the clustering of specialists or the pooling of cooperative efforts.

It is evident that there is a need for a new organizational structure which will improve the educational opportunities for children by capitalizing on the strengths of teachers. Inherent in such a structure is an increased degree of flexibility for teacher responsibility and decision making and an invigorating spirit of freedom and opportunity to explore new perspectives in education, thus improving the professional status of teachers.

Dempsey and Smith (1972, p. 2) in assessing the professional status of teachers voice concern for the tentative nature of professional recognition. They lament the fact that teachers are deprived of three benefits concomitant with professionalism: "adequate compensation, promotion or similar forms of recognition and decisional powers."

Milton Kaplan (1968, p. 4) criticizes the lock-step salary schedule for teachers that "pay only on the basis of years of experience and professional academic preparation." Kaplan further indicts the school administration which is charged with the responsibility of obtaining better salaries and improved teaching methods while at the same time being the "frantic recruiters who take teaching talent out of the classrooms."

Fenwick English (1968, pp. 1-2) supports Kaplan in his concern for adequate teachers' salaries when he says, "Teaching is an important educational enterprise, but all the rewards, financial, and otherwise, encourage movement away from the classroom." The administrator is the one who has the power and prestige in education. John Rand quoted by

Crenshaw and Smith (1968, pp. 1-2) says, "It must be possible for teachers to earn more money and still work closely with children."

Traditionally teachers have not assumed a professional stance in dealing with their professional affairs. Since most organizational structures do not permit flexibility in the utilization of expertise and experience, they have become what Chamberlin (1969, p. 2) describes as "interchangeable parts in a rigid organizational structure." Although individualization is a major focus in making decisions concerning children, little attention is given to the individual differences which exist among teachers. Levels of competency are unrecognized and all teachers, the new and the experienced, the superior and the incompetent, are assigned the same number of pupils along with the same responsibilities. For the most part present organizational structures foster a lock-step salary schedule in which teachers are rewarded for longevity rather than performance. In the final analysis teachers who seek financial rewards and professional recognition must leave teaching positions. Advocates of differentiated staffing (Dempsey, 1972; Kaplan, 1968; English, 1968) contend that the implementation of differentiated staffing would rectify many of these problems and also provide the thrust for educational change in many directions.

Differentiated Staffing Models

Differentiated staffing is not a new concept; it is new only to the field of education. Many professions have found that through the differentiation of tasks and the utilization of personnel with varying competency levels improved services can be provided for clients.

In an effort to determine the prevalence of differentiated staffing

at the elementary level the designer has made a cursory examination of the limited data available on differentiated staffing models. The examination reflects many degrees of complexity and models are at different stages of development. Some are operational while others are in the planning as well as the conjectural stages.

Perhaps the model receiving the greatest acclaim is the Temple City, California Model which evolved from Dwight Allen's work on differentiated staffing. Funded as a study by a Charles F. Kettering Foundation Grant the Temple City model has served as a prototype for other models.

Grambs (1970, p. 114) cites tradition, reaction, conservatism, and established interests as inhibiting forces which bring pressure on education today. It is unfortunate that the educators who must assume the leadership in initiating change are products of the systems which they seek to change. The fact that they are in a leadership position too frequently means that they have condoned the present system and as a consequence, in order to protect their vested interest in the system they are unable to make an objective appraisal of its efficiency.

Gardner (1963, p. 43) in referring to obstacles to renewal reminds his readers that:

To achieve renewal we need to understand what prevents renewal. And most of the things that prevent it are to be found in the mind rather than in external arrangements. As every good management consultant knows, it is relatively easy to specify the things about an organization that need renewal; what is difficult is to cope with the habits and attitudes that permitted the organization to go to seed in the first place.

He appropriately describes these defenses against new ideas as "mind-forged manacles." Gardner concurs with Grambs (1970) that vested interests also hinders rather than enhances one's position to make changes. Preoccupation with conserving what we have limits and imposes

obligations and restrictions. Gardner goes on to quote William Jones (1902, p. 313) who proposed that "Lives based on having are less free than lives based either on doing or on being." This belief is also supported by Maslow (1971).

Most differentiated staffing models are designed to satisfy local district needs. However, it is notable that similar inhibiting and facilitating forces were active in most models. In designing a differentiated staffing model it is recommended that the change agent be aware of and minimize the inhibiting forces which may impede progress while at the same time special efforts should be made to maximize the facilitating forces which enhance the chances for success (Allen and Kline, 1971).

Following is a summation of forces described by Kaplan (1968), English (1968), and Chamberlain (1969) which inhibit the implementation of differentiated staffing.

Inhibiting Forces

(1) Teachers fear that differentiated staffing may result in loss of tenured position and status among peers. Many teachers enjoy autonomy and are not enthusiastic about working as a team in a cooperative effort to pool resources and expertise in solving problems.

(2) In some cases, teachers are apprehensive about their teaching competency and fear the visibility which comes with working with an instructional team. These teachers enjoy the paternal guidance of the principal in a school climate which Halpin (1966, p. 179) describes as a paternal climate. Teachers frequently lack interest in becoming involved in decision making and have little concern for assuming greater responsibility.

(3) Imposed change implies that the present mode of operation is inadequate. To many teachers the change in staffing patterns is demoralizing in the sense that they assume that a proposed change means that they have been doing an inadequate job.

(4) Some principals who feel inadequate in curriculum areas think their management position is threatened if teachers are given a significant role in decision making. In a superficial effort to provide equal treatment for all teachers they favor an organizational pattern which provides administrative convenience. To identify teachers on the staff who have special competencies and to delineate responsibilities commensurate with these competencies proves administratively awkward for many principals. Too frequently they prefer to resort to the equal treatment of unequals.

(5) If the change-agent comes from outside the district tenured school personnel is suspicious of his actions and are frequently reluctant to cooperate.

(6) Some teachers equate differentiated staffing with merit pay and are concerned with rigid hierarchies which it may promote.

(7) Both laymen and school personnel voice concern about the lack of research which proves that differentiated staffing is more effective.

(8) Professionals resent the intrusion of paraprofessionals into the field of education voicing the concern that certification standards will be lowered and professionally trained teachers will be deprived of positions.

(9) In some states (notably Oklahoma) legislative restrictions do not permit flexibility in implementing differentiated staffing models. Teacher-pupil ratios are determined on the premise that all elementary

schools use a self-contained organizational pattern.

Facilitating Forces

In contrast to those forces which deter the implementation of differentiated staffing, attention should be focused on those factors which provide a climate conducive to the success of differentiated staffing (Rand and English, 1968). The change agent responsible for implementing a new staffing organizational structure should be cognizant of the following positive forces.

(1) The selection of a pilot school is significant in averting controversy. A new school is preferable. The selection of the staff for a new school affords opportunity to identify and select staff members who have expertise to assume specific responsibilities and who have a special interest in differentiated staffing. Given these conditions, it is much easier to establish what Croft and Halpin (1966, pp. 174-175) describe as an open climate. The "halo of newness" also has a tendency to provide protection for innovations.

(2) The advantage of an informed public cannot be minimized. Apprising the community of goals, objectives, and dissemination of information on a periodic basis are important aspects in implementing change.

(3) Helping teachers see the need for change by analyzing present staffing organizational structure in terms of strengths and deficiencies, assessing needs, and designing possible alternatives is mandatory.

(4) Helping teachers acquire sufficient background in possible strategies which may be used in implementing a different staffing structure is important. Frequently lack of "know-how" in implementing a change makes teachers defensive of a conventional method.

