DOCUMENT RESUME

ED 081 759 SP 006 901

AUTHOR DeBloois, Michael L.
TITLE The Development of New Instructional Models.
SPONS AGENCY Bureau of Educational Personnel Development (DHEW/OE), Washington, D.C. Div. of Assessment and Coordination.
PUB DATE [71]
CONTRACT OEC-0-71-3343
NOTE 127p.

EDRS PRICE MF-$0.65 HC-$6.58
DESCRIPTORS *Inservice Education; Instruction; *Instructional Materials; *Instructional Technology

ABSTRACT

In the general areas of in-service training and curriculum development, a significant level of innovation has occurred over the past decade. New and promising instructional models have been designed and are being implemented that offer alternatives to the traditional models used for the public schools. The purpose of this study is to identify and describe various new instructional models, to interrelate the diverse components of the different models, and to identify a set of variables that are common to each of the new models. Models can be categorized according to a) general purpose, b) environmental setting, c) decision patterns, d) student grouping patterns, e) instructional group settings, f) teaching focus, g) staff functions, h) teaching methods implied by the model, i) time usage prescribed, j) sociopsychological factors, and k) evaluation structures. (Author/JB)

The Development of New Instructional Models

Dr. Michael L. DeBloois

Florida State University

This study was performed under Purchase Order No. OEC-0-71-3343, Bureau of Educational Personnel Development, Department of Health, Education and Welfare, Office of Education

Table of Contents

List of Tables

THE DEVELOPMENT OF NEW INSTRUCTIONAL MODELS

Introduction

Objective of this study

In the general area of inservice training and curriculum development a significant level of innovation occurred over the past decade. A variety of new and promising instructional models have been designed and are being implemented which offer alternatives to the traditional models used for the public schools. The purpose of this study is to identify and describe various new instructional models, to interrelate the diverse components of the different models, and to identify a set of variables which are common to each of the new models.

Reform efforts in education have typically been piecemeal and located within only one or two of the sub-systems of the entire school program needing change, and there has been a pervasive lack of awareness of the necessity of tight coordination. Certainly individuals who conceptualize a new model for decision making, or invent a new scheduling process deserve encouragement, but their mere promise that these changes will improve the educational process to any extent is not sufficient; the revision of these sub-components will yield very little unless they are, as Briggs suggests (1971), related to each other and to the larger picture of schooling and education. The problems facing public education call for a cooperative interaction of the various elements of an educational system, where gains in the coordinated efforts may be greater than the gains of the independent endeavors of the separate elements. Educators have with astigmatic self-security been reaping the small gains of independent efforts; we must now, however, begin to move toward a strategy of innovation which considers the comprehensive view of a school system and a more systematic approach to educational change. Perhaps we should listen more closely to suggestions like those offered by the Center for Coordinated Education at the

University of California, Santa Barbara (1966), and plan changes in our educational sub-systems so that the orchestration of these interrelated innovations results in development of a synergism.

This report describes various new instructional models being developed; it may be complimented with other studies to form a fairly comprehensive statement of reform strategies for educational improvement.

Methods and Sources

A very simple design, dictated by the funding source, was used in this study, which required an extensive search of the literature related to the development of new educational instructional models, an analysis of the various models, and the conceptualization of a framework of variables found in the models which were identified.

The literature search was designed to yield a comprehensive list of new instructional models. Proliferating a long list of identical models, which differed perhaps in name only, was not considered important. Once all of the models which appeared to be unique had been selected, the investigator considered each separately and identified the variables which indeed made it unique. A detailed search of all related ERIC documents was made, Dissertation Abstracts was surveyed, as was the Educational Index, The Current Index to Journals of Education, The Reader's Guide to Periodical Literature, The Cumulative Book Index, and The Subject Guide to Books in Print. An extensive survey of the bibliographies of related education monographs was also carried out. The descriptors used in the study for identifying relevant sources of information were:

Independent Study	House Plan
Continuous Progress	Inter-disciplinary Curriculum

Advanced Placement
Ability Grouping
Performance Contracting
Individually Prescribed Instruction
Individually Guided Education
Middle School
Amphitheater Schools
The Stoddard Plan
Multi-unit School
Portal School
School-within-a-school
Non-graded School
Computer Assisted Instruction
Programmed Instruction
Daily Demand Schedule
Team Teaching
Parkway Plan
Sidewalk School
Store Front School
Three-tiered School
Differentiated Staffing
Flexible Scheduling
Street Academy

Descriptors were also identified to discriminate between the literature relevant to this study, and related areas which are being considered in other independent investigations.

The descriptors of non-relevant sources included:

variables of change process
dissemination and diffusion
commitment
community based change agencies
recruitment
educational reward system
role of local education agencies
role of state education agencies
development of new teacher talent training models
research and development efforts
educational needs assessment

The literature search resulted in a bibliography of more than 1000 related articles, reports, monographs, films and working papers. These were subsequently examined for their content, and through the use of the form found in appendix A, were screened for their value to the study. Consequently, those which were considered highly relevant became the data source for this report and appear in the bibliography.

Reporting Format

An analysis of the literature convinced this author that the development of an instructional model is based on the manipulation of rather standard components of an educational system. Considerable investigation of a variety of educational innovation and a two-year conceptual study of staffing innovation

has led to the adoption of a system for describing and classifying instructional models. Stogdill (1966) and Burns (1964) influenced this author's definition of model building and model analysis. The components which might be considered sub-systems of an instructional model, have been grouped into eleven categories. Gibbons (1971) identifies 15 components of individualized instruction which proved to be useful in arriving at these categories. This investigator modified the classifications suggested by Gibbons and borrowed from a conceptual framework of organizational structural innovations (DeBloois, 1970), and from a system for analyzing resource utilization (Beard, et al, 1971) to arrive at the eleven categories listed below:

1) General model purpose
2) Environmental setting of model
3) Decision patterns established by model
4) Student grouping patterns prescribed by model
5) Instructional group settings
6) Teaching focus of model
7) Staff function implied by model
8) Teaching methods implied by model
9) Time usage prescribed by model
10) Socio-psychological factors suggested in model
11) Evaluation structures provided in model

In section I, various new instructional models are identified. The criteria are given which were used to distinguish full-blown instructional models from change strategies or from sub-components of an instructional model. Section II describes in some detail each model which was identified in section I. These descriptions included a comparison of the various models across eleven components of an instructional system listed above. Section III contains a glossary of innovations or instructional model sub-systems which are being developed, but which do not meet the criteria established for their being considered a new instructional model. This section could be considered a smorgasbord of strategies one might adopt to develop a new instructional model. Since the designation of what comprises a new model was established somewhat arbitrarily by this author, some innovations found in Section III may be

considered out of place by the reader. If the innovation in question does not restructure the elements of at least 3/4 of the category headings listed in Table II, it is not considered a new instructional model.

SECTION I

IDENTIFYING THE COMPONENTS OF AN INSTRUCTIONAL MODEL

Educators across the country are asking themselves what can be done to improve instruction and increase gains made by students as they engage in learning. These questions frequently result in hypotheses which suggest a better way. Although there may be no empirical basis for believing that a given change in the way education has proceeded in the past will result in additional learning, the hypothesis may offer considerable promise because of its inherent logic, or as a result of its unique conception, having grown out of an assessment of a felt need.

The literature abounds with these hypotheses which contain what may be called face validity due to their possessing a cohesive system of logic. A problem most educators face is the vast range of individual differences existing within a group of youngsters. Related to that is the typical school's inability to diagnose the learning needs of each individual child. A reasonable hypothesis might suggest a survey of the classroom student population to find those children who appear to be similar, followed up by a change in the student grouping pattern so they may be clustered together to receive a common strand of instruction geared to the identified need level of that group. It's logical, and one might assume that it poses an alternative to the traditional heterogeneously grouped classroom which will result in additional learning. Before one seeks to validate such a hypothesis empirically, there is a prior step of conceptual validation. Does the hypothesis include a critical mass of variables capable of producing enough "voltage" to achieve the desired objectives? Homogeneous grouping has not been proven to accomplish that which seems so apparent in its rationale. Empirically, the hypothesis has not yet been substantiated. It may be that insufficient "power" is generated to

produce the desired gains.

Does homogeneous grouping qualify as a new instructional model? Some individuals think it does, and use this hypothesis as a core for redesigning instruction. Others, including this author, believe that it is not a model of instruction in the larger sense of the term. We contend that certain criteria must be met before the act of modeling is complete. Perhaps a simple analogy will illustrate this point. A model airplane, an object which occupied many of today's educational leaders' leisure time when they were children represented, usually in a general way, but frequently in great detail, an actual aircraft. Although the model seldom could not sustain flight, and had no passenger-carrying capacity, it provided its builder a great sense of familiarity for the real thing. He could observe balance and proportion, and was able to learn the relationship of the various parts to each other. The builder gained some principles of aircraft construction and often learned of the actual functioning of the parts of the aircraft he was modeling. Wartime news accounts of shattered gunner turrets, fractured landing struts, or a crew returning from a raid on the only remaining of the craft's four engines often imparted real meaning to the listener as a result of having manipulated a model of the craft in question.

Perhaps this is too simple an analogy, and since it is an analogy, it undoubtedly has points which incite questions regarding its appropriateness; but hopefully it demonstrates a principle of model building which is important to this study. A model is a complete system, composed of many sub-systems and components. A wing strut or a windshield may be considered independently of a model airplane, but when the context is model airplane building, the wing strut or windshield is obviously a component of the model. Educational sub-systems also exist separately of an educational model, and may be considered independently, but confusion results when they are listed parallel with complete models.

747's, 727's, 707's, and electrical systems might indeed by modeled in their own right; while three of the models are complete and capable of sustaining flight, the fourth, however complete, would have considerable difficulty getting off the ground unless it was incorporated into the whole as a vital sub-system. When I refer to a 747, one can assume there is a sub-system called an electrical system. However, when I refer to an electrical system, the macro-system is not assumed.

This establishes some ground rules for reporting on new instructional models. The context is instruction, and the model should depict a system of instruction which is more or less complete. For the purpose of this report, parallel classification strategies will be maintained; that is, when models of instruction are considered, they will be described and contrasted in terms of their sub-systems and component parts. When sub-systems are being described, a rationale will be given why they were not considered an instructional model, and the various components present and those not present will be specified.

Ideally, a report on the development of new instructional models would be based on evaluations of the models on-site, using sophisticated analysis procedures. Then the investigator could place levels of confidence on the data being reported, uncover relationships among variables which exist but which were not believed to exist, and demonstrate the absence of relationships which were believed to be. Short of this rather idealistic approach, the investigator could develop comprehensive procedures to survey educational innovators and ask them to describe the latest developments in the area of model conceptualization. Here the investigator would not have to reply on literature which is always somewhat dated--and in the case of this study of identifying new instructional model developments--hopelessly obsolete.

Few of us are able to come up with optimum situations. This author was forced to rely on his recent exposure to a fairly representative and reasonably

large number of instructional innovations, and use that level of awareness to ferret out others with which he had no previous contact.

The personal experience of the author proved to be valuable in designing the literature search, deriving the descriptors, and making judgements regarding the appropriateness of the data being collected. Unfortunately, the indices to educational and instructional literature do not contain a category: instructional models, and a search in this area required painstaking haystack combing to uncover the instructional models or model components relevant to the study. Discriminations between models and components were always very difficult, and continue to pose a problem even in this reporting stage of the study.

The literature search and the subsequent analysis of the data gathered reveals a real dearth of new instructional models. Innovative components of instruction exist in great variety and number, but rarely are they conceptualized as meaningful and somewhat comprehensive systems or models of instruction which are different from the standard instructional models which have been with us for so long. Certainly the results of this search for new instructional models adds credence to the rationale of the Office of Education's Alternative Schools Program which in its rationale, claimed that alternatives to present educational practices were not sufficient--alternative schools were necessary to make an impact on the system (University of Massachusetts, 1971).

The left hand column of table I lists the models of instruction which have been identified. Across the top of the matrix appear the categories of instructional model components which may be manipulated in order to improve instruction. This matrix may be used as a crude means of discriminating among the Instructional Models reported here. A more complete description of these variables is provided in table II which will be completed for each instructional model in section II. A couple of examples may demonstrate why this method of reporting

TABLE 1

NEW INSTRUCTIONAL MODELS

NEW INSTRUCTIONAL MODELS	MODEL EMPHASIS	Instructional use of space	Instructional use of time	School personnel utilization	Curriculum revision	Teaching methodology used	Instruc. decision-mak. patterns	Evaluation structures	Community resources	Socio psychological factors
Leicestershire Schools		S	S	S	P	P	P	S	S	P
Non-graded School Appropriate Placement School Continuous Progess Plan		S	S	P	P	S	S	O	S	S
School-Within-A-School House Plan		S	S	P	P	S	P	S	S	S
Flexibly Staffed School Differentiated Staffing		S	P	P	S	S	P	P	P	P
Multi-Unit School Individually guided Education		S	S	P	S	P	P	P	P	S
Three-Tiered School		S	S	S	P	P	P	S	P	P
Philadelphia Parkway Program School Without Walls		P	P	P	S	S	P	S	P	S
Middle-School		S	S	S	P	S	S	S	S	P

P = Primary Emphasis
S = Secondary Emphasis
O = No Real Emphasis

TABLE 1.1 A COMPONENT CHECK-LIST FOR _____

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
			open concept learning areas
			traditional space structures
			flexible classroom use
			resource centers
			student commons
			out-of-classroom instruction
			ocean/shore
			mountains/desert
			urban/rural
			community facilities use
			INSTRUCTIONAL USE OF TIME
			traditional 5-7 period day/structured elementary school day.
			block scheduling
			daily demand scheduling
			open schedule
			year around school
			extended school day
			SCHOOL PERSONNEL UTILIZATION
			traditional staff use(all certified equally)
			team teaching
			interdisciplinary teaming
			use of instructional aides
			older students teaching younger students
			differentiated staffing
			using community volunteers (non certified)
			teacher role specialization
			involvement of teaching staff in instructional decision-making

TABLE II

A COMPONENT CHECK-LIST FOR _____

_____

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
			standard big 4 curriculum: Math, Science, English, Social Studies
			core curriculum
			interdisciplinary curriculum
			occupational/vocational
			sociological problems oriented
			student centered
			student mastery of verbal information
			student mastery of intellectual skills
			student cognitive skills development
			student attitude development
			INSTRUCTIONAL MANAGEMENT
			standard class-size student groups
			homogeneous grouping
			variable grouping
			flexible grouping
			advanced placement
			ability grouping
			performance based instruction
			individually prescribed instruction
			criterion referenced testing
			time based instruction
			norm referenced testing
			continuous student progress
			age-grade student progress
			student paced learning
			student selection of materials
			student selection of instructional methods
			teacher paced learning
			teacher selection of materials
			teacher selection of instructional methods
			materials paced learning
			situational selection of pace, materials, and methods
			individually guided motivation
			student involvement in instructional decision making

TABLE II

A COMPONENT CHECK-LIST FOR _____

_____

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
			computer assisted instruction
			audio-tutorial instruction
			programmed instruction
			programmed instructional T. V.
			computerized games
			auto-adjunct instruction
			lecture/assignment/feedback
			Idiosyncratic Systems
			open laboratory experiences
			independent study
			self directed learning (free learner concept)
			learning contracts (contingency management)
			quest or project activity
			Group Inquiry Systems
			inductive teaching
			simulation and games
			socio-drama and role playing
			collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
			student self actualization
			self actualization of instructional personnel
			interpersonal competence
			communication
			teacher professionalism
			COMMUNITY RESOURCE USE
			parental involvement
			non certified professionals used in instruction
			community facilities use
			public agencies
			private agencies
			community controlled schools
			proprietary schools

TABLE II

A COMPONENT CHECK-LIST FOR _____

An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
			student self evaluation
			multidimensional performance based assessment by teachers
			class achievement ranking by teacher
			no assessment
			teacher evaluations
			teacher self assessment
			criteria based assessment by superior, peers, and subordinates
			intuition based administrative ratings
			no assessment
			program evaluations
			program evaluation based on program objectives (cost effectiveness)
			accountability assessment (evaluation of outcomes against objectives)
			program evaluations based on standard student achievement indices
			intuitive administrative ratings of program
			no assessment

was adopted. During the past ten years a controversy has raged over the issue of reorganizing the staffing patterns of public schools. The concept of team teaching--where two or more teachers join together in the planning, organization, installation and evaluation of an instructional program (Canady, 1969)--was an early method, (and one which still persists) to accomplish this task. Throughout the literature this innovation is hailed as a new model for instruction. In a few locations it has been implemented in its "pure" form. In many sites teachers have combined their classes and take turns carrying out the instruction of the same traditional classroom which is suddenly twice as large. Regardless of how much integrity is lost as the concept is implemented, the point is, that even in its most optimum form, team teaching remains one small change in a traditional model of instruction. Team teaching, as it is defined in the literature, can exist with little conflict within a conventional system of instruction. Identical omnicapable teacher units can be paired, to direct a standard departmentalized or grade level unit of curriculum within the same rigidly constructed schedule, for basically the same student grouping pattern. Student input into instructional objectives need not take place, selection of materials needn't change, the pace of instruction is not necessarily affected, and the whole question of method of instruction is left open. Then there is pre-testing, prescription, grading, motivation, promotion, achievement criteria, etc., all of which may remain unaffected by the adoption of the team teaching concept. Obviously the concept is a strategy for bringing about change, and the logic gurding up the concept suggests that gains should be made. But they have been limited, and the problems surrounding the implementation of a team

structure have been myriad. An analysis of the history of the team teaching movement suggests that while many educators believed they were indeed designing a new instructional model, most failed to realize the simple fact that changing a staffing structure is but one small part of changing the instructional system.

Since those early attempts at implementation of team teaching, considerable conceptual effort and theoretical development has taken place to manipulate more of the variables of instruction along with that limited manipulation of the staffing component. The term "flexible staffing" which is included on the list of instructional models, is probably a misnomer since the concept has been developed to the point where it constitutes many more of the elements of instruction than those of staff-use. The rationale for flexible staffing provided through the School Personnel Utilization Program of BEPD/USOE (Beard, Foster & DeBloois, 1971) interrelates enough components of instruction for this concept to be considered a new instructional model. The more limited concept of differentiated staffing, like team teaching, is considered a component of teacher function in the checklist on Table II.

Other new instructional models identified include: the Non-graded or Appropriate Placement School concept, the School Within-a-School or House Plan concept, the Multi-unit School, the Three Tiered School, the Philadelphia Parkway Program, Leichestershire Schools, and the Middle School concept.

It is important that the reader be cautioned; the data used to make these discriminations came from conceptualization efforts -- proposed models of what should be -- not from data taken through evaluation of a model

in operation. It is true that for most of the models cited here a number of successful implementations have taken place. In Section II an attempt will be made to consider whatever data have been generated to describe the model and to indicate whether it has promise to improve instruction and thus increase student gains.

In Section III of this report an attempt is made to describe the sub-components in the various categories of an instructional model and to provide a list of "building blocks" which may be useful in the development of alternative models. The third section should be viewed as a listing of non-qualifying innovations which may have much educational value but which offer no alternative system of instruction.

SECTION II

NEW INSTRUCTIONAL MODELS

Within this section eight new instructional models are identified and described. Data which are being generated through formative and summative evaluation of pilot studies or early implementation attempts are used whenever they are available to round out a description. The bibliographical citations for each model are not inclusive. Only those which were considered most critical to the description of the model were selected for inclusion.

NON-GRADED SCHOOLS

As early as 1948, Goodlad and Anderson (1963) proposed the concept of non-graded schools as an alternative to conventional models of instruction. Then as well as today the motivating force behind this model lay in the inherent inability of the graded school structure to provide for the human variability of its students. Rather than tracing the history of the adoption of the graded school in this country and the subsequent disillusionment educators have experienced; it may suffice to list the major developments in nineteenth century USA that prompted the adoption of the graded structure, which resulted in a set of instructional problems the non-graded model is attempting to resolve. In this country there was the movement toward state-supported public education, and educators were astonished at the economy of the monitorial system which had been observed in England. This graded system had an additional appeal of providing a well ordered means of educating the vastly increased numbers of children who would flock to tax supported schools. The few teachers who had any formal training, assisted by monitors --usually older students, who would carry out detailed instructions--found they could oversee the movement of large numbers of children through the

separate grades of this new organizational structure. A rapid standardization of text books, and an ordering of subject matter followed this classification of students into grades, and the system imbedded itself deeper and deeper in the heart of instructional and economic practice.

In contrast to the distinct categories and sequential and simultaneous movement of student groups typical of the graded structure, the concept of Non-gradedness is based on a theory of continuous pupil progress. According to Goodlad and Anderson (1963) "...the differences among children are great, and since these differences cannot be substantially modified, school structure must facilitate the continuous educational progress of each pupil." In the late 1940's and early 50's the modern concept of non-graded schools was born. (In the 1870's early opponents of the newly installed graded system unsuccessfully proposed alternatives which had an ungraded structure). Goodlad (1955) identified ten elementary schools which had ungraded their primary units. At that stage of conceptual development, the concept was not much more than a proposal for changing one component of instruction. Since that time a great deal of development has taken place which places the concept in the category of a new instructional model in this study. In 1963 Goodlad & Anderson described the concept as "a system of organization and nothing more," where a child's progress is viewed as it really is; irregular and highly variable within different domains of learning and in particular skill areas. They suggested that learning was to be viewed vertically or longitudinally rather than horizontally, and the child's progress would be assessed by comparing his attainment with his ability rather than against that of his peers. A child would be provided more time to accomplish in areas of difficulty, and would be free to advance rapidly in areas of strengths with no fear of encroaching upon the work which typically would be handled the

following year. Students would be allowed to shift to another class at almost any time as work was completed. Although Goodlad claimed only a system of organization, much more was included in this early model of non-gradedness. There was an emphatic indictment against non-promotion, and compelling evidence was offered to substantiate the claim that non-promotion was harmful in the majority of instances. Curriculum considerations--the content of instruction--were tied to the concept, as was the timing and pacing of learning, various approaches to student grouping, staff utilization (team teaching), in-service training, pupil evaluation, and strategies for concept dissemination. An analysis of the recent literature on the non-graded school clearly points to a model of instruction made up of much more than organizational patterns. There is no question but that the concept has been developed beyond that level which provoked Halliwell's comment (1963):

> A perusal of the literature concerning the non-graded organizational pattern indicates that in actual practice the differences between the graded and non-graded patterns of school organization are primarily organizational and not curricular, and that little attention has been devoted to exploring the possibilities for curriculum revision within the scaffolding of the non-graded program.

Carl L. Byerly (1967) lists nine features which he determined were common to almost all pilot non-graded programs:

1. Adjusting the skills taught and the instructional materials to the readiness of the individual child.
2. Eliminating grade barriers which prohibit the use of appropriate books.
3. Eliminating non-promotion.
4. Increasing staff curriculum planning and program evaluation.
5. Increasing cooperative teaching ventures.

6. Using a greater variety of instructional materials.

7. Involving parents.

8. Developing new methods of reporting student progress.

9. Increasing the administrative support of the instructional program.

Donald A. Erickson (1967) adds to this list with six criteria he developed for evaluating non-graded programs. His second and fifth criterion adds a dimension to the concept which is crucial to an instructional model. By requiring within the concept a statement of performance objectives, and tying the evaluation of the program to those objectives the element of accountability is introduced. Erickson's six criteria are:

1. A clear statement of instruction objectives, sequenced to cover the entire instructional program.

2. Sufficient variety of instructional materials at different levels of sophistication.

3. A staff with competencies in individualizing instruction.

4. The use of grouping practices which are flexible enough to allow for easy movement.

5. Evaluation devices based on instructional objectives.

6. Commitment to recognizing individual differences.

There is rather general agreement in the literature that non-grading is a vertical reorganization of the school structure. The focus is on the abilities and needs of the student rather than on a preselected body of subject matter or a predetermined pace of instruction. It provides the opportunity for students to progress up an inclined spiral of learning from the first day of formal instruction until graduation. It makes possible the mastery of skills and development of cognitive strategies before the child moves on to more complex learning activities.

James N. Retson (1967) claims: "A non-graded school is one in which the needs and abilities of youngsters are given prime consideration and met

without the confining influence of grade and age lines." In support of this sentiment Richard I. Miller (1967) adds:

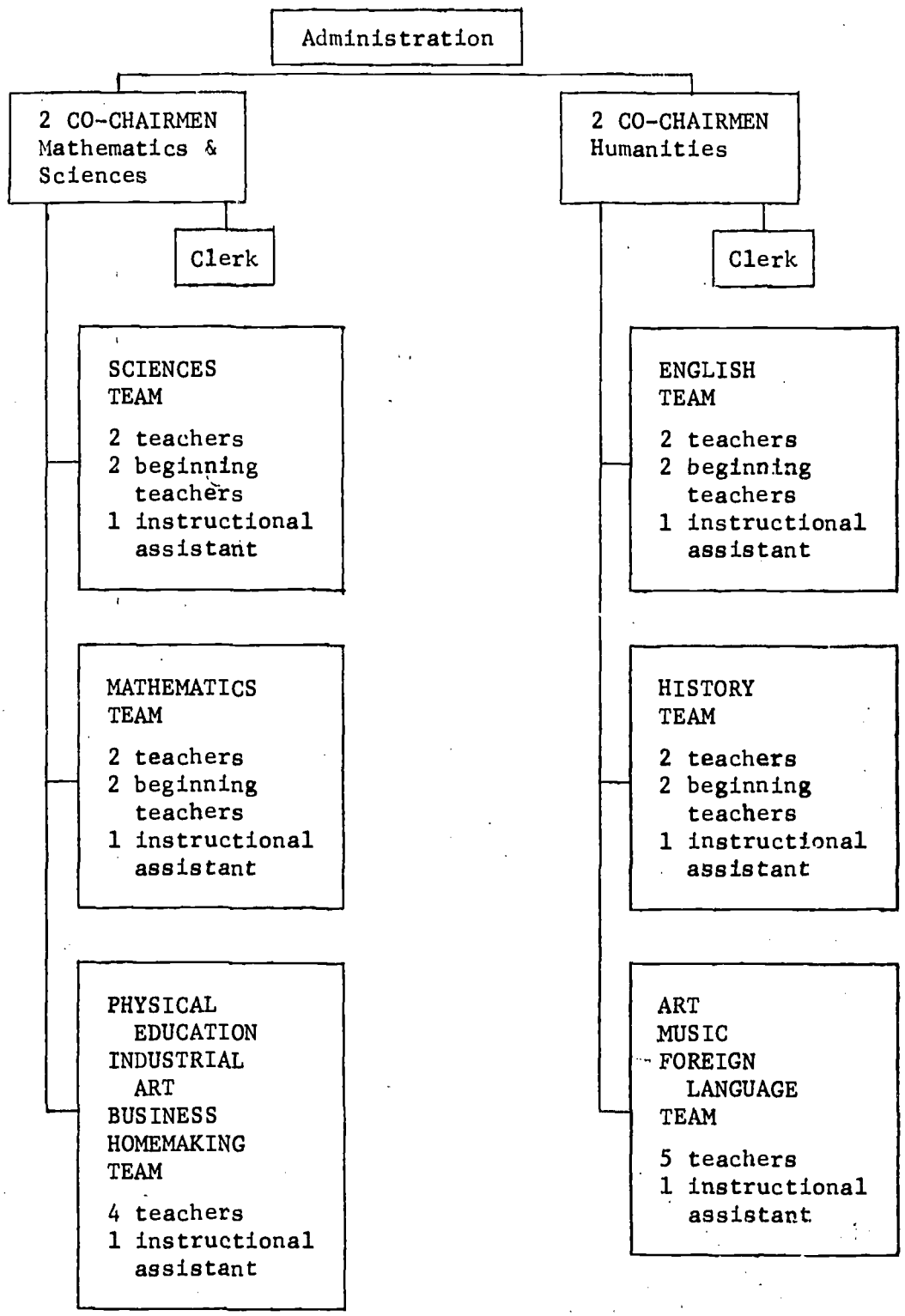
> The non-graded school is one without grade failure and/or retention, in the conventional sense, it has individualized instruction with the purpose of permitting youngsters to progress as they--individually--show competence to do so; and it permits sufficient flexibility in the instructional program to make instructional adjustments both in terms of intrapersonal variability (differences within the individual) and in terms of interpersonal variability (differences among individuals).

According to Robert H. Anderson (1966):

> Non-gradedness is a rather unfortunate term, since it refers primarily to what is not, rather than to what is.... The many definitions that have been offered differ primarily in the elegance and the comprehensiveness with which they have been stated rather than in their conceptual meaning. Without exception, they emphasize the need to individualize instruction and to develop each individual up to his full potential for physical, social, intellectual, and civic accomplishment. And without exception they emphasize the need to provide both differentiated rates of pupil progress and variations in the kinds of program offered. Many, though not all, of the definitions refer to the need for more suitable forms of evaluating and reporting pupil progress and most refer to various means for individualizing instruction, such as pupil grouping, independent study, and other procedural arrangements. The titles of non-graded programs differ too. Many use phrases like "continuous progress plan" or "continuous growth plan."

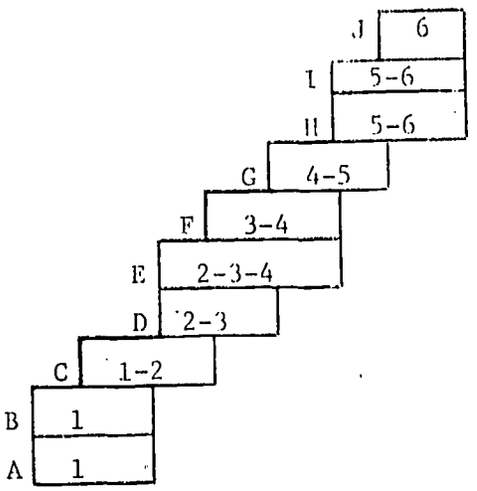
Other characteristics have been added to this model of instruction, such as team teaching and teacher rotation. Goodlad (1963) identified a team teaching model he believes is appropriate (see Table III) which is definitely interdisciplinary in its approach and appears to foreshadow the more flexible use of staff described later in this section. Richard I. Miller (1967) provides a rationale for rotating teachers within a non-graded school so that they may advance with their students. Evelyn Carswell (1967) calls for the continuous inservice training of teachers as an integral part of the non-graded concept. For a complete description of non-gradedness in one source the reader should see John I. Goodlad, Saturday Review, (March 20, 1965, pp. 57-59).

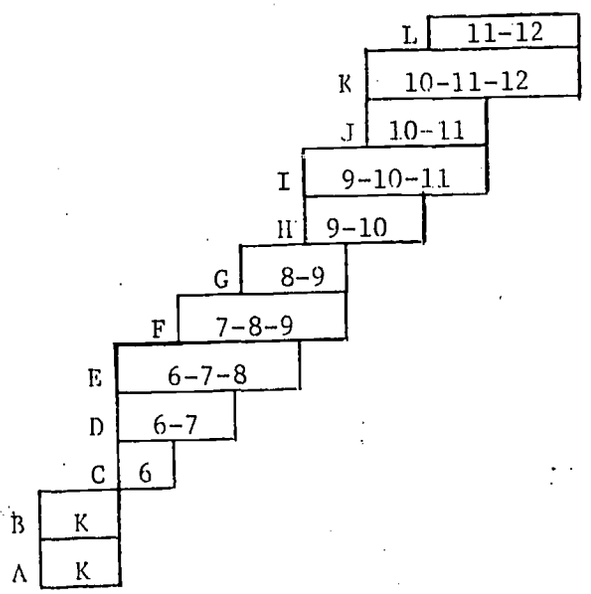
TABLE III



A Team Teaching Plan of Personnel Organization
Taken from Goodlad (1966).

TABLE IV





Several possible variations in a plan of overlapping, multiage classes

From John I. Goodlad (1966)

The vertical organization of structure so basic to the model has been described in numerous ways and seems to be a point around h there is still a good deal of contention. Apparently there is no or dox pattern for this vertical structure. For the sake of illustration, Table IV has been taken from John I. Goodlad's book (1966) to demonstrate one pattern.

Implicit and implied components of the model are profiled on the components checklist for a non-graded model of instruction on Table V. This demonstrates the components of instruction emphasized in the model and gives a means of comparing this model with other instructional models. An analysis of the checklist indicates that while non-gradedness emphasizes staffing innovation, student grouping patterns, performance based curriculum, and new teaching methodologies, it does not directly address the question of changing the use of instructional space, or the use of non-classroom space for instruction. The decision patterns for instruction (who decides what will be learned, using what materials, at what pace), and the socio-psychological factors--the instructional climate--of student/teacher interpersonal relations, communication, and teacher professionalism are also not directly affected. Teacher evaluation likewise receives very little attention in the model.

Flexibly Staffed Schools

Not long ago the concept of flexible staffing was so vague and conceptually underdeveloped that it scarcely could have been considered a model of instruction. Three separate efforts at conceptual and theoretical development have recently given this concept enough form and internal consistency that it may now be reported as a new model of instruction. The three efforts were carried out by four institutions. The School Personnel Utilization program of the Office of Education--in conjunction with its Leadership Training Institute, directed by Dwight W. Allen of the University of

TABLE V

A COMPONENT CHECK-LIST FOR A Non-Graded Model of Instruction

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
		X	open concept learning areas
	X		traditional space structures
	X		flexible classroom use
	X		resource centers
		X	student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
		X	urban/rural
		X	community facilities use
			INSTRUCTIONAL USE OF TIME
	X		traditional 5-7 period day/structured elementary school day.
	X		block scheduling
		X	daily demand scheduling
		X	open schedule
		X	year around school
		X	extended school day
			SCHOOL PERSONNEL UTILIZATION
	X		traditional staff use(all certified equally)
X			team teaching
X			interdisciplinary teaming
X			use of instructional aides
	X		older students teaching younger students
	X		differentiated staffing
		X	using community volunteers (non certified)
	X		teacher role specialization
X			involvement of teaching staff in instructional decision-making

TABLE V

A COMPONENT CHECK-LIST FOR A Non-Graded Model of Instruction

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
	X		standard big 4 curriculum: Math, Science, English, Social Studies
		X	core curriculum
	X		interdisciplinary curriculum
		X	occupational/vocational
		X	sociological problems oriented
X			student centered
X			student mastery of verbal information
X			student mastery of intellectual skills
X			student cognitive skills development
	X		student attitude development
			INSTRUCTIONAL MANAGEMENT
			standard class-size student groups
X			homogeneous grouping
	X		variable grouping
X			flexible grouping
	X		advanced placement
X			ability grouping
X			performance based instruction
	X		individually prescribed instruction
	X		criterion referenced testing
		X	time based instruction
		X	norm referenced testing
X			continuous student progress
		X	age-grade student progress
X			student paced learning
		X	student selection of materials
		X	student selection of instructional methods
	X		teacher paced learning
X			teacher selection of materials
X			teacher selection of instructional methods
	X		materials paced learning
	X		situational selection of pace, materials, and methods
	X		individually guided motivation
	X		student involvement in instructional decision making

TABLE V

A COMPONENT CHECK-LIST FOR A Non-Graded Model of Instruction

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
	X		audio-tutorial instruction
X			programmed instruction
		X	programmed instructional T. V.
		X	computerized games
	X		auto-adjunct instruction
	X		lecture/assignment/feedback
			Idiosyncratic Systems
	X		open laboratory experiences
X			independent study
		X	self directed learning (free learner concept)
	X		learning contracts (contingency management)
	X		quest or project activity
			Group Inquiry Systems
	X		inductive teaching
		X	simulation and games
		X	socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
X			student self actualization
		X	self actualization of instructional personnel
		X	interpersonal competence
		X	communication
		X	teacher professionalism
			COMMUNITY RESOURCE USE
X			parental involvement
		X	non certified professionals used in instruction
			community facilities use
		X	public agencies
		X	private agencies
		X	community controlled schools
		X	proprietary schools

TABLE V

A COMPONENT CHECK-LIST FOR A Non-Graded Model of Instruction

An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
		X	student self evaluation
X			multidimensional performance based assessment by teachers
	X		class achievement ranking by teacher
		X	no assessment
			teacher evaluations
		X	teacher self assessment
		X	criteria based assessment by superior, peers, and subordinates
		X	intuition based administrative ratings
	X		no assessment
			program evaluations
		X	program evaluation based on program objectives (cost effectiveness)
	X		accountability assessment (evaluation of outcomes against objectives)
	X		program evaluations based on standard student achievement indices
		X	intuitive administrative ratings of program
		X	no assessment

Massachusetts--funded the Temple City Unified School District in California to lay the groundwork for one predominant flexible staffing model. The Wisconsin Research and Development Center for Cognitive Learning has invested at least six years into the development of the Multi-unit School Program. And the evaluation of school personnel utilization projects by the Evaluation Training Center, Florida State University recently resulted in renewed theoretical development of the model.

Although the Multi-unit School concept could be classified within a flexible staffing model category, it will be described separately for two basic reasons: specific teacher training techniques and instructional materials have been developed for the Multi-unit School Model which are unique to that model, and secondly, the model is being piloted and validated only in elementary schools around the country, and in this way stands somewhat apart from other flexible staffing efforts which are not considered either primarily elementary or secondary in scope.

Perhaps the best quick overview of the flexible staffing model of instruction can be gained from a list of flexible staffing objectives established by the SPU program of the U. S. Office of Education. The original list developed by the SPU program officials was evaluated through a formative assessment procedure and revised to its present form. This list of objectives represents the latest statement of goals, available for flexible staffing. These are taken from a report by Beard, DeBloois and Foster (1971) and are listed below:

The goal of the School Personnel Utilization Program is to improve the teaching and learning environment in elementary and secondary schools by finding more effective ways of organizing their teaching and administrative staffs. In order to meet this goal the following objectives are proposed for the SPU program.

SPU Program Objectives

1. To orient school personnel and the public to alternative organizational structures for schools.

2. To provide training for school personnel in the managerial, organizational, and instructional skills required by newly adopted organizational structures.

3. To encourage universities to provide inservice and preservice training programs in the skills required by alternative organizational structures.

4. To bring into being a credentialing process for professional teachers that includes multiple entry and exit points, and non-sequential movement to higher certification.

5. To encourage state education agencies to seek legislation and to adopt policies which provide for alternative school organizational structures.

6. To differentiate the roles of instructional personnel, as well as administrators and other personnel, on the basis of the type and amount of responsibility assigned.

7. To differentiate salaries of instructional personnel on the basis of their responsibilities.

8. To provide classroom instructional personnel promotional incentives which allow them to advance in responsibility and pay while remaining teachers. These promotional incentives should be equivalent to those provided administrators and other non-instructional personnel.

9. To create flexible instructional time schedules.

10. Decisions should be made at the levels in the school's organizational structure where the most information exists.

11. The school staff should engage in group problem solving.

12. The school should utilize a number of instructional strategies and should provide a wide variety of resources to students for facilitation of their learning.