(5) Teacher involvement cannot be overemphasized. Change should emerge from within the system if at all possible. Early involvement in planning has a significant influence on subsequent commitment in designing and implementing a change.

(6) The change agent or person in the leadership position should be sensitive to the needs of the people involved. Attitudes change slowly, and the change agent should assume a supportive role at all times.

(7) The support and cooperation of a teacher training institution provides an opportunity to obtain professional expertise outside the school district. In evaluating programs and organizational changes the objective viewpoint of professionals from outside the district lends credibility to the evaluation.

(8) The organization of a lay advisory board provides channels for communication between school personnel and the community and provides a system for dissemination of information to the public.

Proposed Differentiated Staffing for Year-Round School

The staffing model proposed for the year-round school features three distinct categories: one for professionals under contract by the district; a second category for paraprofessionals employed by the district; and a third category for staff members assigned by the cooperating university. Some decision making will be shared; however, decisions pertaining to specific responsibilities may be made by individual staff members.

The staffing model designed for the orientation phase (ages 5-7) differs from the model designed for the exploratory (ages 7, 8, 9) and

the quest phase (ages 9, 10, 11). This difference is justified on the premise that the emphases in the instructional program changes as the child progresses through each phase. There are no definite lines of demarcation between the phases as evidenced by the overlapping of ages in the transition of one phase to another. However, during the orientation phase greater attention is focused on developing a child-centered approach to learning. During the child's school experience in most cases he moves from emotional dependence to an independence. In this design provisions are made in staff organization to provide the most effective support during each phase. As the child moves from a dependent learner in which he satisfies his personal needs to an independent learner where he is introduced to organized knowledge, the skills and expertise needed by the staff may change. In this design the staffing structure is organized to accommodate this change in emphases.

Staff Allocation and Assignment

The staffing model designed for the orientation phase is comprised of both professional and paraprofessional district employees and assignees from the cooperating university. This team will be responsible for the instructional program for approximately three hundred students. Members of the instructional team for the orientation phase will include:

- 1 research and staff developer (three-month assignment)
- 1 coordinator
- 6 staff teachers
- 6 paraprofessionals
- 2 clerical aides
- 4 interns

4 student teachers and

4 tutor-observers.

It is recommended that at least one teacher on the team be a specialist in early childhood education. The remaining members of the team for the most part will be generalists with special expertise in relating to the preoperational child (ages 5-7). A chart depicting the staffing plan is included on the following page (Figure 6).

For the exploratory/reinforcement and quest phases a team is assigned to each of the three instructional areas: communication skills, math-science and humanities.

Membership of each instructional team is comprised of:

- 1 coordinator
- 2 staff teachers
- 2 student observer tutors
- 2 paraprofessionals
- 2 intern teachers and
- 2 student teachers.

A graphic depiction of the staffing pattern for the exploratory/reinforcement and quest phases is included as Figure 7.

Personnel

The staffing model described for the year-round curriculum design requires a commitment from a teacher training institution to provide a part of the staff. It is predicted that through a cooperative effort between the public schools and the Education Department of a university will emerge an improved teacher training program while at the same time providing a more efficient staffing model for the public school.

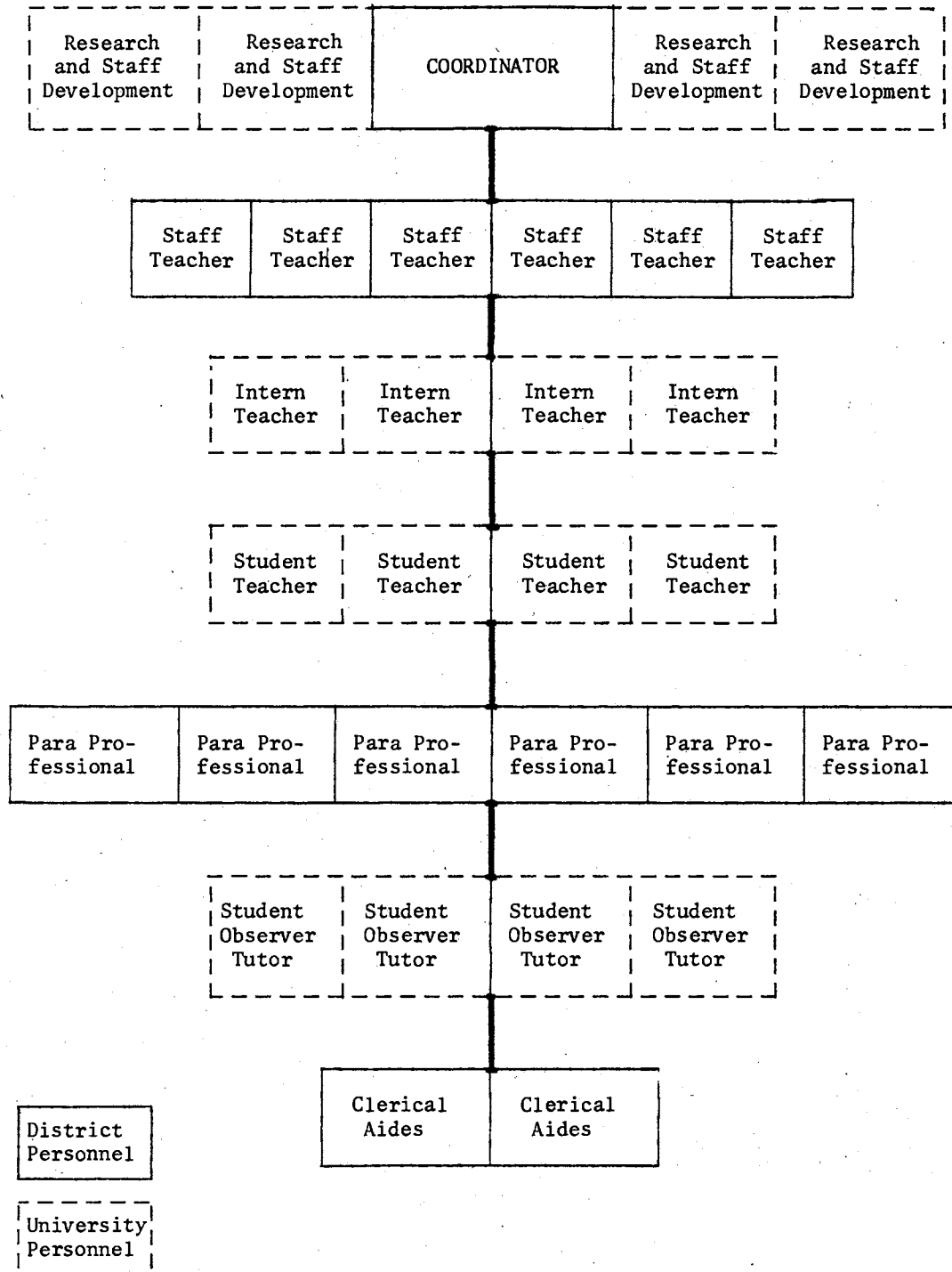


Figure 6. Staffing Model: Orientation Phase

Figure 8 depicts the classification of assignees from the cooperating university, the length of the assignment and the educational level for each participant.