13. The community should participate in the implementation of the instructional program.

14. The school's in-service training programs should be designed to facilitate the achievement of school goals.

15. The assignment of responsibilities within the school organization should be based in part on the individual differences of its members, their different strengths and weaknesses, and their varied personal goals.

16. Teachers, administrators, and other school personnel should participate as peers in the school's organizational structure, though their responsibilities differ as to type and amount.

17. School personnel should recognize that they must be mutually dependent if organizational goals are to be achieved.

18. The school organizational structure should encourage its staff members to be self-actualizing.

19. The community should participate in the setting of goals for the instructional program.

20. The school should have a system for objectively evaluating:

    a. Staff, pupil, and community attitudes.
    b. Cost-effectiveness of specific elements of the school program.
    c. Success of its graduates, transfers, and drop-outs.
    d. School program relevancy.
    e. Pupil achievement in terms of school objectives.

An attempt has been made to state the objectives clearly. However, in trying to achieve a second criterion of conciseness, their communication value may have been decreased. Further discussion of the concepts underlying the organizational objectives may be found in DeBloois's (1971) conceptualization of the school personnel utilization program.

Another source of definition for the flexible staffing model is a paper being prepared by a writing team of Corrigan, DeBloois, English, Olivero, Sharpes and Stinnett (1971), to present the "state of the art" of flexible staffing to the U. S. Commissioner of Education. In this paper the various descriptions given over the past half decade of the flexible staffing concept were analyzed and condensed into ten statements.

From these statements it appears the concept of flexible staffing purports to:

1. Individualize instruction for children by bringing to the school setting new people (or retrain those there) who can diagram learning difficulties and prescribe solutions.

2. Make the job of each person more rewarding - psychologically as well as financially - by establishing increased specialization of responsibilities. Fiscal rewards would be consistent with performance, not necesarily with longevity, as is the case with the single salary schedule.

3. Avoid the evils of merit pay as conceived by the teachers' associations.

4. Establish accountability and responsibility for teaching and learning.

5. Create conditions which force teacher education institutions to modify their approaches, making them more relevant, perhaps, to the needs of out time.

6. Change the organizational structure of the school--the power for decision-making at the level where responsibility for the execution of decisions must take place, e.g., in the classroom.

7. Offer a career pattern for those teachers who wish to remain in the classroom rather than be promoted away from children into administration.

8. Provide a career opportunity program for people who are poor through well-delineated career ladder and lattice arrangements. This may be one way to more closely bring the home and the schools together for common causes.

9. Force needed review in the certification and credentialing procedures and requirements.

10. Convince the public about the need for increased fiscal support on the one hand while redeploying existing resources on the other.

Although the early models of staff differentiation were somewhat preoccupied in making a break with the past, teachers had tremendous difficulty getting into a new frame of reference, thus changing the role of the classroom teacher was frequently attempted but seldom achieved. New roles were added to take care of the problems of organizing and administering instruction and the traditional role of teacher remained intact. A true differentiation of teaching skill and more sophisticated levels of expertise were sometimes conceptualized but hardly ever did training take place which would make their implementation possible. Mann (1971) quotes Dr. Fenwick English's description of "Second Generation" models of flexible staffing to help expand the concept of staff differentiation into a model of instruction which constructs a bridge between the teacher's function and the pupil's needs. While the early models

focused almost entirely on structural aspects--role and salary differentiation--later models have begun to organize around the needs of the school or especially the student client. English (1971) underlines this point, "All new teaching roles (and indeed the perpetuation of old ones) must be based upon a needs assessment of learners. Whatever else...it must be learner centered." Other aspects of the educational process are taking on more significance in many of these later models. Collegiality among the staff and student body of the school has become an important objective. Accountability--that process of telling the public what the goals of the school are, and how well they are being achieved--emerged as an important element of the model. In many cases the process of flexible staffing, where the individuals of a school adopt a new interpersonal style of interaction and allow a new staffing form to emerge, is considered equally as important as the products of structuring roles and salaries into vertical hierarchies.

Table VII, A Component Checklist for a Flexible Staffing Instructional Model, demonstrates those elements which receive the primary emphasis in this model and those which receive a lesser emphasis or no attention at all. Unlike the classifications of other models which are made on this form, the flexible staffing classifications are based on empirical evidence taken from the SPU Project Evaluation which was carried out by the Evaluation Training Center at Florida State University. Beard, DeBloois and Foster (1971) directed a study which provides data indicating which objectives of those found on pages 31 and 32 project personnel perceived to be flexible staffing objectives, and which they would like to see fully implemented in their school. In addition, a status study of the level of implementation of project objectives took place. They reported teacher and administrative perceptions of the concept which included both process and structure, with

major importance placed on accountability, diffused decision making, role specialization, and individualization of learning.

One of the abiding criticisms of the flexible staffing model of instruction by its opponents is that its main purpose lies outside the domain of the student. The concept grew out of an attempt to improve the lot of the teacher and has maintained this emphasis. In some cases the criticism is valid, in others it is amiss. Projects like the one in Temple City, California, or in Mesa, Arizona have developed models based on objectives which clearly have improvement of learning as the major target. A survey of the literature however, leaves this investigator with the conclusion that, in a general sense, the flexible staffing model of instruction has a primary purpose of promoting more effective and efficient staffing structures with increased attitude and intellectual skill development of the student following a close second. Flexible use of space both in the classroom and in the school is emphasized in this model. Little concern or attention has been given to the idea of using out-of-classroom space, however the model's emphasis on using a wide variety of human resources, including noncertified community volunteers, both professional and lay, seems to infer that learning should take place in many environmental settings.

A primary emphasis is placed on the decision-making process in schools. Perhaps more than any other model of instruction, flexible staffing proposes that there be involvement of all those affected by a decision in the actual making of the decision. The instructional staff are normally organized into representative decision-making and instructional policy setting bodies of a school. Table VI demonstrates one such organizational paradigm.

In this model the curriculum council makes instructional decisions formerly reserved for the superintendent. The Academic Senate brings more expertise in to decision processes which the school principal once made unilaterally, and the teaching team is the direct authority for selecting instructional activities. Frequently student representatives are included on these academic senates or steering committees. This emphasis on more democratic decision making often pervades the instructional end of decision making as well. A body of literature (Joyce, 1967), (Kline, 1971), (Fantini and Weinstein, 1968) suggests that students join with teachers to decide what material will be studied, what methods will be used, and the pace of study to be followed by individual children.

As demonstrated on the Check-list in Table VII, student grouping patterns are not a dominant feature of the model. There is evidence that the model calls for a variety of different group sizes during the course of instruction based on the instructional objectives; large group settings for exposition, classroom groups for procedures, motivation and management concerns, small group settings for discussion and diagnosing, and individual conference settings where the teacher and the student meet one on one for remediation and counseling.

The staffing concept has not seriously addressed the need for curriculum change. Implicit in the model is the belief that once existing teacher positions are reorganized by new role descriptions, several of which are charged with curriculum reform and development, the curriculum will begin to mirror the needs of the student and society. A more direct attack on the traditional curriculum is not a feature of this model. The teaching staff of the school is to be organized into groups of specialists. The omnicapable teacher as a model of organization for the school is dismissed.

Since differentiated roles, and flexible use of school personnel is the key element of this model, teachers will no longer perform in areas of personal weakness. Interdisciplinary teaming, and team teaching are also assumed by the model.

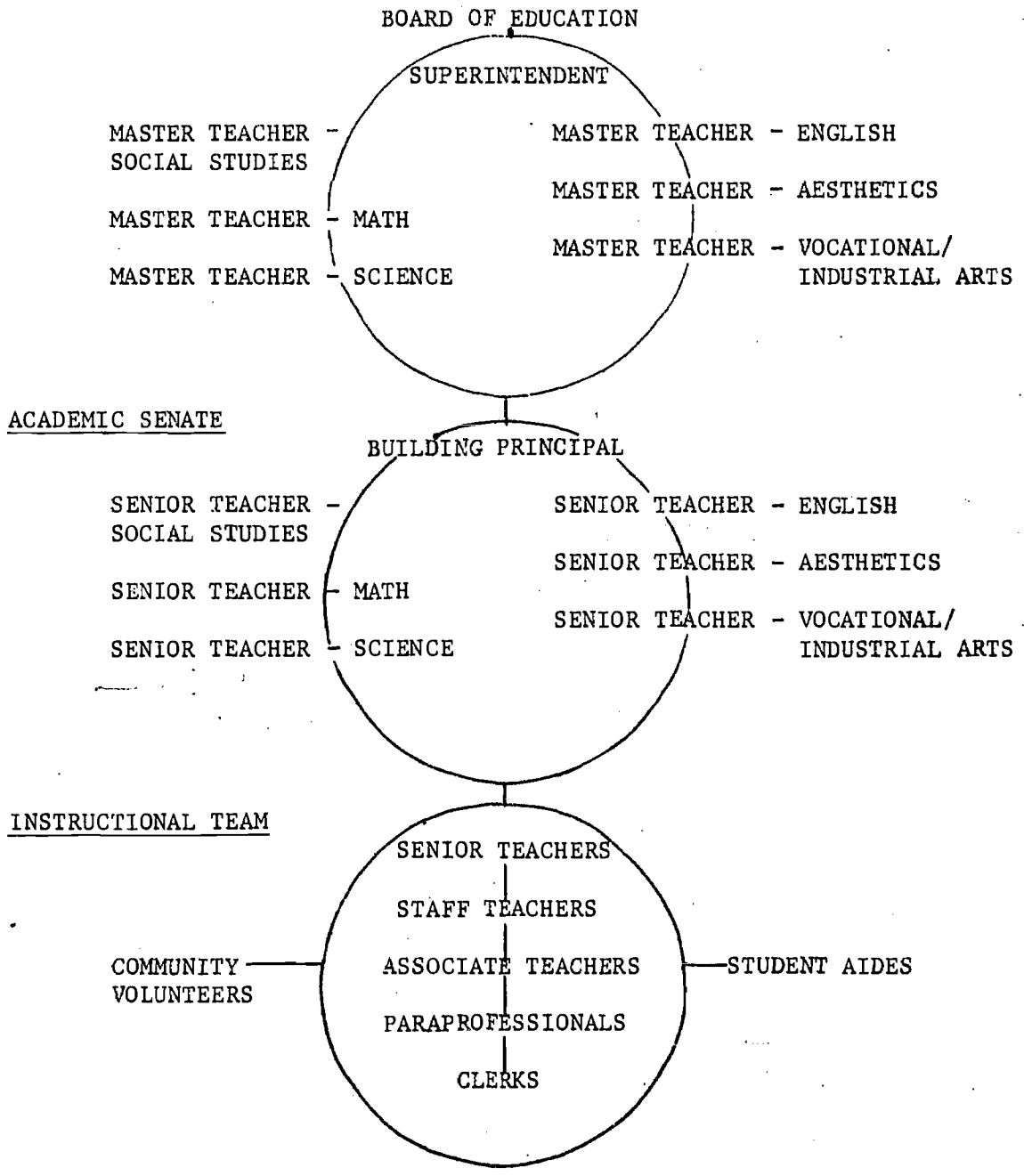
There has always been a very close conceptual link between the concept of flexible scheduling and flexible staffing. As a result of this, teaching methods required by flexible scheduling techniques have been adopted as part and parcel of the flexible staffing model. Cybernetic systems with their feedback loop, such as programmed instruction, learning activity packages, computer assisted instruction, etc., which are capable of being monitored by a teaching aide or an intern teacher, are emphasized by the flexible staffing instructional model. The use of small group conferences and the employment of idiosyncratic systems is also typical. Open laboratory activities independent study opportunities, and individual conferences with teachers are vital to the successful operation of a flexible modular schedule and are prescribed by this model of instruction. The model seems to suggest that as long as sufficient variety is used in teaching groups of children (i.e., inductive teaching, simulations, sociodramas, mediated lectures, etc.), a teacher will eventually provide for student differences. Modular scheduling receives the primary emphasis in this model, although forms of block scheduling and daily demand scheduling are commonly considered in the literature.

The Socio Psychological factors listed in the form are all of primary importance in the model. The recent trend toward a process approach to staffing flexibility has greatly increased the importance of this element, according to Beard, DeBloois and Foster (1971).

Continuous evaluation and recycling is considered essential in most models of flexible staffing submitted to the U. S. Office of Education for

TABLE VI

A DIFFERENTIATED STAFFING MODEL



Taken from DeBloois (1970)

TABLE VII

A COMPONENT CHECK-LIST FOR A Flexible Staffing Model of Instruction

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
	X		open concept learning areas
		X	traditional space structures
X			flexible classroom use
X			resource centers
	X		student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
		X	urban/rural
	X		community facilities use
			INSTRUCTIONAL USE OF TIME
		X	traditional 5-7 period day/structured elementary school day.
	X		block scheduling
	X		daily demand scheduling
	X		open schedule
		X	year around school
		X	extended school day
			SCHOOL PERSONNEL UTILIZATION
		X	traditional staff use(all certified equally)
	X		team teaching
	X		interdisciplinary teaming
X			use of instructional aides
	X		older students teaching younger students
X			differentiated staffing
X			using community volunteers (non certified)
X			teacher role specialization
X			involvement of teaching staff in instructional decision-making

TABLE VII

A COMPONENT CHECK-LIST FOR A Flexible Staffing Model of Instruction

An essential component		An implied factor		Not a factor	
					CURRICULUM FOCUS
X					standard big 4 curriculum: Math, Science, English, Social Studies
				X	core curriculum
		X			interdisciplinary curriculum
				X	occupational/vocational
				X	sociological problems oriented
		X			student centered
X					student mastery of verbal information
X					student mastery of intellectual skills
X					student cognitive skills development
X					student attitude development
					INSTRUCTIONAL MANAGEMENT
				X	standard class-size student groups
		X			homogeneous grouping
		X			variable grouping
X					flexible grouping
		X			advanced placement
		X			ability-grouping
X					performance based instruction
		X			individually prescribed instruction
		X			criterion referenced testing
				X	time based instruction
				X	norm referenced testing
		X			continuous student-progress
		X			age-grade student progress
X					student paced learning
		X			student selection of materials
				X	student selection of instructional methods
X					teacher paced learning
		X			teacher selection of materials
X					teacher selection of instructional methods
		X			materials paced learning
X					situational selection of pace, materials, and methods
		X			individually guided motivation
		X			student involvement in instructional decision making

TABLE VII

A COMPONENT CHECK-LIST FOR A Flexible Staffing Model of Instruction

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
	X	X	computer assisted instruction
	X		audio-tutorial instruction
X			programmed instruction
		X	programmed instructional T. V.
		X	computerized games
X			auto-adjunct instruction
X			lecture/assignment/feedback
			Idiosyncratic Systems
X			open laboratory experiences
X			independent study
		X	self directed learning (free learner concept)
	X		learning contracts (contingency management)
X			quest or project activity
			Group Inquiry Systems
		X	inductive teaching
		X	simulation and games
		X	socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
	X		student self actualization
X			self actualization of instructional personnel
X			interpersonal competence
X			communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
X			parental involvement
X			non certified professionals used in instruction
			community facilities use
		X	public agencies
		X	private agencies
		X	community controlled schools
		X	proprietary schools

TABLE VII

A COMPONENT CHECK-LIST FOR A Flexible Staffing Model of Instruction

An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
		X	student self evaluation
X			multidimensional performance based assessment by teachers
	X		class achievement ranking by teacher
		X	no assessment
			teacher evaluations
	X		teacher self assessment
X			criteria based assessment by superior, peers, and subordinates
		X	intuition based administrative ratings
		X	no assessment
			program evaluations
		X	program evaluation based on program objectives (cost effectiveness)
X			accountability assessment (evaluation of outcomes against objectives)
	X		program evaluations based on standard student achievement indices
		X	intuitive administrative ratings of program
		X	no assessment

funding. Accounting to the public must also be considered a feature of the model. Evaluation of teachers by their peers as well as by superiors is an unmistakable component, and student involvement in the evaluation of teachers, is a secondary but growing trend in most models.

The Multi-unit School

Literature from the Wisconsin Research and Development Center for Cognitive Learning (Klausmeier, 1970) describes the multi-unit school instructional model as one which:

1. organizes for instruction and related administrative arrangements at the building and central office level.
2. provides for educational and instructional decision-making, open communication, and accountability.
3. provides an inservice program including multi-media materials.
4. offers a model of instructional programming for the individual student which is designed to provide for differences in children's rates and styles of learning, level of motivation, and other characteristics within the context of a school's educational objectives. (See Table VIII)
5. provides a model for developing curriculum materials for a school staff implementing Individually Guided Education.
6. designs the development of measurement tools and evaluation procedures for preassessing children's learning readiness, for assessing the progress and final achievement of the student through criterion-referenced tests.
7. provides feedback of all assessment data to the teacher, and the child.
8. provides curriculum materials, an objective pool, and criterion-referenced tests for schools with insufficient resources for developing their own.
9. offers a program of home-school communications that reinforces the school's efforts by generating community interest and support.
10. encourages facilitative environments in school buildings, school systems, state education agencies and teacher education institutions.
11. requires practical research from each participating school in order to design, implement and evaluate instructional programs for individual students.

12. replaces the age-graded, self-contained classroom with a non-graded instructional unit.

13. differentiates the teaching staff by adding the roles of unit leaders, teaching intern, teacher aide, and instructional secretary to the traditional staff teacher role. (See Table IX)

The main function of each instructional unit within the multi-unit structure is to plan and carry out, and to evaluate the results of each student's instructional program. Inservice training of the teaching staff is provided for each unit. Some units join in a cooperative effort with an outside agency to plan and conduct research, others join in preservice teacher educational agencies to participate directly in the preservice training of teachers (thus the designation, I & R units). Behrendt (1970) emphasizes the inservice education and evaluation aspects of the model in his claim "the result is a continuously improving, self-renewing elementary school."