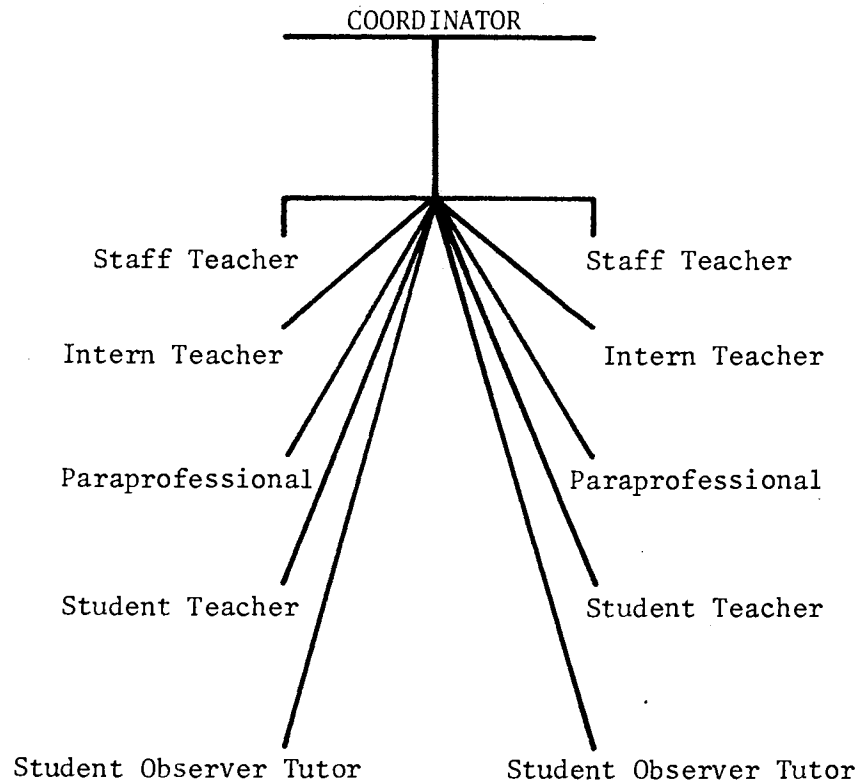


Figure 7. Staffing Model: Instructional Area Team

Research and Staff Development

It is proposed that doctoral students with a special interest in curriculum design serve a three month field assignment in the public schools as research and staff development specialists. This field

Assignment Tenure								
3 months	1 semester	1 year 1/2 salary District	3 month assignment	Student Observer Tutor	Student Observer Tutor	Student Observer Tutor	Student Observer Tutor	Junior Education Majors
				Student Teacher	Student Teacher	Student Teacher	Student Teacher	Senior Level
				Intern Teacher	Intern Teacher	Intern Teacher	Intern Teacher	Masters Level
				Research and Staff Development	Research and Staff Development	Research and Staff Development	Research and Staff Development	Doctoral Level Field Study
				Level of Professional Training				

Figure 8. University Personnel: Assignment Tenure and Professional Level

service provides input from outside the district, which enables the school district to have a more objective evaluation. These specialists will also serve as liason between the cooperating university and the school. Field service assignees could be assigned the additional responsibility of supervising student teachers from the participating university.

Intern Teachers

Intern teachers are defined as teachers working toward a master's degree in elementary education. The school district assumes only half the salary of intern teachers; the sponsoring university grants a half stipend to each participating intern teacher.

Summary

Prompted by an increasing interest among educators in the management sciences more efficient use of educational personnel is being investigated. The introduction of new teaching materials and the teaching devices afforded by advances made in technology have broadened the scope of competence among persons working with children.

In assessing the professional status of teachers many have voiced concern for the tentative nature of the teaching profession. In order to obtain better salaries many good teachers are forced to leave teaching positions for more lucrative administrative posts. The organizational structures do not permit flexibility in the utilization of expertise and experience, and little attention has been given to the individual differences which exist among teachers.

It is predicted by many (Chamberlin, 1969; English, 1968) that a

differentiated staffing model may provide opportunities not only for an improved educational program but also for an increased degree of flexibility for teacher responsibility and decision making.

CHAPTER VI

PUBLIC INVOLVEMENT AND COMMUNICATION

Today's educators have a formidable task in mobilizing community support for the implementation of change in curriculum, the design of school facilities or the modification of organizational schemes. As never before in history schools are being held accountable to the people they serve.

With greater emphasis on accountability both teachers and administrators are reluctant to explore new methods of school organization or innovative practices in teaching. Dempsey (1972, p. 61) points out that people resist change because "they resent the implication that their present method of operation, work routine, or role is inadequate." The demand for accountability serves only to reinforce this resentment and as a result conventional practices in schools become even more entrenched.

In the past schools have been considered the great equalizers of diverse social classes and are "still perceived by many as our society's major apparatus for social revision " (Provus, 1970, p. 371). However, with the diversity of opinions among different factions of the community concerning the purposes and function of the school the educators are too frequently stymied in their efforts to seek ways to improve educational opportunities. A major part of their time and energy is spent in either defending current practices or appeasing special interest groups. One group of parents may be interested in encouraging diversity, promoting

the recognition of individual learning styles, and are able to appreciate the benefits derived from pluralism. Other groups in the same school community may resist change and strive to preserve traditional practices in education. These conflicting beliefs formulated by the values held by individuals inhibit educators in soliciting community support for changes in education (Fantini, 1973).

Along with the reluctance of many to accept change, the increasing diversity of the population, the recognition of minority groups and the high mobility rate among families may also deter the efforts of school personnel to mobilize community support for changes in educational programs (Bremer, 1973).

It is the consensus of some (Smith, 1973; Fantini, 1973) that alternatives should be provided not only within a school but also within a school system when such diversity of needs and viewpoints concerning the school functions exists within a community.

Alternative Schools

Alternative schools emerging from the free school movement have provided the impetus for school systems to seek alternative ways of dealing with differing viewpoints. Such schools as Philadelphia Parkway School, the Murray Road School in Newton, Massachusetts, Herbert Kohl's "Other Way" and the Multi Cultural Institute in the San Francisco Bay Area offer a different school setting for parents who seek a learning environment which has established different priorities and emphases (Bremer, 1973, p. 449).

In contrast to a conventional mode of operation where parents have no choice as to the school which their children attend, enrollees in an

alternative school elect to attend that specific school. Freedom of choice in school attendance has long been denied many parents in larger urban school districts.

In an alternative school the fact that students have the privilege of electing to attend the school assures to a great extent parental support of the school curriculum and minimizes the discontent which frequently exists where parents have curriculum changes imposed upon them (Fantini, 1973; Barr, 1973). It is proposed that the year-round school be an alternative school in which a systematic approach is developed to recruit parents to become actively involved in the planning, the implementation, the evaluation, and the needed revisions of the curriculum design.

Significance of Parent Involvement

The importance of parent involvement in the decisions concerning the school cannot be overlooked. In addition to providing attendance alternatives, school administrators should devise systematic methods for dissemination of information to parents. Serious efforts should be made to establish compatible school-parent relationships. Educational leaders should play a vital role in increasing community awareness thus creating an appropriate knowledge base for educational planning. Although parents have more continuous contact with schools than any other tax supported agency they tend to be reactors rather than developers, vetoers rather than planners. The school should be responsive to the needs of parents as well as children's needs.

Lillian Webber (1971, p. 102) in reviewing the Plowder Report urges "active invitation, active encouragement of parent engagement with the

school, and active school service to parents." Roland Barth (1972, p. 195) believes that although parents want a voice in policy decisions they also want leadership from professional educators. He advocates that prior to the implementation of any innovative program parents should be included in the same activities as teachers.

Snyder and Peterson (1970, p. 239) in recognizing the importance of parental involvement in school learning, policy, and implementation, formulated the following strategies.

- (1) Establishment of a sound public-communication policy within the organization of the school.
- (2) Determination of what educational needs and developments are needed for the benefit of pupils.
- (3) Determination of what parents and patrons believe about educational values and needs.
- (4) Determination of what facts parents and patrons need to know in order to understand the benefits children derive from their formal education.
- (5) Utilization of effective teacher-pupil planning techniques, directed toward pupil understanding and appreciation of their educational experience.
- (6) Utilization of cost and tax factors related to the educational opportunities provided for the pupils.

Effective Communication Between the School and Parents

Communication is a dynamic process. Today's school community with its high degree of complexity, the diverse interest of parents within the community, and the high mobility rate among the citizenry has a difficult task in disseminating information in a way in which it has meaning for parents. Insensitivity among school administrators and other educational personnel can have a negative effect on dissemination of knowledge. The process of communication is two-dimensional; the ability to be effected and the ability to affect. These dimensions have implications for educators in establishing effective communication channels between

the school and parents. Educators must be open in sharing ideas and must be able to listen to parents with purpose. Superficial planning with parents proves unproductive in the long run (Bremer, 1973; Broudy, 1973).

The major purpose of the systematically designed school communication program is to apprise parents of the general nature and rationale for the year-round school, the organizational plan for each of the curriculum components, and to determine a feasible system of evaluation which parents will understand. It is recommended that a communication program designed for the dissemination of information concerning the year-round school encompass three phases: orientation and planning, implementation, and evaluation.

Orientation and Planning Phase

During the orientation through organized study sessions sponsored jointly by the school and a school related organization such as the PTA executive board parents will be apprised of the general nature of the year-round school concept. Both advantages and disadvantages will be discussed during the orientation phase. Parents should be knowledgeable of such topics as the rationale for supporting the year-round school, general nature of operational procedures such as attendance options, unique enrollment features, building facilities and the inhibiting forces which impede the development of any innovative program. If parents are aware of the nature of change and some of the problems involved in initiating a new school program, they can become a viable force in assisting school personnel in coping with such problems (Hunt, 1969).

Implementation Phase

During this phase of study for parents the organization of the various curriculum components will be discussed. The concept of differentiated staffing, the organization of pupil population and a description of learning strategies are topics of special interest to parents. Also during this phase of study tasks will be defined which parents can perform within the learning environment. The concept of volunteer school service will be described, policies determined, and operational procedures defined. Parents frequently have valuable input in writing policy related to volunteer service in a school.

Evaluation Phase

Evaluation for new programs should be continuous and parents should receive periodic reports of progress. If the relationship between parents and school personnel is sufficiently open the administrator should have no trepidation about discussing with parents not only the positive but also the negative aspects of a new program. Parent involvement at all stages permits this openness.

Parent-teacher-pupil conferences are considered most effective in helping parents understand the strengths and deficiencies of a student and the teaching strategies used. Parents' understanding of the methods used to evaluate the students' work is also of great significance. If a progress report has no meaning to parents its value is questionable. An appraisal of strengths and weaknesses of the program should be given to parents at the end of the year. Results should be explained in terms of academic improvement and pupil attitude; a cost analysis related to the educational opportunities should also be included in the report.

Opportunities should be provided for discussion and the suggestions of parents for improvement should be actively sought by school personnel.

The dissemination of information to parents should be of a continuous nature. A parent advisory group will be organized to study various aspects of the curriculum and to apprise parents new to the district of the curriculum design and the operational aspects of the school. The publication of periodic newsletters, a calendar of events, and the scheduling of parent school visitation days are other sources which will be used to disseminate information.

Special talents of parents will be used during the special projects period in which students pursue their own interests. Operational details of parent involvement will be discussed in Chapter VII, Utilizing Community Resources.

Summary

The mobilization of the support of the relevant school publics is becoming increasingly more significant. Effective communication, parent involvement and utilization of community resources facilitate positive school community relations.

CHAPTER VII

UTILIZING COMMUNITY RESOURCES

In the quest to improve educational opportunities for today's youth it is the belief of many that the use of community resources as an integral part of the curriculum design has been overlooked by most educators. A new freedom initiated by advances made in the technical world has created a different role for women. Today's woman has much more time to systematically devote to improving the community in which she lives. Hospitals, recreational centers, and other social agencies have made special efforts to recruit, train, and recognize volunteers as a worthy addition to their work force. Unfortunately, this is not true in the public schools. Although there has been a sweeping movement in the use of the services of volunteers in the school setting, little effort has been made to clarify the role or to identify the unique talents or special areas of competency of the volunteer. Too frequently, volunteers in the school environment are relegated to mundane tasks which offer little opportunity for creativity or decision making (Riessman, 1967). The prevalence of early retirement among men offers another source for talent which could be mobilized for school service (Shaplin, 1964).

Schools are having difficulty providing adequate learning facilities and personnel with sufficient diversity in professional training to cope with the problems created by the knowledge explosion and the changes initiated by technology. The year-round curriculum design proposes not

only an extension of the school year but also an extension of the school day in which all citizens of the community unify their efforts in improving the community education program.

Organizing the Schools to Serve the Community

From an organizational perspective it is the contention of Janowitz (1969) and Poppa (1967, p. 136) that a systematic program for the use of community resources and parent participation should be designed and the development of a humane community should be a major focus. It is predicted that with increased citizen participation in the community education program the school might well serve as a linkage between other community agencies.

Assessing Talents and Identifying Interests

Too frequently citizens of a community have unique talents which could be effectively used to enhance the school curriculum. Evidences of these talents can be easily recognized in scouting or campfire activities in which both men and women work after school hours with children who are members of these groups. Working with tools, craft activities, nature study and learning a foreign language are worthy pursuits for the elementary age child which have been explored by other organizations but too frequently neglected by the school. It is proposed in the year-round curriculum design that a survey be made assessing the talents and interests of citizens of the community. Using this data curriculum activities will be designed which not only improve the curriculum but also provide an opportunity for general citizen participation and social commitment. It is recommended that such citizen groups assume the

responsibility for instruction in the personal development and environmental improvement areas described in Chapter III, page 47.

Recruitment and Training of Volunteers

Within most communities there are civic organizations, community agencies, and special interest groups which are in a position to recruit and train volunteers. In large urban areas many of these organizations are actively seeking ways to help improve the schools by providing additional services. It is recommended that these organizations be used in mobilizing and training school volunteers for special projects. Each organization would be responsible for the recruitment and training of volunteers for a specific project. For example, one organization may recruit and train volunteers to work in the visual arts area while another may focus on obtaining volunteers for shop activities. Designating a specific role for each organization enables school personnel to recognize special interests of organizations and the unique talents of participating individuals.

For some volunteers little or no training will be required. However, all volunteers should be apprised of school policies and schedules and routines which are an inherent part of any efficient organization. Even more significant for the volunteer is the awareness of the physical, emotional, and social needs of the elementary school child. By recognizing volunteer services as an essential component of the organizational scheme the scope of learning experiences is broadened for the student.

Unifying Community Resources

Many full time professionals in other fields are amenable to the idea of providing talent to enhance the public school curriculum if opportunities were made available, objectives identified, and direction provided. It is proposed that a survey be made of the professions represented in the community and plans be developed to utilize when it is feasible the talents of other professionals in the school program.