Decision making in the multi-unit school is altered significantly, with much greater involvement of the instructional staff than is typical in conventional instructional models. A systemwide policy committee made up of the system superintendent, consultants, central office staff, principal representatives, and representatives from the unit leaders, and instructional staff set policy for the multi-unit schools in the district. They identify functions to be performed in each school, recruit personnel, organize inservice education of the staff, provide instructional materials and disseminate relevant information to the other schools within the district. A second level committee, the Instructional Improvement Committee is organized at the building level, and is comprised of the principal and unit leaders. According to Klausmeier, et al (1970), this committee states the educational objectives of the school, and outlines the educational program

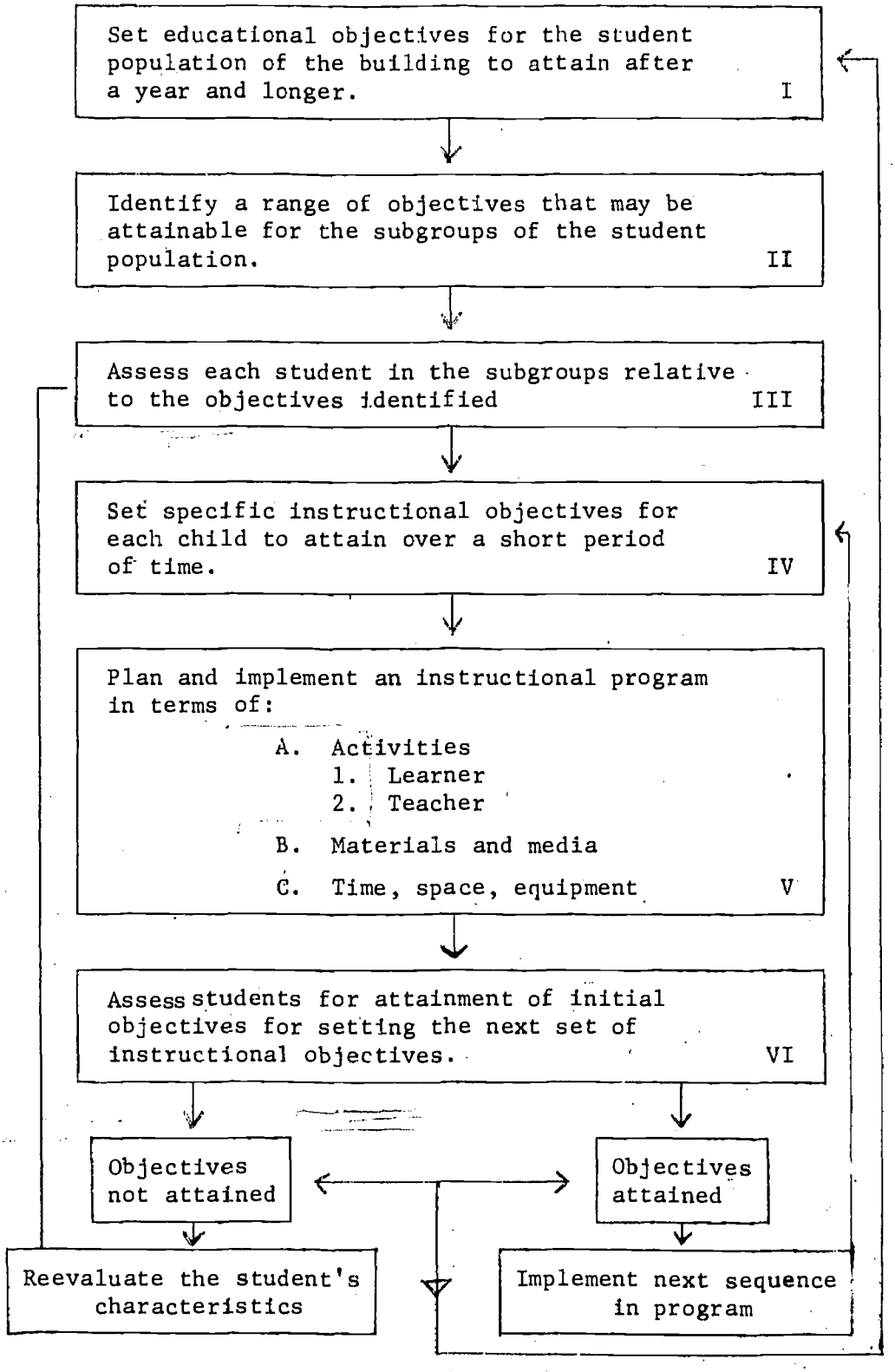
for the entire building, and is responsibile for interpreting and implementing system-and state-wide policies and coordinates among the various instructional and research units within the school. Facility use, scheduling and materials acquisition all fall under the responsibilities of this committee which has as its major task developing and coordinating functions related to instruction. Gaskell (1967) points out the increased decision making and inservice training role adopted by the faculty of multi-grade planning and teaching teams.

The child in the multi-unit school, ideally, will have a program designed for his exact complexity and pacing level. The model suggests a number of steps to be taken to achieve this principle of Individually Guided Education. (See Table VIII). In this model the Instructional Improvement Committee sets schoolwide educational objectives, after which a subset of instructional objectives are identified and criterion-referenced test items developed by the staff for each unit. The unit staff must then assess each child's level of skill development, using the criterion referenced tests. Specific instructional objectives for each child in an instructional unit are established next, after which the staff must plan an instructional program for all unit children. (While each child will be involved in several different instructional patterns, in the various curriculum areas, each will have some instruction in small groups with other children working on the same skills). Finally, students must be examined to determine their attainment of objectives.

The multi-unit school model has developed individually guided reading skill development programs, programs for developing mathematical processes, and social studies related programs for educating the children in the concepts of environmental management and critical decision making. In addition,

TABLE VIII

Instructional Programing Model for IGE



Taken from Klausmeier et al (1970).

the development of the model has incorporated research about motivation into procedures that teachers can use, which are based on modeling goal-setting, feedback and reinforcement activities. This is called Individually Guided Motivation, and is currently undergoing extensive development for use in the school year of 1972 and 1973. (See Klausmeier and others, 1970)

During its six years of development the Multi-unit school has been monitored rather carefully. Several conclusions have been reached as a result of this evaluation:

Roland J. Pellegrin of the Center for Advanced Study of Educational Administration at the University of Oregon conducted research in three MUS-Es and three control schools in three Wisconsin school systems. These multiunit schools were completing their initial year under the new pattern. The main conclusions stated by Pellegrin (Klausmeier, 1970) concerning changes that occurred during the first year of adopting the MUS-E pattern follow.

1. There was a superior recognition among MUS-E teachers of the vital role planning plays in instruction. The five most important tasks of MUS-E teachers dealt with specific types of planning and the preparation of instructional materials.

2. New specialization of labor emerged in the multiunit schools. Some teachers devoted most of their time to individual pupils, others worked mainly with small or class-sized groups, while a few worked with large groups.

3. Unit leaders were the focal points of interaction in the units and served as links between the teachers and the principal.

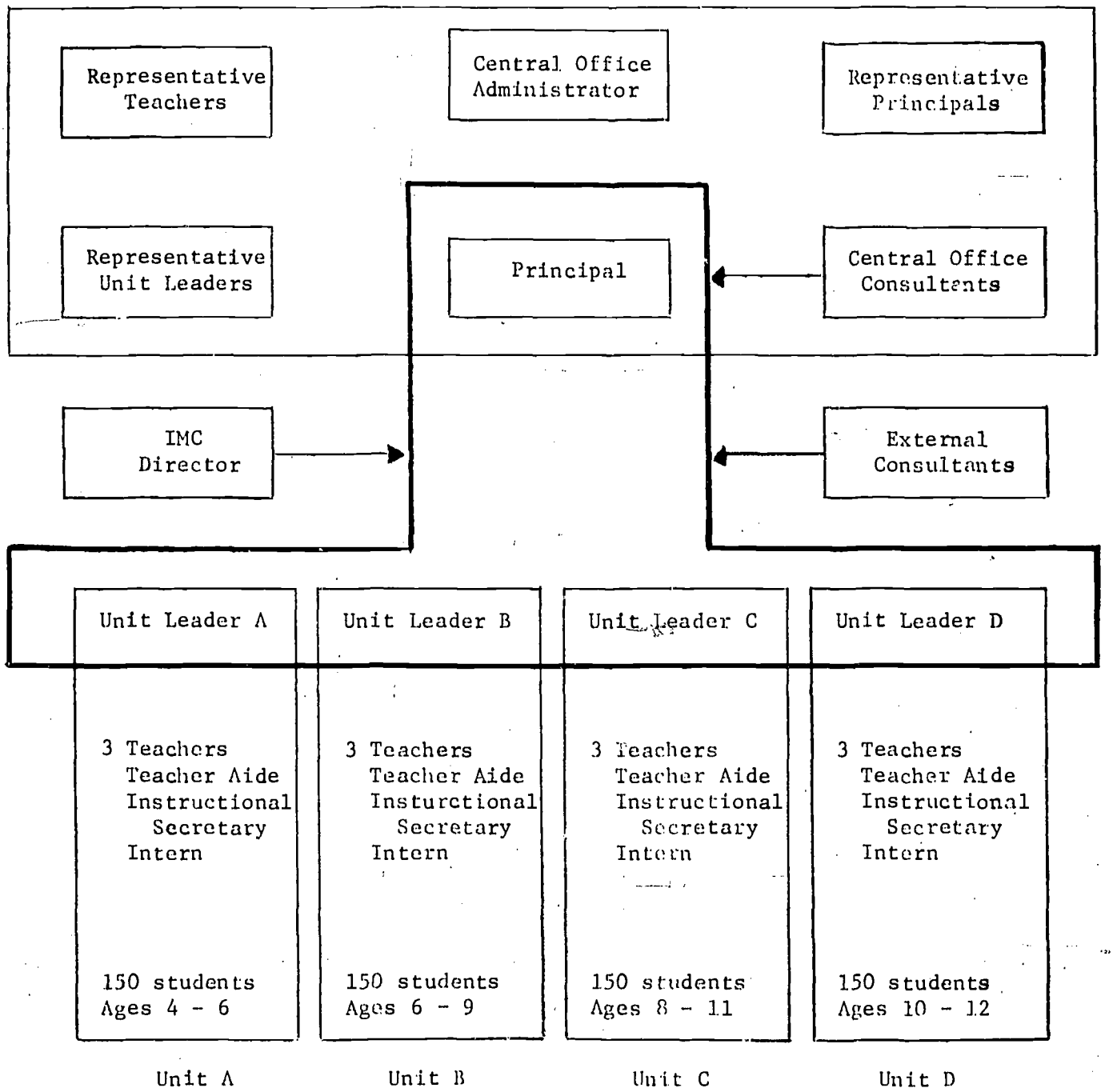
4. In the control schools, decision making affecting each classroom was generally the prerogative of individual teachers, who served as primary decision makers, and the principal, who provided advice or set limits. In the three MUS-Es decisions were typically made by the unit staff in cooperation with the principal.

5. Job satisfaction and teacher morale were much higher in the MUS-E staff.

As can be seen on Table IX, the Multi-unit School Instructional Model emphasizes a reorganization of the teaching function, the inservice training

TABLE IX

Organizational Chart of a Multiunit School of 600 Students



Taken from Klausmeier (1970)

of the staff, and the planning, installation and evaluation of the student's instructional program. Decision patterns are reordered, and like the flexible staffing concept, authority to decide on instructional matters has been diffused downward. Homogeneous grouping of students is a primary factor, and the typically flexible time usage pattern of the elementary school is capitalized upon. Flexible space use is considered of secondary importance, and little effort is made to change the environmental setting of instruction and move beyond the classroom boundaries. Although program evaluation is of primary importance, the evaluation of the teaching staff is not explicit in the model. The multi-unit school model seems to adopt the functional aspects of a flexible staffing model, but does not include much of the paraphernalia--the logistical elements--required to keep the whole staffing system working, such as teacher selection committees, annual peer evaluations, promotion policies, etc. The socio-psychological aspects are not neglected, yet they do receive less attention in the multi-unit school model than they do in most flexible staffing models. (See Table X)

The teaching focus of the model is definitely a student centered one. There is an emphasis on appropriate motivational techniques, and careful selection procedures for setting instructional objectives for the student and the subsequent development of programmed instructional materials to achieve the objectives. The model has as its purpose the mastery of learning in the intellectual skill and cognitive strategy areas; the teacher is clearly in control of assessing student needs and prescribing an instructional program. Very little emphasis is placed on students being involved in the kinds of activities described in Tier II or Tier III of the Three Tiered Model of Instruction.

TABLE X

A COMPONENT CHECK-LIST FOR A Multi-Unit Instructional Model

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
		X	open concept learning areas
	X		traditional space structures
	X		flexible classroom use
	X		resource centers
		X	student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
		X	urban/rural
		X	community facilities use
			INSTRUCTIONAL USE OF TIME
	X		traditional 5-7 period day/structured elementary school day.
	X		block scheduling
		X	daily demand scheduling
	X		open schedule
		X	year around school
		X	extended school day
			SCHOOL PERSONNEL UTILIZATION
		X	traditional staff use(all certified equally)
X			team teaching
X			interdisciplinary teaming
X			use of instructional aides
	X		older students teaching younger students
X			differentiated staffing
	X		using community volunteers (non-certified)
X			teacher role specialization
X			involvement of teaching staff in instructional decision-making

TABLE X

A COMPONENT CHECK-LIST FOR A Multi-Unit Instructional Model

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
	X		standard big 4 curriculum: Math, Science, English, Social Studies
		X	core curriculum
	X		interdisciplinary curriculum
		X	occupational/vocational
		X	sociological problems oriented
X			student centered
X			student mastery of verbal information
X			student mastery of intellectual skills
X			student cognitive skills development
	X		student attitude development
			INSTRUCTIONAL MANAGEMENT
	X		standard class-size student groups
X			homogeneous grouping
	X		variable grouping
	X		flexible grouping
		X	advanced placement
	X		ability grouping
X			performance based instruction
	X		individually prescribed instruction
X			criterion referenced testing
		X	time based instruction
		X	norm referenced testing
X			continuous student progress
		X	age-grade student progress
X			student paced learning
	X		student selection of materials
	X		student selection of instructional methods
X			teacher paced learning
X			teacher selection of materials
X			teacher selection of instructional methods
	X		materials paced learning
X			situational selection of pace, materials, and methods
X			individually guided motivation
	X		student involvement in instructional decision making

TABLE X A COMPONENT CHECK-LIST FOR A Multi-Unit Instructional Model

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
	X		audio-tutorial instruction
X			programmed instruction
		X	programmed instructional T. V.
		X	computerized games
	X		auto-adjunct instruction
	X		lecture/assignment/feedback
			Idiosyncratic Systems
		X	open laboratory experiences
	X		independent study
		X	self directed learning (free learner concept)
	X		learning contracts (contingency management)
X			quest or project activity
			Group Inquiry Systems
	X		inductive teaching
	X		simulation and games
	X		socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
	X		student self actualization
		X	self actualization of instructional personnel
		X	interpersonal competence
		X	communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
	X		parental involvement
		X	non certified professionals used in instruction
			community facilities use
		X	public agencies
		X	private agencies
		X	community controlled schools
		X	proprietary schools

TABLE X

A COMPONENT CHECK-LIST FOR A Multi-Unit Instructional Model

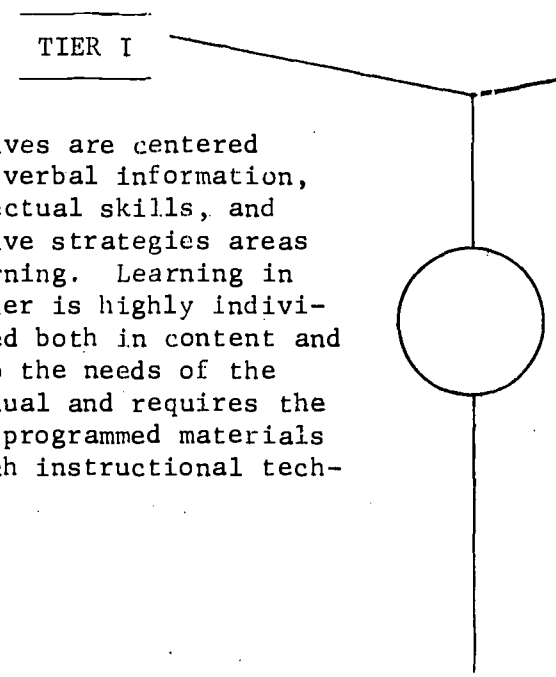
An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
		X	student self evaluation
X			multidimensional performance based assessment by teachers
		X	class achievement ranking by teacher
		X	no assessment
			teacher evaluations
		X	teacher self assessment
		X	criteria based assessment by superior, peers, and subordinates
	X		intuition based administrative ratings
		X	no assessment
			program evaluations
		X	program evaluation based on program objectives (cost effectiveness)
X			accountability assessment (evaluation of outcomes against objectives)
	X		program evaluations based on standard student achievement indices
		X	intuitive administrative ratings of program
		X	no assessment

THE THREE TIERED SCHOOL

The model of instruction proposed for the Three Tiered School is one of the few found in the literature which clearly was developed with the problems of the urban child in mind. Weinstein and Fantini (1968) state: "The urban context is one in which there is persistent stress imposed by intensely concentrated social realities." In unmistakable language they point out the ridiculous way in which urban schools have attempted to divorce themselves from this reality by emulating the view of reality reflected in suburban schools.

Table XI indicates the objectives upon which each of the tiers of this model are based. In Tier I, skills and knowledge development are required. The objectives in Tier I are those which have been dominant in the past and continue to "rule the educational roost." They are the objectives for which most of the other innovative models of instruction reported in this study were developed. The value of students achieving in this objective area is not disputed by the Three Tiered Model of Instruction, yet the prime motivating force behind the model is a compulsion to place these legitimate objectives in their proper perspective in an urban setting. Tier II objectives differ markedly from those in Tier I. Here, whatever latent talents or abilities existing in a child are drawn forth from him through inquiry. In Tier II, as in Tier I, instruction is highly individualized, however, unlike it, little content is fed the child. This second tier is the interest phase of the child's learning encounter--an area where he may explore freely and engage in activities ranging from playing the tuba to directing a play, or doing extensive research in a topic of personal relevance. Here, the concern is frequently with identifying and developing talents associated with a choice of vocation. Feldman (1966) states: "A major objective of the elementary school

TABLE XI



Objectives are centered around verbal information, intellectual skills, and cognitive strategies areas of learning. Learning in this tier is highly individualized both in content and pace to the needs of the individual and requires the use of programmed materials and much instructional technology.

Here, the emphasis is on facilitating the development of individual creativity and the exploration of interests. Talents associated with vocational pursuits are encouraged. The instructional staff must be learning facilitators rather than instructors in a content area. Skills learned in Tier I are often given practice by the learner in this tier.

The personalogical and sociological aspects of the concepts of identity, connectedness and power are explored by the students and staff of this tier. In tiers I and II, the student learns concepts and content by viewing phenomena as an objective observer--in tier III, the learner is involved as a subjective participant. Instead of learning to analyze he would be learning to act. The emphasis here is on the affective domain or feeling domain of the student.

education should be to seek out the talent in each [child] and show its relationship to the world of work." Tier III may be thought of as a group inquiry into the social realities imposing stress on the individual child; the issues and problems of social action which are a part of his everyday life. The objectives for this tier relate to issues of the child's personal identity, his connectedness with others, and the role which power plays in his social context. According to Weinstein and Fantini (1968), Tier III is "highly clinical and experiential, although still retaining a cognitive flavor, since we do not wish children merely to experience, but rather to utilize cognitive organizers for getting the most mileage from their experiences." Tier III allows for a greater emphasis on the affective aspects of education than any of the other two tiers.

The three tiers must be viewed as curricular missions, none of which are completely isolated from the others, but instead with overlapping functions. Weinstein and Fantini in the NEA Journal (1968), illustrate this relationship:

> ...it is obvious that knowing something cognitively does not always result in behavior that follows in that knowing. This is because knowledge alone cannot influence total behavior. Moreover, all kinds of knowledge are not equally influential. The missing ingredient in this equation seems to be knowledge that is related to the affective or emotional world of the learner.

The use of time and staff are also considered in this instructional model. It is unlikely that the model would prove viable within the confines of a conventional school schedule. An extended school day is proposed, where school and out-of-school instructional centers are open at least 12 hours of the day, six and even seven days a week. The basic organization and management of studies would normally find a place during the hours of 9:00 a.m. to 3:00 p.m. but once the child begins certain activities, he

would not need to confine his attention to those pursuits to a school day. The staffing structure suggested by the Three Tiered Model is one of extensive horizontal differentiation. Here, teachers who are technically inclined or consider themselves to be most expert in a subject matter area would be staffed in the first curriculum tier. Those instructional personnel who showed aptitude in a wide range of interests, and found pleasure in inductive teaching and dealing with the ambiguity of divergent behavior among children would likely be found in Tier II. Creativity would be an essential requirement in this tier. Child-situation-oriented teachers capable of collaboration with the community on social action projects and identity training would fit in Tier III.

Community involvement in the various tiers is essential to the model as is the instruction and modeling influence of older students for their younger school mates.

By organizing the school curriculum into the three general dimensions stated above rather than according to subject matter learning per se, the Three Tiered Model of Instruction proposes a means of making the educational process significantly more efficient in dealing with the cognitive and affective domains of learning, in addition to making it more successful in preparing the child to encounter the social and cultural realities of an urban environment.