Mini courses designed by school personnel and offered by other community resources is another possibility which should be explored. One field trip to a museum may have little impact on a child; however a five-day seminar type learning experience at the same museum may prove most productive. Released time from the time block usually allocated to the school day to a recreational center in which the pupils may learn skills which provide life-time pleasure is not unrealistic. Such recreational sports as swimming, fishing, boating, and skiing may well be delegated to Park and Recreational Center personnel during the school day.

Summary

With increased life expectancy and an increasing emphasis on leisure time activities it is imperative that curriculum designers give considerations to the expansion and extension of the learning climate beyond the walls of the school. Mobilizing and unifying other community resources and allowing the school to become an organizing center for the development of a community educational program may prove more feasible in terms of economics and provide a more exciting and productive education for children.

CHAPTER VIII

MATERIALS, EQUIPMENT AND FACILITIES

The massive influx of equipment and materials into schools has made a significant impact on both the teacher's role and the learning environment. For some teachers new and different materials and equipment has made little difference. Lacking enthusiasm for change and feeling more secure with familiar materials they have maintained a learning atmosphere which is conventional, structured, and dependent almost entirely upon the directions of the teachers. Their greatest fear is that the teacher will be replaced by a machine. There are others who equate progress with more things, more money, and more technology. Both perspectives need challenging. The question is: How much more can humaneness be encouraged through enhancing the impact of the physical setting in terms of equipment, materials and physical facilities?

Although the major focus of this chapter is on equipment, materials and facilities which enhance the learning climate, there is no intent to minimize the importance of the teacher in facilitating significant learning experiences. Materials and stimulating facilities are effective only if the teacher optimizes their use. Miller (1970, p. 156) supports this premise when he states, "Equipment and facilities have no content. They do not and cannot foster humaneness or lack of humaneness. What creates or thwarts growth is the way educators use or misuse equipment."

Effective Use of Media

In addition to a rational theory of instruction and an organizational design which facilitates learning teachers must be aware of the purposes and limitations of each medium of instruction. Well-trenched teaching routines and the reluctance of teachers to learn how to use materials frequently hinders success in the use of new materials. To alleviate this problem Goodlad (1967) suggests that media systems be designed which would not require teacher involvement.

Many critics justifiably maintain that current teaching materials limit creativity and encourage only conventional responses. Taylor and Williams (1966, pp. 367-374) list more than a hundred ways that materials can encourage creativity. The following is a partial listing.

(1) Develop self-instructional programs based upon the concept of originality in which likely or usual responses would be scored incorrect or penalized and unlikely responses accepted and rewarded.

(2) Design media for teacher instruction and teacher preparation showing various means for rewarding and encouraging autonomy in the classroom.

(3) Design or use instructional media for the purpose of shifting from adjustment to development, i.e., show how failures or mistakes pay off, constructive discontent, anxieties and conflicts overcome, improvements made, things that bother people, and how these can be changed.

(4) Design instructional media solely for the purpose of transmitting rich sensory inputs by animation, color, sounds, noise, and all combinations of inputs to be used for releasing creativity through self-expression. (How do you feel about this color, sound, etc.)

(5) Develop instructional media around a case-study approach to a problem and then pose the question: What would you do?

(6) Design media (film) around respect and reward for unusual questions and ideas, with ways that teachers can encourage and give opportunities for such behavior.

(7) Design a media device which identifies a problem and requires students to form their own hypotheses of how it might be solved.

Equipment and materials if used in the most efficient way can

provide more time to be humane. Learning activities such as reinforcement in the basic facts in mathematics and programmed maintenance materials in word analysis are examples of learning experiences which do not necessarily require the teacher's instructional time.

Many instructional materials and equipment play an important role in the individualization of instruction. Self paced learning activities provide freedom for the learner to move at his unique learning rate. The variety of materials affords an opportunity for the learner to select those materials which are compatible with his learning style.

Facilities

Harold Gores, President of Educational Facilities Laboratories, says his goal in designing a classroom is "to capture an 'acre of June' and a 'scoop of sky'." Most educators agree with Gores that physical facilities help create an atmosphere which can facilitate or retard the learning environment.

William Caudill (1954, p. 3), a renowned architect, says:

If we are to plan schools which will help the pupil, and if we are to consider the pupil as our yardstick, we must think of him always as a living body. When we do we will stop building places to store children and will start building healthful, comfortable schools designed to be lived in.

In designing physical facilities for the year-round curriculum design it is recommended that the following specifications be considered.

(1) In order to facilitate the individualization of instruction predominately open space facility is recommended. Open space provides greater accessibility in terms of human and material resources. Openness of the physical space also lends itself to fluid movement of pupils and teachers and provides increased flexibility in the grouping of pupils for

individual needs and interests.

(2) An open space learning center is recommended for pupils in the orientation phase (ages 5-7) with sufficient space to accommodate four interest centers: communication skills which may be fused with the expressive arts, mathematics, science, and a general purpose center.

(3) An auxiliary gym is recommended for physical and motor development activities. Learning experiences in music will also be scheduled in the gym.

(4) Pupils enrolled in the orientation phase will share some areas such as the cafeteria and sheltered playground area with pupils enrolled in the other phases.

(5) Physical facilities designed for the exploratory and quest phases should have sufficient open space to accommodate four instructional areas: communication skills, math-science, humanities, and a general activity center for shop and craft activities.

(6) It is recommended that an atrium type classroom be included in the plan to provide facilities for the implementation of an outdoor curriculum.

(7) Closed spaces are recommended for music, conferences, testing, speech therapy, health facilities, instrumental music, and administrative offices.

Summary

It is believed by many that the current controversy between the behaviorist and the humanist can -- in part -- be attributed to the advent of technology. The use of instructional materials and equipment made possible by technological innovations has caused concern among some

that the "human quality" of the learning environment may be diminished. As has been stated previously by Gagne (1968) it is not the media which is dehumanizing it is the use of the media which can prove to be either inhibiting or enhancing to a learning environment (Offesh, 1968). The individualized explosion approach to learning as well as the knowledge explosion have forced educators to search for new methods of acquiring, assembling, analyzing, and disseminating the overwhelming load of facts and ideas emanating from all sources.

CHAPTER IX

EVALUATION

Introduction

The use of federal monies in the implementation of new educational programs has focused unprecedented attention on the increasing significance of accountability. Evaluation of new educational models and research projects prior to either wide-spread adoption or deletion is a part of the accountability thrust. Ralph Tyler (1971, p. 2) in the introduction of Provus' book entitled Discrepancy Evaluation describes evaluation as:

...a continuous process that goes on in cycles as ideas emerge and are explored; as educational objectives are formulated, defined, and critically examined; as learning experiences are developed to help students attain these objectives and evaluation devices and procedures are worked out to appraise the progress of students toward them; and as the evidence is reviewed regarding both the problems of implementing the program plans and the achievements of students.

The designer of the year-round school curriculum recognizes evaluation as an integral part of curriculum development and instructional improvement. This continuous evaluation provides a basis for making judgments during the dynamic stages of growth. Inherent in this recognition is the need for a systematic procedure to evaluate the design, the implementation procedures, and program objectives which establishes performance criteria for program recipients.

The Discrepancy Model

Upon reviewing evaluation procedures and models the designer has selected Malcolm Provus' Discrepancy Model for assessment of the year-round curriculum design. In the model Provus (1971, p. 37) recognizes:

- (1) the natural developmental stages of any new program;
- (2) the necessity of evaluation activity appropriate to each stage;
- (3) and the administrators dependence on information obtained by evaluation to make timely, defensible decisions.

Developed by the research staff of the Pittsburgh Public Schools the Discrepancy Evaluation Model posits five stages of evaluation: design, installation, process, product, and cost. At each of these stages a comparison is made between reality and some standard. The difference shown in comparison between reality and the standard is called discrepancy. Information concerning the discrepancy is provided the program staff and adjustments may then be made in the program on a rational basis.

Prior to making a comparison a standard will be established. The standard established for installation, process, and product is the design of the program in Stage One. The standard against which the reality of the design is compared in Stage One is a set of design criteria. According to Provus (pp. 48-58) the following procedure is used to obtain the reality of the design.

- (1) Schedule a program design meeting for all levels of program staff.
- (2) Prepare a set of questions to elicit specific information regarding the program.
- (3) Organize small division groups to respond to questions designed by evaluator.
- (4) Synthesize information from all discussion groups into the program design. This information becomes basis for further evaluation of program.

The following procedure will be used in evaluating the year-round

curriculum design.

(1) After the design is operational there will be a comparison between the operation and the design intent and significant deficiencies will be noted. In analyzing the deficiencies a decision will be made regarding whether adjustment should be made in the design or the implementation.

(2) In this discrepancy model the relationship between process and interim product is investigated.

Summary

Periodic evaluation is of special significance in programs which involve both curriculum design and implementation. In the year-round curriculum design it is important to evaluate each component in terms of design elements and implementation strategies. In evaluating the design there is concern for process, interim, and terminal goals.

CHAPTER X

FROM THEORY TO PRACTICE

Implementation

With the increasing use of technology, management sciences are used more extensively in business and government to plan, chart and schedule operations. Recently educators have begun to use systems from the management sciences in order to employ more precise methods of accountability. These systems include such concepts as the Program, Planning, Budgeting System (PPBS), Program Evaluation Review Techniques (PERT) and Critical Path Method (CPM). Granger (1971, p. 128) specifies five benefits derived from using a systematic planning and scheduling procedure in the implementation of a project:

- (1) reduces input omissions
- (2) permits better coordination of special projects
with ongoing operations
- (3) reduces probability of wasted resources
- (4) reduces tying up of capital
- (5) reduces the delay of production schedules.

Currently there are more than ninety scheduling techniques used for efficient planning productive processes. Major education projects are planned and monitored by these techniques. The scheduling procedure used for the implementation of the year-round school is the Critical Path Method (CPM). A simplified version of PERT which was developed by the Navy as a process for controlling the development of the polaris missile, the Critical Path Method (CPM) provides a pictorial graphic model of the

major steps in the implementation of a program. Horowitz (1967, p. 3) defines the Critical Path Method (CPM) as "a system for planning, scheduling, and controlling a project."

Steps which are necessary to complete the project are depicted on a graph called a network. By analyzing the network one can determine the tasks to be completed, tasks which may occur concurrently, and also identify the tasks which must occur after the completion of other tasks. Some operations may be done simultaneously; a small number of operations control the time needed to complete the project. These controlling operations (critical operations) comprise a chain of events in the network which is called the Critical Path.

Advantages of the Critical Path Method

Being aware of the Critical Path of a project helps the educator answer questions concerning time required for completion, identifying activities which delay a project, and analyzing various aspects of the project to reduce costs. Horowitz (1967, p. 10) lists other advantages of CPM as:

- (1) Showing relationships between various jobs and the dependency of one job on another.
- (2) Providing a vehicle for more effective planning.
- (3) Providing greater precision in identifying problem areas.
- (4) Improving communication by providing a graphic depiction of tasks to be completed and the progress and control of the project.
- (5) Helping determine the most effective use of personnel, equipment, materials and other resources.
- (6) Focusing attention on critical operation.
- (7) Providing administrators with a means of studying alternate courses of action.

Using systematic planning also provides a more precise means of accountability.

Steps in Implementing Design

The Critical Path Method (CPM) will be used in implementing the curriculum design for the year-round school. The following steps [as adapted from Horowitz (1967)] will be followed in designing a plan for implementation of the design.

- (1) By analyzing the components of the design individual tasks or activities will be determined for each department.
- (2) The sequence of operations will be depicted on a network.
- (3) A time estimate will be made for the completion of each activity.
- (4) The Critical Path of activities will be determined showing the chain of interdependent activities.
- (5) A schedule will be developed for the project.
- (6) The schedule will be used to control and monitor the project.
- (7) After assessment of progress the schedule may require revision and updating.

Personnel identified as implementors of the design include staff members having expertise in curriculum development, representatives from administrative planning, building, planning and construction, staff selection and training, and the purchasing department. Activities for each of these areas are sequenced, working time and cost is estimated, and the implementor responsible for conducting each activity is identified on the activity planning charts (Tables II-V). For a point of reference personnel titles from the Tulsa Public Schools staffing organization is used. A glossary of key terms (Table I) is included. Also included is a graphic representation (C.P.M. network, Figure 9) of the planned sequences, interdependencies, and interrelationships of all

TABLE I
GLOSSARY OF KEY TERMS

Term	<u>Critical Path Method (CPM)¹</u> Definition
1. Activity	An operation, procedure or task required for the accomplishment of an event.
2. Activity Duration Estimate	The estimated time required to complete an activity. Usually calculated by working days, but could be slated in minutes, hours, weeks or any <u>uniform measure of time</u> .
3. Activity Planning Line	A group of related activities, usually the responsibility of a single department or individual, for which a separate activities plan is to be prepared.
4. Critical Activity	An activity whose duration cannot be increased without delaying the total project.
5. Critical Path	The sequence of events and activities through a CPM network which requires the greatest total completion time. The duration of these activities therefore determines the minimum completion time and the project finish date.
6. Dependent Activity	An activity which cannot start until a particular event preceding it has occurred.
7. Dummy Activity	An activity of zero duration which represents no work but depicts the dependency of a successor activity on a predecessor event. A dummy activity is represented by a dotted line in a CPM network.
8. Early Finish Time	The earliest time that an activity is expected to be completed.
9. Early Start Time	The earliest time that an activity may be started pending completion of precedent activities.

TABLE I (Continued)

Term	<u>Critical Path Method (CPM)¹</u> Definition
10. Event	The beginning or ending of an activity; a specifically definable point of accomplishment in a CPM network. An event has no time dimension or duration but simply marks the transition point between activities.
11. Free Float	The time period by which the execution of an activity can be delayed without delaying the completion of the project. Determined by the net difference in time units between Early Start and Late Start or between Early Finish and Late Finish.
12. Gantt Chart	A horizontal bar graph representing the duration and sequencing of activities in a project. (Originally developed by Henry Gantt.) Also known as a "Bar Chart" or "Time Control Chart."
13. Late Finish Time	The latest time that an activity can be completed without delaying the scheduled completion date of the project.
14. Late Start Time	The latest time that an activity can be started without delaying the scheduled completion date of the project.
15. Network	A graphic representation of the planned sequences, interdependencies and interrelationships of all activities and events which must be accomplished to reach the project objective.
16. Network Activity Analysis Report	A computer-generated sequential listing of activities, together with sufficient information about each activity to facilitate the monitoring of the project operations.
17. Node	The technical name for the circle used in a CPM network to represent an event. Nodes serve as junctions indicating the start and finish of activities, which are shown by connecting lines.

TABLE I (Continued)

Term	<u>Critical Path Method (CPM)</u> ¹ Definition
18. Objective	A statement of the measurable or observable conditions which are to exist when a project is completed.
19. Project	An undertaking composed of individual activities and events which must be completed in a logical sequence to achieve the specified objective. A project must have a <u>definite</u> starting and ending point or date. CPM is ideal for one-of-a-kind projects but is not applicable to ongoing, repetitive operations.
20. Project Completion Date	The anticipated date when all activities will terminate in the achievement of the project objective.
21. Project Starting Date	The scheduled date when the first activity is to begin in the sequence of activities and events leading to the project objective.