The Three Tiered School Instructional Model has several areas of emphasis which contrast with the other models of instruction dealt with in this study. In Table XII, it may be observed this model stresses the purpose of attitude development--the affective domain--more than any model reported. It is one of the few which identifies the urban center as an out-of-class instructional center. Few of the models allow for the student to make decisions concerning

TABLE XII

A COMPONENT CHECK-LIST FOR Three Tiered Model of Instruction

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
		X	open concept learning areas
	X		traditional space structures
	X		flexible classroom use
X			resource centers
	X		student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
X			urban/rural
X			community facilities use
			INSTRUCTIONAL USE OF TIME
		X	traditional 5-7 period day/structured elementary school day.
	X		block scheduling
		X	daily demand scheduling
X			open schedule
X			year around school
X			extended school day
			SCHOOL PERSONNEL UTILIZATION
		X	traditional staff use(all certified equally)
	X		team teaching
	X		interdisciplinary teaming
	X		use of instructional aides
X			older students teaching younger students
	X		differentiated staffing
X			using community volunteers (non certified)
X			teacher role specialization
			involvement of teaching staff in instructional
X			decision-making

TABLE XII A COMPONENT CHECK-LIST FOR Three Tiered Model of Instruction

An essential component	An important component	Not a component	
			TEACHING METHODOLOGIES
			Cybernetic Systems
	X		computer assisted instruction
	X		audio-tutorial instruction
X			programmed instruction
	X		programmed instructional T. V.
		X	computerized games
		X	auto-adjunct instruction
X			lecture/assignment/feedback
			Idiosyncratic Systems
X			open laboratory experiences
X			independent study
X			self directed learning (free learner concept)
X			learning contracts (contingency management)
X			quest or project activity
			Group Inquiry Systems
X			inductive teaching
X			simulation and games
X			socio-drama and role playing
X			collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
X			student self actualization
X			self actualization of instructional personnel
X			interpersonal competence
X			communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
	X		parental involvement
	X		non certified professionals used in instruction
			community facilities use
X			public agencies
	X		private agencies
	X		community controlled schools
		X	proprietary schools

TABLE XII

A COMPONENT CHECK-LIST FOR Three Tiered Model of Instruction

An essential component		An implied factor		Not a factor	EVALUATION STRUCTURES
					student evaluations
		X			student self evaluation
		X			multidimensional performance based assessment by teachers
				X	class achievement ranking by teacher
				X	no assessment
					teacher evaluations
				X	teacher self assessment
		X			criteria based assessment by superior, peers, and subordinates
				X	intuition based administrative ratings
				X	no assessment
					program evaluations
				X	program evaluation based on program objectives (cost effectiveness)
		X			accountability assessment (evaluation of outcomes against objectives)
				X	program evaluations based on standard student achievement indices
				X	intuitive administrative ratings of program
				X	no assessment

the materials he will select to study (most allow this decision within a limited number of alternative sources), few provide the freedom of students selecting the method of study, but most allow for the student to select his own pace. In Tier II of this model, it appears the student is free to make material, method and pace selections. In Tier III they may be made jointly between the student and teacher, and Tier I appears to be highly controlled by the teacher who wishes to expedite the learning of the basic skills so more student time may be spent in the other two tiers.

The curriculum patterns clearly indicate a problem centered approach with the issues of educating individuals for an urban environment receiving attention. The Three Tiered Model, with its division of the student's school experience into three separate types of learning encounters, allows for a very broad methodological approach. The first tier tends to be oriented toward the use of cybernetic systems, the second tier employs idiosyncratic systems, and the third tier is based on the systems of group inquiry.

The evaluation of student performance is not dealt with to any extent in the model as it is developed to this date. Certainly the implication is given that criteria will be developed to measure student performance but the diagnostic and prescription functions spelled out so clearly in other models is not present. Little or no attention is given to the evaluation of the teaching staff, nor to their initial selection except for some sketchy role descriptions. Program accountability is implied, but little development has taken place in this model aspect as well.

The Middle School

The predominant pattern for organizing youngsters for instruction in this country is based on an age-grade level grouping of students. Typically

over the past 60 years, groups of age-graded students in the public schools have passed through the twelve sequential grades in two distinct phases: an elementary phase, and a secondary phase. Since the 1950's that pattern has shifted and three phases emerged: the elementary, an intermediate, and a secondary phase. In 1965 according to the NEA Research Service, 68% of the schools in 450 systems around the country were using intermediate schools.

Although many of the questions concerning the optimum size of the school student body, the range of the graded sequence included in each unit, and the ideal age for moving the child from one phase into the next, have never really been resolved, the predominant pattern is now the 6-3-3 grade-clustering system. Typically the first six grades of children are housed together for instruction in an elementary curriculum. The top three grades are grouped together in a high school where they complete their secondary education. According to William Booth (1969), the middle three grades have been housed together "so [students] can be given exploratory experience...[allowing] them to sample a variety of subject areas before commitment to a specific program in the senior high school." This bridge was first designated the junior high school and consisted of grades 7, 8, and 9. It seems the junior high school title was taken too literally by many of those planning for instruction and teaching children during this transition stage, and the intermediate phase became nothing more than a downward extension of the high school.

In this climate of confusion and dissatisfaction with the role being played by the junior high school, the concept of the middle school was born. The middle school concept which has recently been a center of much attention calls for the reinstatement of the four year high school, and the establishment of a middle school between the elementary grades and the high school. The grade patterns most commonly suggested for the middle school are 5-3-4,

4-4-4, and the 6-2-4. In that same study, the NEA Educational Research Service (1965) found that the numbers of schools moving from a traditional grading pattern to a middle school pattern increased more than five percent during the period 1963 to 1968. Eleven percent of the schools reporting claimed to have adopted the middle school concept.

The shuffling around of grade clusters or the re-christening of the old junior high school in and of itself does not constitute a new model of instruction. Unfortunately a great many of the school districts claiming to have adopted the middle school concept are guilty of this self-deception. Dwight W. Allen (1969) indicated that the misapplication of the concept is so widespread that one might justly perceive the middle school as a gimmic for beleaguered administrators to juggle students to temporarily overcome space problems and to appear innovative in the process, simply by making a few non-substantive changes in the junior high schools in the district.

This author was compelled to include the concept in this listing of new instructional models only after surveying the literature--and then so very reluctantly, due to the concept's dismal track record in the field--and finding there indeed is comprehensive rationale for reorganizing the middle grades.

William Alexander (1968) defines the middle school as:

> ...one providing a program planned for a range of older children, pre-adolescents, and early adolescents that builds upon the elementary school program of earlier childhood and in turn is built into the high schools' program for adolescence.

Based on an assessment of the special needs of the 10 to 14 age group, Alexander proposes a special curriculum which would ease the transition from childhood to adolescence. He would create a structure which bridges the gulf between the elementary school with its self-contained classroom and the departmentalized high school. Alvin Howard (1968) points to the idealism of children in

this age group; their need for security, their preoccupation with being accepted into the peer group and their looking to the adult for help; as evidence supporting the creation of a special teaching methodology and content for middle school youngsters. Tanner, in his Growth at Adolescence,(1962) suggests that as a result of recent cultural changes such as earlier dating, going steady, and pairing off, along with earlier maturation which is partially due to better nutrition and improved socio-economic conditions, children of the middle school age-group are faced with exaggerated tensions and anxiety, William Booth (1969) builds on this argument to suggest that an educational design capable of accommodating the uniqueness of the students of these ages be adopted.

The NEA Educational Research Service (1965) suggests the following as distinguishing features of the middle school:

1) A span of at least three grades to allow for the gradual transition from elementary to high school instructional practices. (Must include grades 6 and 7 and no grades below 5 or above 8).

2) Emerging departmental structure in each higher grade to effect gradual transition from the self-contained elementary classroom to the departmentalized high school.

3) Flexible approaches to instruction: team teaching, flexible scheduling, individualized instruction, independent study, tutorial progress--and other approaches aimed at stimulating children to learn how to learn.

4) Required special courses taught in departmentalized form, such as industrial arts, home economics, foreign language, art, music, and typing. Frequently an interdisciplinary approach is used, e.g., 'unified arts,' 'practical arts,' 'humanities,' 'performing arts,' 'urban living.'

5) Guidance program as a district entity to fill the special needs of this age group.

6) Faculty with both elementary and secondary certification, or some teachers with each type (unit special training and certification are available for this level).

7) Limited attention to interschool sports and social activities.

Included in the definition of the middle school must be a description of the curriculum. Thomas E. Curtis (1968) emphasizes the need of moving away from adherence to the Carnegie Unit and overbalance of academic subjects. The individualizing of instruction is a prerequisite. Through the use of flexible scheduling, student structured time or independent study, continuous progress programs, and flexible space use, the curriculum can focus on the unique needs and concerns of the individual child. Booth (1969) warns that a guidance program must be an integral part of any middle school program:

> ...as the student moves from the one-teacher association which he has experienced in the elementary school to the departmentalized concept with a number of teachers, the role of the guidance counselor becomes increasingly important. The need for security and stability of the pre-adolescent is strong, as it is with the younger child who receives such psychological support from the single teacher found in the typical elementary school. The counselor can soften this transitional stage in the student's development.

Pumerants (1968) cites the need for special training of middle school teachers. He suggests, that with special training, teachers could accomplish all that is proposed in the middle school concept in a standard junior high school setting.

Table XIII indicates that the emphasis of the middle school as a new instructional model is indeed a structural one--the problem of reorganizing the clustering of grades within the 1-12 hierarchy. Of perhaps equal importance is meeting the psychological and physiological peculiarities of adolescent children. Not included in this model in any concrete way are changes in the way children will undergo learning prescriptions, evaluations of their behavior, or specific models for instruction. In no specific sense is any program of instruction proposed--only the general context is described. The axiom of "much flexibility" is intended to provide for the different programs which will develop in the prescribed context.

TABLE XIII

A COMPONENT CHECK-LIST FOR A Middle School Model of Instruction

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
	X		open concept learning areas
	X		traditional space structures
X			flexible classroom use
X			resource centers
	X		student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
		X	urban/rural
		X	community facilities use
			INSTRUCTIONAL USE OF TIME
	X		traditional 5-7 period day/structured elementary school day.
	X		block scheduling
		X	daily demand scheduling
		X	open schedule
		X	year around school
		X	extended school day
			SCHOOL PERSONNEL UTILIZATION
	X		traditional staff use(all certified equally)
X			team teaching
	X		interdisciplinary teaming
X			use of instructional aides
	X		older students teaching younger students
	X		differentiated staffing
	X		using community volunteers (non certified)
X			teacher role specialization
	X		involvement of teaching staff in instructional decision-making

TABLE XIII

A COMPONENT CHECK-LIST FOR A Middle School Model of Instruction

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
	X		standard big 4 curriculum: Math, Science, English, Social Studies
		X	core curriculum
X			interdisciplinary curriculum
		X	occupational/vocational
X			sociological problems oriented
X			student centered
X			student mastery of verbal information
X			student mastery of intellectual skills
X			student cognitive skills development
X			student attitude development
			INSTRUCTIONAL MANAGEMENT
X			standard class-size student groups
	X		homogeneous grouping
	X		variable grouping
	X		flexible grouping
		X	advanced placement
	X		ability grouping
	X		performance based instruction
	X		individually prescribed instruction
	X		criterion referenced testing
	X		time based instruction
	X		norm referenced testing
	X		continuous student progress
	X		age-grade student progress
X			student paced learning
	X		student selection of materials
		X	student selection of instructional methods
X			teacher paced learning
X			teacher selection of materials
X			teacher selection of instructional methods
	X		materials paced learning
	X		situational selection of pace, materials, and methods
	X		individually guided motivation
	X		student involvement in instructional decision making

TABLE XIII

A COMPONENT CHECK-LIST FOR A Middle School

Model of Instruction

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
X			audio-tutorial instruction
X			programmed instruction
	X		programmed instructional T. V.
		X	computerized games
	X		auto-adjunct instruction
X			lecture/assignment/feedback
			Idiosyncratic Systems
	X		open laboratory experiences
X			independent study
	X		self directed learning (free learner concept)
	X		learning contracts (contingency management)
X			quest or project activity
			Group Inquiry Systems
X			inductive teaching
	X		simulation and games
	X		socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
X			student self actualization
		X	self actualization of instructional personnel
		X	interpersonal competence
	X		communication
		X	teacher professionalism
			COMMUNITY RESOURCE USE
	X		parental involvement
	X		non certified professionals used in instruction
			community facilities use
		X	public agencies
		X	private agencies
		X	community controlled schools
		X	proprietary schools

TABLE XIII

A COMPONENT CHECK-LIST FOR A Middle School Model of Instruction

An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
		X	student self evaluation
		X	multidimensional performance based assessment by teachers
	X		class achievement ranking by teacher
		X	no assessment
			teacher evaluations
		X	teacher self assessment
		X	criteria based assessment by superior, peers, and subordinates
		X	intuition based administrative ratings
		X	no assessment
			program evaluations
		X	program evaluation based on program objectives (cost effectiveness)
	X		accountability assessment (evaluation of outcomes against objectives)
	X		program evaluations based on standard student achievement indices
		X	intuitive administrative ratings of program
		X	no assessment

The School Within a School (House Plan)

A study directed by John Kleinert (1969) indicates the size of a school influences its effectiveness. There are many studies concerning the decreasing effectiveness of schools as they lose enrollment. But Kleiner's study stands almost alone in analyzing the effects of increasing enrollments. In an era of administrative uncertainty concerning the maximum desirable enrollment for a high school Kleinert attempted to identify indicators of effectiveness against which school size might be evaluated. Concerning this search he reflects:

> ...the results of this study...indicate decreased student involvement in activities as high schools grow larger. This is usually viewed as undesirable by students, parents, teachers, and administrators who believe that participation in student activities is basic to learning cooperation and leadership, as well as to having a rich and enjoyable high school experience.

Kleinert found that the greatest fall in student participation in school activities occurs when small schools (600 students or less) grow larger, as opposed to large schools (more than 600 students) growing even larger. Such findings suggest an organization of 600 students or less to facilitate greater student participation in the activity program.

There are, of course, other reasons behind the school within a school model for instruction. John Guernsey, in an article describing the house plan used at Adams High School, Portland, Oregon (1970), discloses one of the major tenents of the school; that students learn better and teachers teach better when there is an intimate informal relationship and a level of trust and understanding between the teacher and the student. Guernsey offers the following description of the house plan Adams uses to combat the impersonality of largeness:

> ...Adams operates as four smaller high schools in one--at least for the general education program and for administrative purposes such as counseling and disciplining. Each smaller school--known as a

> house--has about 300 students, mixed as to class (freshmen, sophomores, juniors), race, and social and economic background. Two teams of teachers work with the students in each house, and the same teachers stay with the same students as much as possible for more than one academic year.

At Adams the counselors are an integral part of each of the house teams. They are found working with the other teachers and students throughout each day and thus get to know each student on a personal basis. They are in a much stronger position to help the student and to help a teaching colleague improve their own counseling abilities because of this unique position on the instructional team. Decision making among the students and faculty at Adams is based on the principle that one of the prime missions of the American high school is to teach students how democracy works, and to prepare them to be better qualified citizens. With such a goal in mind, Adams is experimenting with a number of governance strategies which may permit a majority rule vote by the students and faculty to determine some school issues. A school legislature, made up of student-elected and faculty-elected senators who represent their respective peers, meets regularly on issues related to curriculum, grading and other issues directly effecting the student and faculty. Through the hiring of clinical professors, who hold joint appointments with local teacher training institutions, both the preservice and in-service training of teachers is performed as an ongoing function of the school. Trainees from various universities in the state, and some out-of-state institutions, serve as interns and aides as they observe and practice skills learned in the academic part of their preparation. A description of the Adams School by Gordon McIntosh and John L. Parker (1969) provides many more details about this version of the School-within-a-school instructional model:

> Adams High School will be divided into four houses, each containing 250 students, and led by a curriculum associate or house master. Each house will contain a guidance counselor, and two houses will share a guidance intern. The teachers in each house will be organized into two interdisciplinary teams. These teams will have an

> English teacher, a Social Science teacher, and either a Math or Science teacher, one intern, one student teacher, and one aide. One teacher on each team will be designated leader. These two teams will design, implement, and evaluate an interdisciplinary instructional program for their house. Additionally, consultant groups in the fields of art, music, foreign languages, home economics, business education, and industrial education will work closely with all eight teams in the development of interdisciplinary curriculum.

Each student, according to the Adams plan, will spend about half of the school day in their house. During the other part of the day the student will be engaged in elective curriculum choices. A teacher hierarchy is planned which includes instructional roles for aides, assistant teachers, associate teachers, teachers, team leaders, and curriculum associates. The responsibilities and salaries of these roles are defined fairly loosely. For example, the curriculum associate's duties include about 40 percent of his time to be spent in curriculum development, 30 percent in supervision, 20 percent in instruction, and 10 percent in administration.

In a 1968 publication by Dobbins, Parker, Schwartz, and Wertheimer, the objectives behind the selection of the School-within-a-school model for instruction were listed as follows:

1. To make it possible for student teachers to be introduced gradually to the tasks of teaching under the tutelage of master teachers;
2. To provide more integration between the theoretical and practical aspects of the training of student teachers and interns;
3. To create a climate in which teachers can plan, analyze, and evaluate their teaching in groups as well as individually;
4. To enable teachers to think about their instructional objectives across disciplinary lines and to develop a problem-centered approach to curriculum;
5. To explore ways in which paraprofessionals can be used to free teachers for exclusive concentration on tasks related to teaching;

6. To develop a differentiated staffing pattern that will make teaching a more viable career, both professionally and financially;

7. To involve teachers directly in the process of curriculum development;

8. To involve teachers in the formulation of the philosophy and curricular objectives of the school.

Other goals listed in this report have been compiled in the following short list.

a. To design an educational program that is relevant to the needs and interests of adolescents, especially those who are not headed for further education.

b. To widen considerably the range of courses or experiences that students can choose; and to provide more opportunity for students to explore adult roles and to familiarize themselves with the world of work.

c. To create a democratic sense of community within the school.

d. To involve students in planning their own education.

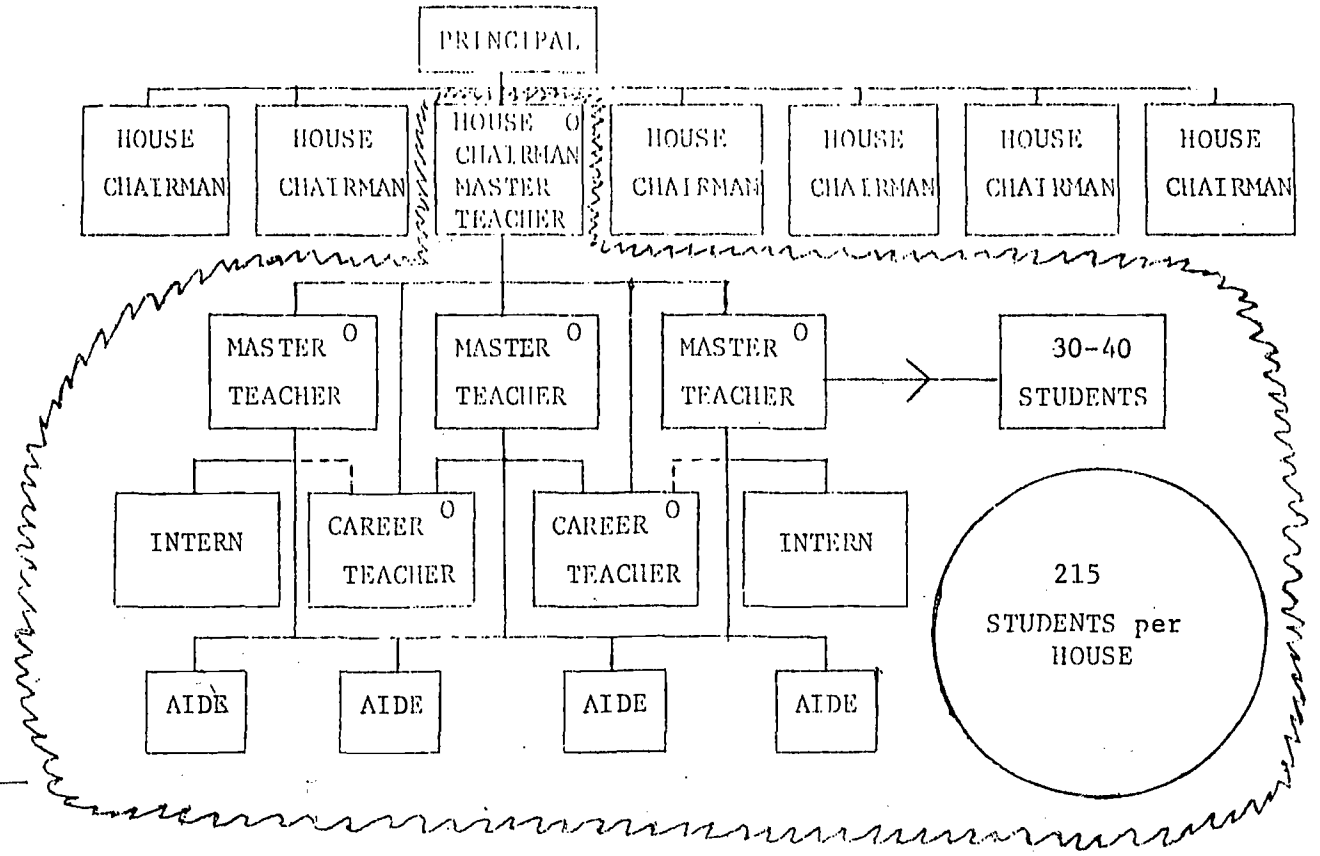
e. To involve students in the life of the community as much as possible by devising new ways of using the physical and cultural resources of the city for instructional purposes.

f. To achieve interpersonal sensitivity, common purpose, and smooth working relationships within the (teaching) team.

g. To improve upon present (administrative) practice by placing the management of a comprehensive high school in the hands of people with training in supervision and the analysis of teaching, and by making these activities central to the work of the school.

Table XIV contains a graphic representation of a fairly typical model of a house plan. Although this was taken from a source in no way related to the Adams model, one can readily see the similarity between the goal descriptions for the Adams school and the model.

TABLE XLV



Taken from Burr (1969)

It seems rather obvious that the school-within-a-school concept is primarily a structural model of instruction. That is to say, its emphasis is on altering traditional structures of school size, staff utilization, teacher training designs, and school governance. Little emphasis is given to the methodology of instruction or the curriculum content, although the concern this model places on interpersonal sensitivity, and group process suggests some rather far-reaching methodological and content changes where it is implemented. Table XV demonstrates additional areas of emphasis.

TABLE XV

A COMPONENT CHECK-LIST FOR School-Within-a-School Model of Instruction

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
		X	open concept learning areas
	X		traditional space structures
X			flexible classroom use
X			resource centers
	X		student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
		X	urban/rural
		X	community facilities use
			INSTRUCTIONAL USE OF TIME
	X		traditional 5-7 period day/structured elementary school day.
	X		block scheduling
		X	daily demand scheduling
		X	open schedule
		X	year around school
		X	extended school day
			SCHOOL PERSONNEL UTILIZATION
		X	traditional staff use(all certified equally)
X			team teaching
X			interdisciplinary teaming
X			use of instructional aides
	X		older students teaching younger students
X			differentiated staffing
X			using community volunteers (non certified)
X			teacher role specialization
			involvement of teaching staff in instructional
X			decision-making

TABLE XV

A COMPONENT CHECK-LIST FOR School-Within-a-School Model of Instruction

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
	X		standard big 4 curriculum: Math, Science, English, Social Studies
		X	core curriculum
X			interdisciplinary curriculum
X			occupational/vocational
	X		sociological problems oriented
X			student centered
X			student mastery of verbal information
X			student mastery of intellectual skills
X			student cognitive skills development
X			student attitude development
			INSTRUCTIONAL MANAGEMENT
		X	standard class-size student groups
		X	homogeneous grouping
X			variable grouping
X			flexible grouping
	X		advanced placement
		X	ability grouping
	X		performance based instruction
	X		individually prescribed instruction
	X		criterion referenced testing
		X	time based instruction
		X	norm referenced testing
	X		continuous student progress
		X	age-grade student progress
X			student paced learning
	X		student selection of materials
	X		student selection of instructional methods
X			teacher paced learning
X			teacher selection of materials
X			teacher selection of instructional methods
	X		materials paced learning
X			situational selection of pace, materials, and methods
	X		individually guided motivation
	X		student involvement in instructional decision making

TABLE XV A COMPONENT CHECK-LIST FOR School-Within-a-School Model of Instruction

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
	X		audio-tutorial instruction
	X		programmed instruction
		X	programmed instructional T. V.
		X	computerized games
		X	auto-adjunct instruction
	X		lecture/assignment/feedback
			Idiosyncratic Systems
	X		open laboratory experiences
X			independent study
	X		self directed learning (free learner concept)
	X		learning contracts (contingency management)
	X		quest or project activity
			Group Inquiry Systems
	X		inductive teaching
	X		simulation and games
	X		socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
	X		student self actualization
X			self actualization of instructional personnel
X			interpersonal competence
X			communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
X			parental involvement
	X		non certified professionals used in instruction
			community facilities use
		X	public agencies
		X	private agencies
		X	community controlled schools
		X	proprietary schools

TABLE XV

A COMPONENT CHECK-LIST FOR School-Within-a-School Model of Instruction

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
	X		audio-tutorial instruction
	X		programmed instruction
		X	programmed instructional T. V.
		X	computerized games
		X	auto-adjunct instruction
	X		lecture/assignment/feedback
			Idiosyncratic Systems
	X		open laboratory experiences
X			independent study
	X		self directed learning (free learner concept)
	X		learning contracts (contingency management)
	X		quest or project activity
			Group Inquiry Systems
	X		inductive teaching
	X		simulation and games
	X		socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
	X		student self actualization
X			self actualization of instructional personnel
X			interpersonal competence
X			communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
X			parental involvement
	X		non certified professionals used in instruction
			community facilities use
		X	public agencies
		X	private agencies
		X	community controlled schools
		X	proprietary schools

TABLE XV

A COMPONENT CHECK-LIST FOR School-Within-a-School Model of Instruction

An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
		X	student self evaluation
X			multidimensional performance based assessment by teachers
		X	class achievement ranking by teacher
		X	no assessment
			teacher evaluations
	X		teacher self assessment
X			criteria based assessment by superior, peers, and subordinates
		X	intuition based administrative ratings
		X	no assessment
			program evaluations
		X	program evaluation based on program objectives (cost effectiveness)
X			accountability assessment (evaluation of outcomes against objectives)
		X	program evaluations based on standard student achievement indices
		X	intuitive administrative ratings of program
		X	no assessment

The Parkway Program

Most of the models of instruction reported to this point resulted from rather careful descriptions of what should exist to replace the conventional instructional model. And each is unique in its own way because of a peculiar twist in its reorganization of the components of an instructional model. The Parkway Program is unusual in the fact that it has probably departed the furthest from a traditional organization called school. In a sense, the Parkway Program represents a non-structure of education. So capably put by Resnik (1970) "Parkway is a school without grades, marks, arbitrary rules, authority figures, a building--or, (as) its advocates claim, boredom." He continues that the strength of the program is its brushing aside the notion that learning must take place within the four-walled boxes called classrooms, and is built on knowledge that life and learning are all part of the same ongoing process. For the Parkway program, Philadelphia is the classroom, and the life of the city is the curriculum.

Parkway students, according to Resnik:

> ... can be found through central Philadelphia in offices, museums, science centers, hospitals, theaters, department stores; in luncheonettes, in the Automat, on street corners and stairways. They can opt for such courses as law enforcement at the administration building of the Police Department, library science at the public library, and biology at the Academy of Natural Science. In fact with all of Philadelphia as a resource, Parkway students are free to study just about anything that may interest them.

Greenberg and Roush (1970) describe the School without walls, as a year around program with entirely new academic boundaries, one which provides a new framework in which many new and different resources can be marshalled for education--energy which can be used in learning, not in maintaining an outdated inefficient system.

John Bremer (1970), Director of the Parkway Program describes his model of instruction as follows:

> There is no schoolhouse, there is no separate building; school is not a place but an activity, a process. We are indeed a school without walls. Where do the students learn? In the city. Where in the city? Anywhere and everywhere.

Three basic organizational units called communities make up the limited structure which does exist in the Parkway Program. These are Alpha, Beta, and Gamma, each comprised of approximately 150 students who are subdivided into 15 tutorial groups. One university intern and a full-time faculty member are responsible for each tutorial group. They provide whatever counseling is necessary, and offer personal encouragement and support to the students under their tutelage. This tutorial group is the unit where the acquisition of basic skills in language and mathematics occurs. In addition to this unit there is a management group whose function is to provide the services required by the day-to-day operations of the program. Students may choose to participate in this management group and chus be involved in determining the nature of their program. A Town Meeting is held once each week where the whole community may discuss and resolve problems relevant to the operation of the program.

Parkway offers its students a four-year full-time program, and satisfies state requirements. It is run much more like a college with an urban campus than a high school.

In the academic curriculum there are institutional offerings, basic skills offerings, and elective offerings. The institutional offerings are normally sponsored by participating Parkway institutions (i.e., the YWCA, the Franklin Institute Planetarium, or the Academy of Natural Science) at the request of students. In May of 1970 more than 200 institutional offerings

were available to the student. The basic skills offerings, as described above are math and language art courses taught by the Parkway staff in tutorial group sessions. The elective offerings are classes taught by the Parkway staff in the humanities, the social studies and the physical sciences. According to Greenberg and Roush (1970)

> Conventional grading patterns are not used; courses are only offered on a credit, no-credit basis. In addition to the academic curriculum, each student is encouraged to conduct a special problems course in an area of his own interest and to participate in work programs of the Parkway institutions as an extra non-graded component.

Students have easy access to the director, Dr. John Bremer, whose desk is located in the second floor quarters of an old office building which serves as the "home" of the first Parkway unit of 130 students, 9 teachers, and 10 university student teaching interns. In the Spring of 1970 there were four such units operating. Since Bremer had received at that time more than 10,000 applications from high school students to be chosen for the 500 places that are available in the program, there certainly is no question of student impressions of the program. Five hundred teachers applied to be hired for the 15 new openings slated for the 1970 school year.

Bremer (School Management, 1969) described the selection process for teachers and students.

> No one student or teacher gets assigned to the Parkway program. Students are chosen by lottery--15 from each of the eight school districts and 10 from applicants who have been attending parochial, private, and suburban high schools.

Table XVI contains the form used by students applying for admission to the program. Teachers, however, are carefully screened. It takes a very secure person to teach at Parkway. According to Mary Davis, executive director of the YWCA who taught a course last year in contemporary conflicts, "People who have become too institutionalized can't do it." Most of the

teachers elected for the Parkway Program had taught previously in the Philadelphia system--few are beginning teachers.

In an article in School Management (December 1969) the program director reports:

> ...teachers work hard. Each one teaches from two to eight courses. Unit heads teach and so (does the director). And the teachers do the legwork to find places in which to meet. They build contacts in the cooperating institutions, and they spend a lot of time counseling and keeping in touch with students' families. They need a lot of energy.

It appears that at times teachers perform almost a social work function; contacting parents, telephoning and visiting, and working with each child in the context of the neighborhood and home environment in which he lives. The teacher in his tutorial role is the glue which holds the Parkway Program together.

The evaluation of student performance takes place in the tutorial group, as part of the regular function of that organizational unit. Students are also involved in an evaluation effort during the year-end critique of teachers and courses. The program as a whole is constantly undergoing an evaluation to provide information relevant to the modification of the program's course structure.

When asked how he manages to direct a program which is completely unstructured, Bremer (1970) replies,

> It isn't,....it is simply structured programmatically. We're all so used to schools and other institutions being structured administratively that any radical change is hard to grasp.

The Component Check List, Table XVII, demonstrates the scope of the School Without Walls model. Perhaps the most striking difference in this check list from those listed previously are the categories of time and space, staff utilization, and instructional decision making. The greatest difference lies

TABLE XVI

BOARD OF EDUCATION

From: John Bremer, Director
The Parkway Program
1801 Market Street
Philadelphia, Pennsylvania 19103

Phone: 448-3718

The Parkway Program is like a high school.

In some ways.

It offers a four-year full-time program; it gives a diploma; it satisfies state requirements.

And in some ways, it isn't.

The Parkway Program will not be a school with classrooms or bells. The organizations around the Benjamin Franklin Parkway will provide laboratories, libraries, and meeting space. Although participation will only be required for the length of the normal school year, study and work programs will be available year-round. Students and faculty will form small groups for discussion, study, counseling, and self-evaluation. Learning situations will vary from films, jobs, and lectures to special projects.

The Parkway Program is a chance for you, the student, to build your own education. You will use the Parkway, the seminar and tutorial groups to design your learning program. The institutions around the Parkway will give special offerings; the teachers will have special skills and interests. You can work, get job training, take courses, do independent study, work on research projects. You can work on these by yourself, with fellow students, with faculty, and with individuals from the institutions. Vocation: College Preparatory: Do you want to study city government, be a reporter for a newspaper, improve your ability to read and write, get secretarial training, study electronics at the Franklin Institute or art with the Philadelphia Art Museum?

This Program is a chance for you to expand your education in as many ways as you -- and the Parkway -- can create.

ADMISSIONS

Any Philadelphia public school student (in grades 9 - 12) can join the Parkway Program. The requirements are simple: the willingness of the student and a parent's signature. If there are more applicants than places, names will be publicly drawn from a hat, with provision made for equal distribution among the city school districts. The program is not designed for any special group of students. It doesn't matter what your subject grades are, whether you're in "modified" or "star", or what your grade in behavior is. The deadline for applications is 29 January 1969. The program will begin on 17 February 1969.

.....

PLEASE PRINT

I would like to join the Parkway program

Name_____ Present School_____
Address_____ Grade_____

in the manner of getting students to the appropriate resources rather than in the topics of study suggested. The model is definitely an urban model of instruction based on the premise that instruction should be served by a model or organization and administration rather than vise versa.

Although only one example of this model in operation was available in the literature, other experiments, based on this prototype, are being attempted in Chicago, and plans are underway in Kansas City, San Francisco, Hartford, and Washington, D. C.

TABLE XVII A COMPONENT CHECK-LIST FOR Philadelphia Parkway Program Model of Instruction

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
		X	open concept learning areas
		X	traditional space structures
		X	flexible classroom use
	X		resource centers
		X	student commons
			out-of-classroom instruction
		X	ocean/shore
		X	mountains/desert
X			urban/rural
X			community facilities use
			INSTRUCTIONAL USE OF TIME
		X	traditional 5-7 period day/structured elementary school day.
	X		block scheduling
		X	daily demand scheduling
X			open schedule
X			year around school
X			extended school day
			SCHOOL PERSONNEL UTILIZATION
		X	traditional staff use(all certified equally)
		X	team teaching
X			interdisciplinary teaming
X			use of instructional aides
X			older students teaching younger students
	X		differentiated staffing
X			using community volunteers (non-certified)
X			teacher role specialization
X			involvement of teaching staff in instructional decision-making

TABLE XVII

A COMPONENT CHECK-LIST FOR Philadelphia Parkway Program Model of Instruction

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
	X		standard big 4 curriculum: Math, Science, English, Social Studies
		X	core curriculum
X			interdisciplinary curriculum
	X		occupational/vocational
X			sociological problems oriented
X			student centered
	X		student mastery of verbal information
	X		student mastery of intellectual skills
	X		student cognitive skills development
X			student attitude development
			INSTRUCTIONAL MANAGEMENT
		X	standard class-size student groups
		X	homogeneous grouping
X			variable grouping
X			flexible grouping
	X		advanced placement
		X	ability grouping
	X		performance based instruction
	X		individually prescribed instruction
	X		criterion referenced testing
		X	time based instruction
		X	norm referenced testing
	X		continuous student progress
		X	age-grade student progress
X			student paced learning
X			student selection of materials
X			student selection of instructional methods
	X		teacher paced learning
	X		teacher selection of materials
X			teacher selection of instructional methods
	X		materials paced learning
X			situational selection of pace, materials, and methods
	X		individually guided motivation
X			student involvement in instructional decision making

TABLE XVII

A COMPONENT CHECK-LIST FOR Philadelphia Parkway Program Model of Instruction

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
		X	audio-tutorial instruction
	X		programmed instruction
		X	programmed instructional T. V.
		X	computerized games
		X	auto-adjunct instruction
X			lecture/assignment/feedback
			Idiosyncratic Systems
X			open laboratory experiences
X			independent study
X			self directed learning (free learner concept)
	X		learning contracts (contingency management)
X			quest or project activity
			Group Inquiry Systems
	X		inductive teaching-
		X	simulation and games
		X	socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
	X		student self actualization
X			self actualization of instructional personnel
		X	interpersonal competence
		X	communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
	X		parental involvement
		X	non certified professionals used in instruction
			community facilities use
X			public agencies
X			private agencies
		X	community controlled schools
	X		proprietary schools

TABLE XVII

A COMPONENT CHECK-LIST FOR Philadelphia Parkway Program Model of Instruction

An essential component		An implied factor		Not a factor	EVALUATION STRUCTURES
					student evaluations
		X			student self evaluation
X					multidimensional performance based assessment by teachers
				X	class achievement ranking by teacher
				X	no assessment
					teacher evaluations
		X			teacher self assessment
X					criteria based assessment by superior, peers, and subordinates
				X	intuition based administrative ratings
				X	no assessment
					program evaluations
				X	program evaluation based on program objectives (cost effectiveness)
		X			accountability assessment (evaluation of outcomes against objectives)
				X	program evaluations based on standard student achievement indices
				X	intuitive administrative ratings of program
				X	no assessment

The Leicestershire Model (British Infant School or Integrated Day Model)

The abolishment of the Eleven-plus Examination by the Leicestershire Education Authority, which at the age of eleven or twelve separated the university bound students from those 80% of the population who were destined to enter the secondary modern school and subsequently go into vocational training, began a trend which has had significant national impact on British Education. Grammar schools which formerly accepted only those students who passed the eleven-plus examination now accept all students who wish to continue in school until they become 16 years of age. Concurrent with their removing from the junior schools of Leicestershire the restriction of preparing all children for an examination which only 20% would pass, the Education Authority proposed a new kind of education more suitable for all children known as the Integrated Day.

In the words of Sealey, (ESI Quarterly Report, 1966):

> An integrated day is one in which there are no classes as such. Instead each child makes a unique synthesis of his learning experiences. The classroom is subdivided into specially-equipped working areas. Normally, one area is associated with science and mathematics, another with reading and language arts, a third with work in the visual arts, and a fourth serves as a general purpose area. In addition, certain classrooms have a space devoted to programmed learning or other special purposes. Occasionally, teachers may work in pairs... (allowing)...some specialist attention...relating to their own interest or particular abilities.