¹Key terms as defined by Joseph Horowitz, Critical Path Scheduling: Management Control Through CPM and PERT. New York: The Ronald Press Company, 1967.

TABLE II
ACTIVITY PLANNING LINE: CURRICULUM DEVELOPMENT

Activity Planning Line		Curriculum Development			Series # 300
Event Node Start	Activity	Event Node Finish	Duration Estimate (Number of working days)	Cost Estimate for This Activity	Implementor (Individual responsible for conducting this activity)
95	Organize Task Force	305	3 days	\$ 0	Director, Elementary Schools
305	Review Design Components	310	2 days	\$ 184	"
310	Assess Needs	315	10 days	\$ 920	"
315	Organize Citizen Advisory Group	320	3 days	\$ 0	"
320	Form Curriculum Development Team	325	2 days	\$ 184	"
325	Prepare Educational Specifications for Building	330	3 days	\$ 276	"
330	Inventory and Evaluate Existing Instructional Materials	335	2 days	\$ 322	"
335	Assess Curriculum Material Needs	340	3 days	\$ 483	"

TABLE II (Continued)

<u>Node Start</u>	<u>Activity</u>	<u>Finish</u>	<u>Duration Estimate</u>	<u>Estimate</u>	<u>Implementor</u>
340	Requisition Vended Instructional Materials	345	3 days	\$ 483	"
345	Requisition State Textbooks	350	2 days	\$ 322	Principal
350	Develop Supplementary Instructional Materials	355	40 days	\$ 6,480	Dir. of Elem. Curriculum
355	Print and Label Supplementary Instructional Materials	360	20 days	\$ 636	"
360	Curriculum Materials Ready for Use	900	0 days	\$ --	---
			days	\$	
			days	\$	
			days	\$	
			days	\$	

TABLE III

ACTIVITY PLANNING LINE: ADMINISTRATION

Activity Planning Line		Administrative Planning			Series # 100
Node Start	Activity	Node Finish	Duration Estimate	Cost Estimate	Implementor
90	Begin - Start of Project	95	0 days	\$ 0	Director, Elementary Schools
95	Inform public of year-round program - plan for enrollment	105	22 days	\$ 0	"
105	Design tentative grouping scheme	110	22 days	\$ 0	Principal
110	Enroll Students	115	16 days	\$ 0	"
115	Conference with parents, students and teachers	120	14 days	\$	
120	Conference with staff	125	10 days	\$	
125	Conference with university staff personnel	130	5 days	\$	
130	Enrollment completed - school opened	900	days	\$	

TABLE IV
ACTIVITY PLANNING LINE: BUILDING, PLANNING AND CONSTRUCTION

Activity Planning Line		Building Planning and Construction			Series # 200
<u>Node Start</u>	<u>Activity</u>	<u>Node Finish</u>	<u>Duration Estimate</u>	<u>Cost Estimate</u>	<u>Implementor</u>
95	Employ architect (Board of Education)	205	1 days	\$33,750	Superintendent
205	Examine site with architect	210	1 days	\$ 0	Dir. of Bldg. and Planning
210	Review educational specifications with architect	215	10 days	\$ 0	"
215	Prepare preliminary building plans	220	45 days	\$ 0	"
220	Review preliminary building plans	225	10 days	\$ 0	Asst. Supt. for Business Mgmt.
225	Approve preliminary building plans	230	10 days	\$ 0	Superintendent
230	Prepare complete working drawings	235	60 days	\$ 0	Dir. of Bldg. and Planning
235	Secure bids from prospective contractors	240	21 days	\$ 0	"
240	Award contract for construction of building	245	1 days	\$ 0	Superintendent

TABLE IV (Continued)

<u>Node Start</u>	<u>Activity</u>	<u>Node Finish</u>	<u>Duration Estimate</u>	<u>Cost Estimate</u>	<u>Implementor</u>
245	Construct building	250	180 days	\$675,000	Dir. of Bldg. and Planning
250	Building inspected and approved	255	5 days	\$ 0	
255	Prepare and occupy building	900	20 days	\$ 0	Asst. Supt. for Business Mgmt.
			days	\$	"
			days	\$	
			days	\$	
			days	\$	
			days	\$	
			days	\$	

TABLE V

ACTIVITY PLANNING LINE: PURCHASING

Activity Planning Line		Purchasing			Series # 400
Node Start	Activity	Node Finish	Duration Estimate	Cost Estimate	Implementor
230	Prepare furniture and equipment requisitions	405	10 days	\$ 0	Asst. Supt. for Instruction
405	Approve furniture and equipment requisitions	410	15 days	\$ 0	Asst. Supt. for Business Mgmt.
410	Consolidate furniture and equipment lists and prepare for bidding	415	20 days	\$ 0	Dir. of Purchasing
415	Receive furniture and equipment bids from vendors	420	15 days	\$ 0	"
420	Screen furniture and equipment bids and recommend purchases to Board	425	22 days	\$ 0	"
425	Secure Board approval to purchase furniture and equipment as recommended	430	11 days	\$100,000	"
430	Receive, assemble and install furniture and equipment	435	130 days	\$ 0	"
435	Secure price quotations from vendors of instructional materials	440	20 days	\$ 0	"
440	Issue purchase orders for vendored instructional materials	445	20 days	\$ 75,000	"

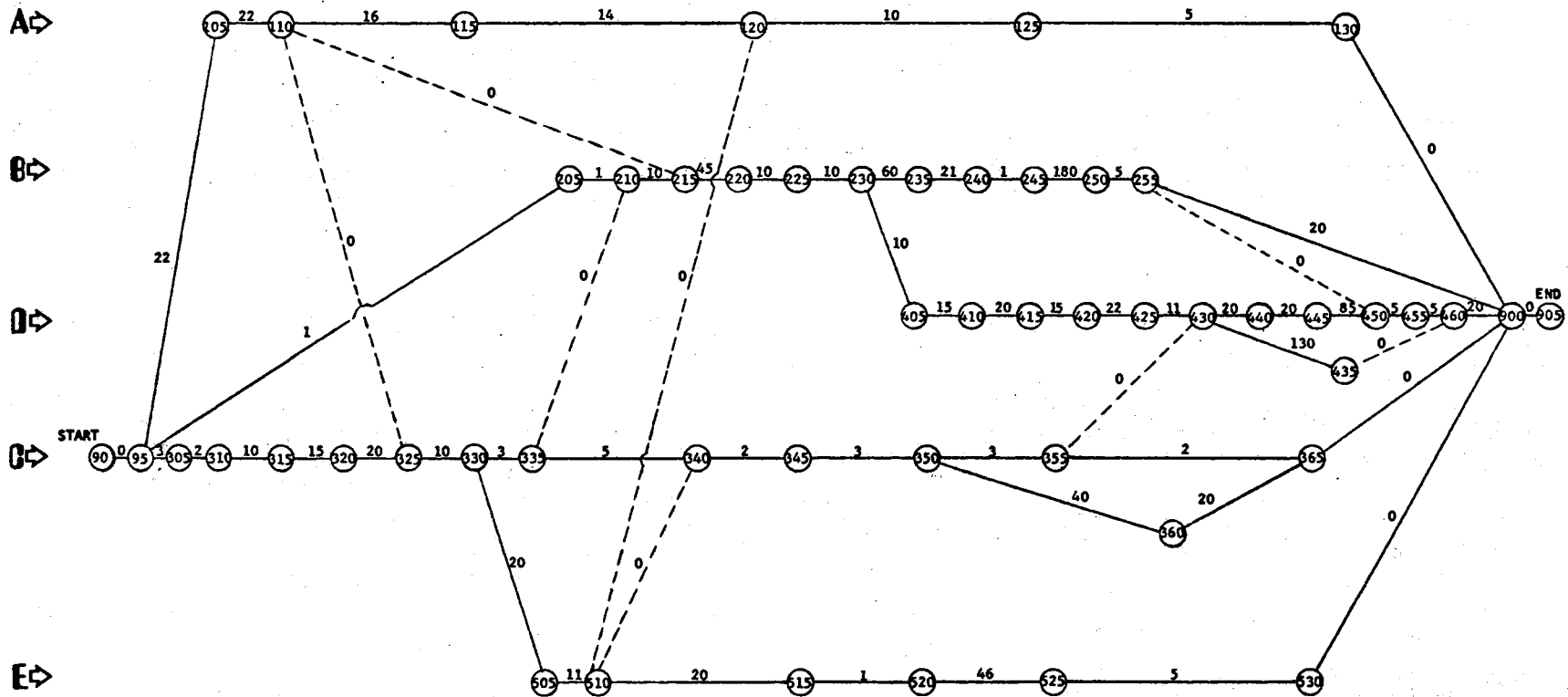
TABLE V (Continued)

<u>Node Start</u>	<u>Activity</u>	<u>Node Finish</u>	<u>Duration Estimate</u>	<u>Cost Estimate</u>	<u>Implementor</u>
445	Receive vendored instructional materials	450	85 days	\$ 0	"
450	Distribute instructional materials	455	5 days	\$ 0	"
455	Stock and label instructional materials	460	5 days	\$ 0	Principal
460	Deliver furniture and equipment	900	20 days	\$ 0	Dir. of Purchasing
			_____ days	\$ _____	_____
			_____ days	\$ _____	_____
			_____ days	\$ _____	_____
			_____ days	\$ _____	_____
			_____ days	\$ _____	_____

TABLE VI

ACTIVITY PLANNING LINE: STAFF SELECTION AND TRAINING

Activity Planning Line	Staff Selection and Training	Series #			
Node Start	Activity	Node Finish	Duration Estimate	Cost Estimate	Implementor
330	Advertise principal's position	505	20 days	\$ 0	Assistant Supt. for Personnel
505	Review applicants and name principal	510	11 days	\$ 0	Superintendent
510	Advertise team leader positions	515	20 days	\$ 0	Assistant Supt. for Personnel
515	Select team leaders	520	1 days	\$ 0	Principal
520	Cooperating university for assigned personnel	525	1 days	\$ 0	"
525	Employ total staff	530	46 days	\$ 0	"
530	Inservice staff	900	5 days	\$ 4,795	Curriculum Development
900	All personnel selected and operative	905	0 days	\$ 0	
	Year-Round school opened		0 days	\$ 0	



A ADMINISTRATIVE PLANNING

B BUILDING PLANNING AND CONSTRUCTION

C CURRICULUM DEVELOPMENT

D PURCHASING PLANNING

E STAFF SELECTION AND TRAINING

Figure 9. Flow Chart CPM Network

activities and events which must be accomplished to reach the project objective.

Summary

The use of system management strategies has become more prevalent in public schools. Cited as a major benefit accruing from the use of a system such as the (CPM) is the improvement of methods of accountability. Who is responsible for the performance of designated tasks during a pre-determined time span is a question of special interest in management. The (CPM) will provide a graphic description of the chain of events and the interrelation of the activities involved.

CHAPTER XI

SUMMARY

The concept of the year-round school if viewed only from the perspective of expanding the school calendar is insignificant. Therefore, the problem identified for this study has two facets: an assessment of unique curriculum design needs in terms of a year-round educational program and the development of a curriculum design to accommodate not only these unique needs but also other needs inherent in the curriculum design problem.

Unique design needs identified as relevant to a year-round educational program are: a curriculum to accommodate multi-entry points; an organizational scheme in terms of scheduling and attendance options which promotes public acceptance of a year-round program; the need to reduce the number of "teacher encounters" which a pupil may have during the entire year; and the need for special legislation to provide funding for the operation of a year-round educational program.

In the design multi-entry points are accommodated by the inclusion of the continuous progress program. Public support is assured by designating the year-round school as an alternative school featuring volunteer enrollment. The number of teachers which a pupil encounters during the year is reduced by using a differentiated staffing model comprised of a

This is a compilation of unique needs identified in case studies reviewed.

team of teachers in which a coordinator and part of the team remain for the entire year. The need for legislative support is recognized by including recommendations (p. 9) relevant to legislation made by the participants at the second national seminar on year-round education.

In developing a curriculum design for the year-round school attention is focused on four components identified by Venable (1967) as fundamental necessities for the existence of curriculum: the learner, subject matter or content, the learning process and the teaching agency. Curriculum needs in each of these components are identified in terms of philosophical, sociological, psychological and theoretical positions. These identified needs provide the conceptual framework upon which assumptions are made and serve as a basis for a logical analyses of the interrelationships existing between the components. Theoretical strategies pertaining to a systems approach to implementation are also used.

Philosophical needs are concerned with the nature of man (ontology), the nature of values (axiology), and the nature of knowledge (epistemology). Endorsing a pragmatic view the designer recognizes man as being neither free nor determined. Reality is defined as the reaction of the human being to his environment. The pupil is regarded by the pragmatist as an active organism who is continually interpreting and reconstructing his experiences. The year-round curriculum design recognizes the pragmatic view of the nature of the child by providing problem solving experiences in interest centers and emphasizing the process skills during each instructional phase.

Needs in the sociological and axiological realms are accommodated by recognizing the prevalency of diversity in society and adopting the pragmatist position that values are relative and may change as societies and

cultures change. In concurrence with this belief the design provides a systematic procedure for parents to have input concerning what they value in terms of an educational program. Recognizing the increasing mobility of society the design provides for attendance options and multi-entry points. Also included is a content area dealing with problems of personal development and environmental improvement.

From a psychological perspective needs are identified in terms of three domains of human behavior. The design recognizes these domains in the organization of daily learning activities (horizontal organization) with different emphases for varying age levels of pupils. For example, the affective domain receives the greatest priority in the orientation phase (ages 5-7), the cognitive domain is emphasized during the exploratory/reinforcement phase. During this phase the continuum of skills for reading and mathematics is introduced. As the pupil becomes increasingly more emotionally independent during the quest phase, the affective domain in which valuing and decision making are emphasized again receives priority.

Evaluation is recognized as an integral part of the design. Using Provus' Discrepancy Model both the design and the implementation will be evaluated. In evaluating the design there is concern for process, interim, and terminal goals.

Both the evaluation process and the strategy designed for implementation are a part of the theoretical dimension.

Recently educators have begun to use systems from the management science or system theory in order to employ more precise methods of accountability. In designing implementation strategies for the year-round curriculum design a systems approach, The Critical Path Method

(CPM), is used. Advantages of the CPM include showing relationships between tasks, providing a vehicle for planning, precisely identifying problem areas, improving communication by a graphic depiction of a time schedule of activities, and focusing attention on the critical operation in terms of more effective use of personnel, equipment, materials and other resources.

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