Anthony Kallet (Yeomans, 1968) captures much of the philosophy underlying the Integrated Day concept:

> Most standard classrooms are virtually barren of raw materials, of things, and are overloaded with prepared materials, heavily scored with pre-determined routes which allow only bogus exploration. The raw materials component of the environment is extremely important. The human components must make possible uses of the materials in accordance with the child's intent and perception of the inherent properties of the materials. By raw materials I mean all kinds of things, from pencils and paper to books and string and magnets and bottles and boxes, and paint and clay and mirrors and animals and....

Mario Fantini (1971) points to the different role of the teacher in the Integrated Day concept, in the British Primary schools and the Leicestershire system.

> There are many constructional and manipulative materials in each area where students work and learn. The teacher acts as a facilitator--one who assists and guides rather than directs or instructs. Most student activity is in the form of different specialized learning projects done individually and in small groups rather than in the traditional form where all students do the same thing at the same time. Many of the learning experiences and activities take place outside of the school building.

Snatches of conversation taken from an interview of the chief primary advisor for the Oxfordshire Education Authority, John Coe of Oxfordshire, England, by Vincent R. Rogers (Phi Delta Kappan, 1971), author of Teaching in the British Primary School, present other key components of this new model of instruction.

Rogers: Would you comment on the general state of primary education in England?

Coe: Development in this country has been to some extent piecemeal, depending on the particular local circumstances. To some extent, therefore, there are illusions about British primary education. People talk as if it is a thing that can be identified and that exists everywhere. We're not yet at that stage... (However) I think it fair to say that, nationally, child-centered education is spreading into most areas. Of course the infant schools (for ages five through seven) in this country have led the way.

Rogers: Are there some particular aspects of this change that you might want to comment on?

Coe: Let me mention first what we call cooperative teaching. Here we see primary teachers and their children breaking out of the four walls of the classroom and meeting other children and other grown-ups--teachers, helpers, or parents,--which gives children more than can be given by even the best teacher in the world within the space of four walls. We are also beginning to design school buildings based on very different principles which allow a far wider range of opportunities for children. All of this is happening without sacrifice to the great strength that lies in the close relationship between a group of children and their teacher.

Coe: (cont'd.) I would think now that in three out of every four primary schools I might walk into in the course of the day I will find parents inside school in some capacity or other. Not just observing, or assessing what is going on, or being informed about it, but being active participants in the act of learning. Perhaps setting up a discovery area, perhaps setting up a cooking area, or helping with rebinding books, doing some paperwork associated with the next school sale, or very often helping with school journeys--providing sympathetic, responsible adults with whom children move outside into the environment. We want, then, to create schools which will be very much more than purely institutions of learning--schools which will be, rather, community schools, so that we can educate the children through and with their families.

Roger: What are the new primary schools trying to achieve?

Coe: We have tried to achieve a reconciliation between the curriculum and the human being. We have become less particular about areas of the curriculum that we bring before our children. We allow these areas of concern, the content, to arise very much more from the children's interests.

Too often, in debate, it is assumed that they are opposites--either you're for attitudes toward learning and for the human matters related to growth, or you are for "content." It's not one or the other. We are achieving a reconciliation between content and human concern. So content has been modified in our schools--not removed entirely, but modified.

Rogers: What kinds of evidence do you have to support your view that your students are doing the best job? What happens when they move into the secondary schools, some of which, perhaps, are not really geared to working with children in this way?

Coe: The Department of Education and Science in London assesses the national standard of reading once every three years. And each study since the war has shown a progressive increase in the ability to read on the part of our young children. It's the same in the other skills. As we've relaxed our approach, as we've involved the children more deeply, as we've taught the skills out of the wider interests of the children, so has the basic standard of the basic skills gone up. And I've found increasingly that secondary schools are pleased to receive children who are still curious and interested and who still have their imagination and their flair for the whole business of living and learning. I'm sure I'm right in saying that our experience shows that we can have not only higher standards in the skills but better attitudes, too.

Yeomans (1968) adds to the description of the Leicestershire Model through his account of a visit to one of their grammar schools:

> A small individual (was) reading alone in a nook partitioned off from the outer bustle by screens that double as bookshelves.
>
> Two boys and a girl sawing and sandpapering wood on the carpenter's bench on the terrace.
>
> Three others painting at easels on the terrace.
>
> An animal-lover feeding the hamster; another observing the tadpoles in an aquarium.
>
> A group of six at tables in the center of the room with the teacher, working with attribute blocks and plastic and wooden shapes which, when combined correctly, make geometric patterns in either two or three dimensions.
>
> An older and a younger child at another table reading aloud to each other.
>
> A group of four making clay animals at the clay table.
>
> ...Teaching was taking place, but in unorthodox ways. The teacher had an eye for everything and everyone, but the children typically sought her aid on problems that were occupying them. She would visit a group who were writing stories and help them with their spelling; or hear an individual read aloud; or suggest another way of pressing clay into a mould; or invite someone who she thought had been doing puzzles long enough to "try reading this book." Older children were helping younger ones and then turning back to their own work.

The only formal "scheduled" events he witnessed during an entire week were a daily assembly period for singing and prayers, a gym period, recess and lunch. The remainder of each day was used by individual children following their own interests and choosing a learning activity.

The equipment of the Integrated Day classroom resembles that found in the better American pre-school nursery school programs. Table XVIII describes a typical inventory for such a classroom.

TABLE XVIII

Collection of minerals and shells
An aquarium
Beads
Large blocks for building
Attribute blocks
Globe
Plants in pots
Scales and weights
Multi-base mathematics blocks
Dolls
Magnifying glasses
Milk bar
Puppet theatre
Hamster
Microscope
Doll house
Wendy House
Crayons
Sewing materials
Plants
Paintings and posters
Cot
Sand table
Tub for water-play
Box of soil for growing seeds
Collection of metal objects
Magnets
Clay table
Batteries and bulbs
Xylophone
Books
Geo-blocks
Pencils
Aprons
First Aid kit
Bench and tools
Wood
Nails
Cardboard boxes
Poster paint
Brushes
2 easels
Mop and pail
Sink
Pram
Mirrors
Spinning cards
Cook-book
Stove
Clocks
Stern blocks
Dominoes
Abacus
Puzzles and games
Costumes
Blackboard
Lenses
Tools for clay work
Recorders

(taken from Yoemans, 1968)

During his visit to the Leicestershire schools, Yeomans interviewed a headmaster of one of the schools in an attempt to cut through the somewhat over optimistic testimonials he had been receiving from participating staff. The question was raised, "What would be done if a student wished to paint all day or move from stories to puzzles and never confront a real intellectual challenge?" The headmaster's reply was characteristic:

> Children who have been accustomed to learning in these ways make no distinction between what to others is work and what is play. These children throw themselves fully into everything they do--working playfully, if you will. That's what adults do who are absorbed in their jobs and happy in them. It is quite normal for children to function in the same way.

Despite the sometimes less than candid view offered by many of the people he interviewed, Yeomans reports in glowing terms his favorable impression of the Integrated Day model of instruction:

> ...they have so far avoided formulae, systems, and conformity. They are not out to prove one theory called "learning by doing," or another called "the ungraded primary," or a third called "programmed instruction." Instead, they have studied all theories, and have drawn upon those that seemed relevant to their situation, with classroom teachers' being the judges of what is relevant. It is this key role of the teacher, aided by the Advisory Center, that is unique in Leicestershire. (American) Progressives never achieved the Integrated Day in the elementary grades, partly because we did not have the many structural aids to learning that are available now, and partly because we have been fascinated by methods of grouping children for optimum learning. Having the former and being less constrained by the latter, the people of Leicestershire have discovered that learning is enhanced when there is individual, rather than group initiative and responsibility, and that genuine choice of activity is accompanied by genuine involvement in activity.

Table XIX indicates the different areas of emphasis which exist in this model of instruction. There it can be seen that the Leicestershire Model has dramatically restructured the use of instructional space, adopted a student-centered curriculum with a focus on idiosyncratic methods, and assumed a

continuous progress vertical organization. They have moved to an open schedule and have begun to restructure their model of staff utilization to include the concepts of team teaching, use of teacher aides, and teacher specialization.

Little is being done in the area of computer assisted instruction or pre-packaged instruction. Although there is community and parental involvement, they have not changed their base and entered the community for instructional purposes as did the Philadelphia Parkway Program.

The Leicestershire Model seems to follow the pattern of most previous attempts to "humanize" schools in its lack of emphasis on evaluation. It does not appear that hard data on the effectiveness of the program is available, nor will it be forth-coming in the near future, due to their apparent lack of performance-based objectives and criterion-referenced evaluation techniques.

TABLE XIX

A COMPONENT CHECK-LIST FOR The Leicestershire School Instructional Model

An essential component	An implied factor	Not a factor	
			INSTRUCTIONAL SPACE USE
X			open concept learning areas
		X	traditional space structures
X			flexible classroom use
	X		resource centers
		X	student commons
X			out-of-classroom instruction ocean/shore
		X	mountains/desert
X			urban/rural
	X		community facilities use
			INSTRUCTIONAL USE OF TIME
		X	traditional 5-7 period day/structured elementary school day.
	X		block scheduling
	X		daily demand scheduling
X			open schedule
	X		year around school
	X		extended school day
			SCHOOL PERSONNEL UTILIZATION
	X		traditional staff use(all certified equally)
X			team teaching
	X		interdisciplinary teaming
		X	use of instructional aides
X			older students teaching younger students
		X	differentiated staffing
X			using community volunteers (non certified)
	X		teacher role specialization
	X		involvement of teaching staff in instructional decision-making

TABLE XIX

A COMPONENT CHECK-LIST FOR The Leicestershire School Instructional Model

An essential component	An implied factor	Not a factor	
			CURRICULUM FOCUS
		X	standard big 4 curriculum: Math, Science, English, Social Studies
		X	core curriculum
	X		interdisciplinary curriculum
	X		occupational/vocational
X			sociological problems oriented
X			student centered
	X		student mastery of verbal information
	X		student mastery of intellectual skills
	X		student cognitive skills development
X			student attitude development
			INSTRUCTIONAL MANAGEMENT
	X		standard class-size student groups
		X	homogeneous grouping
X			variable grouping
X			flexible grouping
		X	advanced placement
		X	ability grouping
	X		performance based instruction
	X		individually prescribed instruction
	X		criterion referenced testing
		X	time based instruction
		X	norm referenced testing
X			continuous student progress
		X	age-grade student progress
X			student paced learning
X			student selection of materials
X			student selection of instructional methods
		X	teacher paced learning
		X	teacher selection of materials
		X	teacher selection of instructional methods
		X	materials paced learning
	X		situational selection of pace, materials, and methods
X			individually guided motivation
X			student involvement in instructional decision making

TABLE XIX

A COMPONENT CHECK-LIST FOR The Leicestershire School Instructional Model

An essential component	An implied factor	Not a factor	
			TEACHING METHODOLOGIES
			Cybernetic Systems
		X	computer assisted instruction
		X	audio-tutorial instruction
	X		programmed instruction
		X	programmed instructional T. V.
		X	computerized games
		X	auto-adjunct instruction
	X		lecture/assignment/feedback
			Idiosyncratic Systems
X			open laboratory experiences
X			independent study
X			self directed learning (free learner concept)
X			learning contracts (contingency management)
X			quest or project activity
			Group Inquiry Systems
X			inductive teaching
	X		simulation and games
X			socio-drama and role playing
	X		collective inquiry
			SOCIO-PSYCHOLOGICAL FACTORS
X			student self actualization
	X		self actualization of instructional personnel
	X		interpersonal competence
	X		communication
	X		teacher professionalism
			COMMUNITY RESOURCE USE
X			parental involvement
	X		non certified professionals used in instruction
			community facilities use
	X		public agencies
	X		private agencies
	X		community controlled schools
		X	proprietary schools

TABLE XIX

A COMPONENT CHECK-LIST FOR The Leicestershire School Instructional Model

An essential component	An implied factor	Not a factor	EVALUATION STRUCTURES
			student evaluations
	X		student self evaluation
		X	multidimensional performance based assessment by teachers
		X	class achievement ranking by teacher
		X	no assessment
			teacher evaluations
		X	teacher self assessment
		X	criteria based assessment by superior, peers, and subordinates
	X		intuition based administrative ratings
		X	no assessment
			program evaluations
		X	program evaluation based on program objectives (cost effectiveness)
		X	accountability assessment (evaluation of outcomes against objectives)
	X		program evaluations based on standard student achievement indices
	X		intuitive administrative ratings of program
		X	no assessment

SECTION III

The new instructional models considered in Section II were contrasted and compared in terms of their model emphasis. The manner in which space, time, personnel, and curriculum were organized as well as the form of methodology, and evaluation used helps one to discriminate among the eight. The patterns of decision-making, the use of community resources and the emphasis on socio-psychological factors allow for further comparison.

Although the author has justified the process by which the eight models were determined to be distinct and complete models of instruction, there still remains the question of well known "innovations" which are commonly considered new instructional models. What about these innovations such as Individually Prescribed Instruction? Why are they considered to be elements of a model rather than new models in and of themselves? Perhaps an example using IPI will reduce some possible confusion.

"Individually Prescribed Instruction (IPI) as an instructional system, represents one of the more interesting ways of providing for the wide range of differences that exist in any classroom," at least in the opinion of Robert G. Scanlon (1970). He lists six elements which distinguish this component of instruction from those used in conventional schools.

1. Detailed specifications of educational objectives.
2. Organization of methods and materials to attain these objectives.
3. Careful determination of each pupil's present competence in a given subject.
4. Individual daily evaluation and guidance of each pupil.
5. Provision of frequent monitoring of student performance, in order to inform both the pupil and the teacher of progress toward an objective.
6. Continual evaluation and strengthening of the Curriculum and instructional procedures.

Schools which have adopted the concept of Individually Prescribed Instruction frequently also change schedules, staffing patterns, decision making structures and teaching methodology. However, a careful study of the literature, especially that which has been disseminated from the Learning Research and Development Center in Pittsburgh indicated no emphasis in any other components than those dealing with the curriculum focus and teaching methodology. As can be seen in Scanlon's definition the concept does not provide a new instructional model.

Other innovations which were identified, analyzed, and then determined to not represent a new model of instruction are listed on Table XX. Many of those found on Table XX can be found as a component of instruction in the component check list of the previous section. The innovations are keyed to the rather extensive bibliography for the benefit of the reader interested in a definition or explanation of a particular component.

TABLE XX

Innovative Sub-Components of Instructional Models

Space	
Open Space School	8, 50, 51, 53, 75, 98, 149, 156
Resource Centers	5, 50, 53, 98
Educational Parks	25, 42, 137, 149
Out of Classroom Education	51, 75, 102, 108, 154, 171, 178, 203
Open Laboratories	3, 5, 8, 48, 51, 75, 90, 154
Open Campus	9, 42, 102, 178
Time	
Modular Scheduling	49, 112, 141, 164, 179, 173, 193
Flexible Scheduling	14, 49, 63, 89, 77, 112, 141, 145, 193
Block Scheduling	72, 159
Open Schedules	58, 90, 156, 178
Extended School Year	39, 42, 131, 178, 196
Daily Demand Schedules	70, 72, 179
Staff	
Differentiated Staffing	3, 21, 31, 32, 38, 45, 47, 54, 56 97, 104, 135, 184
Team Teaching	10, 66, 68, 84, 107, 110, 119, 129, 136, 156, 158, 160, 183
Teaching Aides	11, 54, 200
Tandem Teaching	175
Clinical Teachers	152
Teaching Interns	54, 113
Portal School	48
School-Within-a-School	112, 152
Community Schools	78, 86
Proprietary Schools	138

TABLE XX (cont.)

Content	
Core Curriculum	79, 33, 140, 189
Interdisciplinary Curriculum	33, 58, 87, 97, 155, 180, 184, 185 168, 208
Student Centered Curriculum	24, 23, 58, 75, 90, 154, 156, 203
Student Grouping	
Homogeneous Grouping	30, 91, 125, 126, 158, 205
Continuous Progress	7, 37, 36, 62, 63, 127, 128, 154 187, 172, 201
Non-graded Classes	7, 17, 18, 13, 36, 35, 71, 73, 84 127, 130, 132, 169, 199
Advanced Placement	15, 16, 91, 165
Independent Study	6, 20, 63, 90, 123, 116, 124, 139 141, 144, 154, 198, 207
Open Enrollment	75, 90, 155
Vertical Organization Alternatives (Middle School)	1, 2, 26, 25, 40, 41, 52, 64, 67, 92 85, 88, 120, 114, 133, 183, 186, 192, 190
Methodologies	
Computer Assisted Instruction	59, 81, 164, 181, 176
Individualized Instruction	4, 5, 24, 46, 57, 60, 61, 63, 71, 74 94, 95, 103, 134, 139, 168, 174, 204
Programmed Instruction	28, 29, 43, 65, 69, 83, 80, 103, 106 115, 118, 151, 157, 188, 191, 170, 194
Individualized Prescribed Instruction	13, 24, 57, 103, 106, 117, 153, 161, 206
Performance Contracts	22, 44, 82, 76, 100, 101, 142, 177 166, 195
Contingency Managed Instruction	19, 105, 198
Individually Guided Motivation	110, 123, 116, 141
Instructional Television	55, 12
Discovery Method	156, 203, 207, 58, 90, 12, 167
Project Method	207, 90, 12, 167
Sociodrama and Role Playing	154, 156, 12
Simulation and Gaming	207, 90, 12
Structured Tutoring	147, 154, 203, 167

TABLE XX (cont.)

Correspondence Instruction	12
Teaching Machines	55, 12
Evaluation	
Comprehensive Achievement Monitoring	
Pass/fail Systems	150
Performance Based Evaluation	63, 82, 80, 100, 101, 152, 153, 182
Program Planning Budgeting Systems	100, 101
Teacher Preparation	
Inservice Teacher Training	48, 45, 66, 99, 111, 113 121, 139,
Innovations	148, 162, 200
Pre-service Training Innovation	95, 111, 113, 107, 121, 115 200

1. Alexander, W. M. New school in the middle. Phi Delta Kappan 50:355-57, February 1969.

2. Alexander, W. M. and Williams, E. L. Schools for the middle school years. Educational Leadership 23:217-23, December 1965.

3. Allen, D. W. Differentiated staff: putting teacher talent to work. Kentucky School Journal 47:21-3, February 1969.

4. Allen, D. W. How you can individualize instruction right now. Nations Schools 81:43-46+, April 1968.

5. Allen, D. W. Individualized instruction: resource centers and open laboratories. CTA Journal 61:27+, October 1965.

6. Amaria, R. P. et al. Individual vs. cooperative learning. Educational Research, 95-103, February 1969.

7. Anderson, R. A. Non-graded school; an overview. National Elementary Principals 47:4-10, November 1967.

8. Anderson, R. A. Open learning places: Matzke and Holbrook schools. Educational Technology 10:13-15, June 1970.

9. Anywhere school: once city districts break with the past: Parkway Program. School Management 13:46-55+, December 1969.

10. Atwood, R. K. Team teaching: new models are needed. Science Teacher 37:59-60, January 1970.

11. Bahr, J. Non-professional teachers enliven the subject matter. Clearing House 43:494-96, April 1968.

12. Beard, J. G. et al. Description of several learning activities and implications of research for instruction and learning. Florida State University, 1971.

13. Beck, I. L. and Bolvin, J. O. Model for non-gradedness: the reading program for individually prescribed instruction. Elementary English 46:130-35, February 1969. (ERIC #ED 033 832)

14. Beggs, D. W. A study of the implementation strategy employed by selected schools using a flexible class schedule. 26/11/6541 (dissertation)

15. Bergeson, J. B. Academic performance of college students granted advanced standing as a result of participation in the advanced placement program. Journal of Educational Research 61:151-52, December 1967.

16. Bergeson, J. B. Advanced placement; a report on former participants and their subsequent academic performance. Clearing House 41:365-67, February 1967.

17. Besvinick, S. L. and Crittendon, J. The effectiveness of a non-graded school. School and Society 96:181-84, March 16, 1968.

18. Billings, Z. W. Self selection classroom. Today's Education 59(7):15-16, October 1970.

19. Birnbrauer, J. S. Contingency managed research. Educational Technology, April 1971, pp. 66-68.

20. Bishop. L. K. Independent study; individualizing instructional problems. Clearing House 42:9-14, September 1967.

21. Bishop. L. K. and Carlton, P. W. Staff differentiation: a model for developing professional behavior. High School Journal 54:422-31, April 1971.

22. Blaschke, C. et al. Performance contract: turnkey approach to urban school system. Educational Technology 10:45-48, September 1970.

23. Bolvin, J. O. Implications of the individualization of instruction for curriculum and instructional design. Audio Visual Instruction 13:238-42, March 1968.

24. Bolvin. J. O. Individually prescribed instruction. Educational Screen and Audio Visual Guide 47:14-15+, April 1968.

25. Booth, William et al. School organization patterns: the educational park; the middle school: PROJECT DESIGN. Interagency planning for urban educational needs, Number 23. Fresno City Unified School District, California, June 1969. (ERIC # ED 038 771)

26. Brod, P. Middle school: trends toward its adoption. Clearing House 40: 331-33, February 1966.

27. Broudy, H. S. Innovation and curriculum decisions. CTA Journal 63:14-16, January 1967.

28. Brydle, J. R. Principles and practices for schools preparing to use programmed instruction. 24/01/138 (dissertation)

29. Burns, R. W. Programmed instruction and the process approach. Educational Technology 9:92, October 1969.

30. Busch, R. R. Student response to grouping. Clearing House 43:153, September 1968 - May 1969.

31. Caldwell, B. A. Differentiated staffing. Educational Technology 10:59-60, December 1970; 11:6, April 1971.

32. Caldwell, B. A. Differentiated staffing: who is labor and who is management? Educational Technology 10:59-60, December 1970.

33. Cameron, W. D. Hydra headed curriculum: the proliferation of interdisciplinary studies. Journal of Higher Education 36:307-12, June 1965.

34. Carlson, E. I. 4-2 academic term: a case study. Liberal Education 53: 365-74, October 1967.

35. Carswell, E. M. Non-graded school: planning for it, establishing it, maintaining it. National Elementary Principals 47:11-15, November 1967.

36. Champlin, J. R. Spirit in search of substance: another view of non-gradedness. New York State Education 56:18-19, May 1969.

37. Cirone, C. and Emerson, P. Slow learner in a new setting; a continuous progress program. New York State Education 53:19, January 1966.

38. Conte, J. M. and English, F. Impact of technology on staff differentiation. Audio Visual Instruction 14:108, May 1969.

39. Cuddy, E. H. The year-round or the rescheduled school year. Warren Township Independent School District, Indianapolis, Indiana. September 1969. (ERIC # ED 041 364)

40. Curtis, T. E. and Bidwell, W. W. Rationale for instruction in the middle schools. Educational Leadership 27:578-79+, March 1970.

41. Curtis, T. E. Middle school in theory and in practice. National Association of Secondary School Principal's Bulletin 52:135-40, May 1968.

42. D'Amico, L. A. and Brooks, W. D. The spatial campus. Indiana University, Bloomington, Indiana, September 1968. (ERIC # ED 031 881)

43. Dale E. Historical setting of programmed instruction. National Society for the Study of Education Yearbook 66, pt. 2:28-54, 1967.

44. Davis, J. L. Texarkana project. Audio Visual Instruction 15:97, June 1970.

45. Deep. D. Changing role of teachers. Pennsylvania School Journal 116: 378-79, March 1968.

46. Demak, L. S. New ideas in Michigan Education. Wayne County Intermediate School District, Detroit, Michigan. April 1969. (ERIC # ED 033 184)

47. Differentiated staffing. Nations Schools 85 (6) : 43-49, June 1970.

48. Dodl, N. R. and Armstrong, E. The portal school: its mission, organization, and implementation problems. Florida State University Mimeograph, 1971.

49. Dunlap, R. S. and Hintergardt, B. C. Innovations in guidance: implications of flexible modular scheduling. Personnel and Guidance Journal 45:812-17, April 1967.

50. Eberle, R. F. Open space school. Clearing House 44:23-28, September 1969.

51. Educational Facilities Labs, Inc. The loft building as a school house. Philadelphia, Pennsylvania, 1968. (ERIC # ED 033 54[illegible]

52. Eichhorn, D. H. Middle school organization: a new dimension. Theory Into Practice 7:111-13, June 1968.

53. Elliot, W. S. Open plan concept in Whitefish. Montana Education 45:14-16, February 1969.

54. English, F. Q & A on differentiated staffing. Today's Education 58:53-54, 1969.

55. Estarellas, J. and Regan, T. F. Programmed TV; a new teaching machine. Audio Visual Instruction 12:270+, March 1967.

56. Evans, G. E. An analysis of factors related to the acceptance or rejection of staff differentiation. Vol. 32, 122 A (dissertation)

57. Fairman, M. Individualizing instruction through (IPI): Daniel Boone School, University City, Montana. Educational Leadership 28:133-36, November 1970.

58. Fantini, M. Options for students, parents, and teachers: public schools of choice. Phi Delta Kappan 9:541-43, May 1971.

59. Filep, R. T. What we know so far about computer assisted instruction. Nation's Schools 80:62-3, October 1967.

60. Fischer, B. B. and Fischer, L. Towards individualized learning. Elementary School Journal 69:298-303, March 1969.

61. Flannagan, J. C. Functional education for the seventies: project plan (program for learning in accordance with needs). Phi Delta Kappan 49: 27-33, September 1967.

62. Ford, J. B. An analysis of organizational structure and peer status in a non-graded school. XXVI, 5578.

63. Foster, G. R. A five-year evaluation of the Nova Secondary Schools. March 1970. (ERIC # ED 040 249)

64. Furlong, C. B. Priorities for the middle school. Vol. 28, 1235-A (dissertation)

65. Furukawa, J. M. Chunking method of determining size of step in programmed instruction. Journal of Educational Psychology 61:247-54, June 1970.

66. Gaskell, W. Inservice education potential of team planning teaching. Peobody Journal of Education 45:152-55, November 1967.

67. Gastwirth, P. Questions facing the middle school. High Points 48:40-7, June 1966; Clearing House 41:472-75, April 1967.

68. Georgiades, W., Fraenkel, J. R., and Gross, R. E. Team teaching: opinions differ. NEA Journal 56:14-17, April 1967.

69. Gibbs, W. E. Programmed approach to instruction. Balance Sheet 47: 151-53, December 1965.

70. Gilman, D. R. Daily demand scheduling. Business Education Forum 24: 29-30, February 1970.

71. Goodlad, J. 1. Educational change: a strategy for study and action. Journal of Secondary Education 46:156-66, April 1971.

72. Goodridge, L. E. Five flexible schedules that work; time blocks put daily schedule into teachers' hands. Junior Nation's Schools 82:31, August 1968.

73. Gorman, C. J. Annual reassignment of teachers: an important ingredient of non-grading. Elementary School Journal 69:192-97, January 1969.

74. Gresham, R. L. et al. The Albuquerque story. Albuquerque Public Schools, New Mexico, June 1970. (ERIC # ED 043 949)

75. Guide to the Pennsylvania Advancement School. Pennsylvania Summer Workshop Program. Philadelphia, Pennsylvania, 1969. (ERIC # ED 028 960)

76. Haddock. T. T. Individualized instruction through student contracts. Arizona Teacher 55:10-11+, May 1967.

77. Haggerson, N. L. Flexible scheduling. Arizona Teacher 56:14-16, September 1967.

78. Hagood, H. B. Community control of the schools, a new alternative. Mich-Ohio Regional Education Lab., Inc., Detroit, Michigan, June 1969. (ERIC # ED 036 894)

79. Hamm, R. L. Core curriculum at the crossroads. Teacher's College Journal 39:92-4, November 1967.

80. Hampdon, J. D. Evaluating programmed instructional techniques. Journal of Educational Research 18:49-60, January 1967.

81. Hansen, D. N. Computer assistance with the educational process. Journal of Educational Research 36:588-603, December 1966.

82. Harmes, H. M. Specifying objectives for performance contracting. Educational Technology 11-52-6, January 1971.

83. Hart, H. C. Classroom structures rapidly changing; programmed materials. Education 86:198, December 1965.

84. Heathers, G. School organization: non-grading, dual progress, and team teaching. National Society for the Study of Education Yearbook 65, pt.2: 110-34, 1966.

85. Heller, R. W. and Hansen, J. C. Middle School and implications for the guidance program. Peabody Journal of Education 46:291-7, March, 1969.

86. Herrick, M. The rise of community schools in urban public education. National Federation of Settlements and Neighborhood Centers, New York, N. Y., 1969. (ERIC #ED 040 220)

87. Higgins, H. O. Interdisciplinary approach: a learning environment. Educational Horizon 48:1-4, Fall 1969.

88. Hines, N. A., and Alexander, W. M. Evaluating the middle school. National Elementary Principals 48:32-6, February, 1969.

89. Hoffman, O. Flexible schedule. Journal of Secondary Education 43:278-82, October, 1968.

90. Howell, R. W. A study of informal learning. City University of New York, New York: Richmond College, June, 1969. (ERIC #ED 040 485)

91. Howell, W. J. Influence of curriculum enrichment in a high school honors group on college board exam scores. Journal of Educational Research 59:113-14, September, 1965 through August, 1966.

92. Hunt, J. J., et al. Continuing trend toward middle school organizational patterns. Journal of Secondary Education 45:170-3, April, 1970.

93. Hunter, M. C. Teachers in the non-graded school. NEA Journal 55:12-15, 1966.

94. Ignatius, M. S. Individualizing instruction; some classroom tested ideas. NEA Journal 55:39, November, 1966.

95. Individualization in the university, conference report. School and Society 96:294-5, Summer, 1968.

96. Johnson, H. M. Flexibility in the secondary high school; Interlake High School, Bellevue, Washington. National Association of Secondary School Principals' Bulletin 53:62-72, October, 1969.

97. Joyce, B. Principal and his staff: the multiple systems approach to curriculum. National Elementary Principals 48:24-9, September, 1968.

98. Ledbetter, T. A. A study of open space for teaching. 70//2119 (dissertation).

99. Leep, A. B., et al. Developing more and better inservice programs. Clearing House 43:113-16, October, 1968.

100. Lessinger, L. M. Accountability in public education. Today's Education 59:52-3, May, 1970.

101. Lessinger, L. M. After Texarkana, what? Nation's Schools 84:1-6, December, 1969.

102. Lindsay, F. B. New look: goals and purposes of secondary education; learning outside classrooms. National Association of Secondary School Principals' Bulletin 50:259-60, August, 1966.

103. Lindvall, C. M. and Bolvin, J. O. Programmed instruction in the schools: an application of programming principles in individually prescribed instruction. National Society for the Study of Education Yearbook 66, pt. 2:217-54, 1967.

104. Lindvall, C. M. and Bolvin, J. O. Role of the teacher in individually prescribed instruction. Educational Teacher 10:37-41, February, 1970.

105. Littky, D. and Bosley, L. A contingency management program in urban school classrooms. Institute for the Advancement of Urban Education, New York, N. Y., April, 1970. (ERIC #ED 041 966)

106. Kapfer, P. G. and Swenson, G. Individualizing instruction for self-paced learning. Clearing House 42:405-410, September, 1967 through May, 1968.

107. Kassem, S. M. The next faculty member you hire may be a team. College and University Business 48 (4):60-61, April, 1970.

108. Kirk, J. J. Trends in outdoor education. July, 1968. (ERIC #ED 036 349)

109. Klausmeier, H. J. Cognitive style and concept identification as a function of complexity and training procedures. Journal of Educational Psychology 61:423-30, December, 1970.

110. Klausmeier, H. J., et al. Individually guided motivation: developing self direction and pro-social behaviors. Educational School Journal 71:339-50, March, 1971.

111. Klausmeier, H. J. and Weisma, W. Team teaching and achievement. Education 86:238-42, December, 1965.

112. Kohl, H. School within a school. Grade Teacher 87:12+, September, 1969; 11-12+, October, 1969.

113. Kurtzman, J., et al. Cooperative student teacher venture. Physical Education 26:156-7, December, 1969.

114. Madon, C. A. Middle school: its philosophy and purpose. Clearing House 40.

115. Mayo, G. D. and Longo, A. A. Training time and programmed instruction. Journal of Applied Psychology 50:1-4, February, 1966.

116. McCoffery, J. F. and Turner, D. S. Discipline in the innovative school. Educational Digest 36:16-19, October, 1970.

117. McKeegan, H. F. What individualizing instruction means to the curriculum director: Milton Project. Audio Visual Instruction 13:232-37, March, 1968.

118. Meadowcroft, B. A. Comparison of two methods of using programmed learning. Arithmetic Teacher 12:422-25, October, 1965.

119. Meyer, J. A. Salvaging team-teaching. Clearing House 44:203-205, September, 1969, to May, 1970.

120. Middle schools in theory and in fact; summary of middle schools in action. Educational Research Service. NEA Research Bulletin 47:49-52, May, 1969.

121. Miller, R. I. Teacher education and preparation for the 21st century. School and Society 98 (2326):278-81, 1970.

122. Moore, A. J. Approach to flexibility. Educational Leadership 24:691-95, May, 1967.

123. Most schools still frown at free time for students: school administrator's opinion poll. Nation's Schools 80:86, October, 1967.

124. National Association of Secondary School Principals. Independent study, academic freedom, new style. Washington, D. C., Mary, 1967. (ERIC #ED 033 457)

125. National Education Association, Research Division. Ability grouping: summary. NEA Research Bulletin 46:74-6, October, 1968; School and Community 55:30-1, January, 1969.

126. National Education Association, Research Division. Ability grouping: teaching opinion poll. NEA Journal 57:53, February, 1968.

127. National Education Association, Research Division. Grade organization and non-grading programs. NEA Research Bulletin 45:118-120, December, 1967.

128. National Education Association, Research Division. Non-graded school organization: summary of non-graded schools. NEA Research Bulletin 43: 93-5, October 1965.

129. National Education Association, Research Division. Team teaching. NEA Research Bulletin 45:152-55, December, 1967.

130. Neubauer, D. Non-graded school: some current questions. National Elementary Principals 47:2-3, January, 1968.

131. New York State Education Department. The impact of a rescheduled school year. Albany, N. Y., March, 1970. (ERIC #ED 040 234)

132. Niess, C. A non-graded program for the small high school. NAASP Bulletin, February, 1966, pp. 19-27.

133. Oestreich, A. H. Middle school in transition. Clearing House 44:91-95, September, 1969 through May, 1970.

134. Ogston, T. J. Individualizing instruction: changing the role of the teacher. Audio Visual Instruction 13:243-8, March, 1968.

135. Olivera, J. L. Meaning and application of differentiated staffing in teaching. Phi Delta Kappan 52:36-40, September, 1970.

136. Olson, C. O., Jr. Why teaching teams fail. Peabody Journal of Education 45:15-20, July, 1967.

137. Olson, J. C. Pittsburgh's bid to blend programs and facilities: great high school's project. School Shop 27:31-4, May, 1968.

138. Oregon State Educational Coordinating Council. The proprietary school in Oregon. Salem, Oregon, April, 1969.

139. Overly, N. V. and McKeegan, H. F. Individualizing for independence of students and teachers: Milton Project. TIP 5:225-28, December, 1966.

140. Overton, H. Rise and fall of the core curriculum, theory into practice. Clearing House 40:532-7, May, 1966.

141. Peck, R. F. Promoting self-disciplined learning; a researchable revolution, 1970. (ERIC #ED 039 191)

142. Performance contracting. Nation's Schools 86:85-86, October 1970.

143. Petrequin, G. and Tapfer, W. G. A computer-generated, teacher-developed, modular-flexible schedule, 1968. (ERIC #ED 030 206)

144. Plunkett, W. T. Independent study at Syosset High School independent study programs, Phi Delta Kappan 50:350-53, February, 1969.

145. Polos, N. C. Flexible scheduling; advantages and disadvantages, Education 89:315-19, April, 1969.

146. Post, R. L. Middle school: a questionable innovation. Clearing House 42:484-86, April, 1968.

147. Postlethwait, S. N. Audio tutorial system. American Biology Teacher 32: 31-3, January, 1970.

148. Pottle, J. Inservice aspects of the curriculum revision process. Social Education 32:712-14, November, 1968.

149. Powell, M. New design for schools. Times Education Supplement 2696: 179, January 20, 1967.

150. Quann, Charles J. Pass-fail grading: what are the trends? American Association of Collegiate Registrars and Admissions Officers, April, 1970.

151. Rancour, L. E. Programmed instruction: report of an experiment. Education 86:426-28, March, 1966.

152. Research and evaluation at John Adams High School, Portland, Oregon, 1969. (ERIC #ED 034 709)

153. Research for Better Schools, Inc. Degree of implementation of individually prescribed instruction; Philadelphia, Pennsylvania. Washington, D. C.: Bureau of Research, 1968. (ERIC #ED 036 171)

154. The rise of the "free school." Saturday Review 53 (25):75-89 and 90-3.

155. Roberts, J. Curriculum development and experimentation. Review of Educational Research 36:353-61, June, 1966.

156. Rogers, V. R. and Coe, John. Primary education in England: an interview with John Coe, Phi Delta Kappan, LII:9:534-38, May, 1971.

157. Saettler, P. Rise of programmed instruction: excerpt from history of instructional technology. School and Society 95:536-44, December 23, 1967.

158. Samuels, S. et al. The influence of team teaching and flexible grouping on attitudes of junior high school students. New Rochelle City Board of Education, New York, December, 1969. (ERIC #ED 041-370)

159. Sawaia, A. J. Block-time approach meets students' needs: Scottsdale High School, Business Education Forum 24:10-12, February, 1970.

160. Sawyer, D. E. Team teaching: how successful is it? Clearing House 43: 21-26, September, 1968 through May, 1969.

161. Scanlon, R. G. Individually prescribed instruction: a system of individualized instruction. Educational Technology 10:44-6, December, 1970.

162. Scanlon, R. G. and Brown, M. V. Inservice education for individualized instruction. Elementary Teacher 10:62-4, February, 1970.

163. Schiller, J. Performance contracting: some questions and answers. American Education 7:3-5, May, 1971.

164. School scheduling by computer. (Editorial) School and Society 93:143-46, and 152, 1965.

165. Schuler, S. Advanced placement; bright new tone in education. PTA Magazine 54:4-7, June, 1965.

166. Schwartz, R. Performance contracts catch on. Nation's Schools 86: 31-33, August, 1970.

167. Scurfy, L. G. W. Looking back on Leicestershire, ESI Quarter Report, Spring/Summer 1966. Educational Services Incorporated.

168. Shaw, F. Changing curriculum. Review of Educational Research 36:343-53, June, 1956.

169. Shearran, G. F. and Wait, H. Non-graded elementary schools: a survey of practices. Nation's Elementary Principals 47:39-42, November, 1967.

170. Shimabukura, S. Guidelines for the classroom use of programmed courses. Junior Teachers' Education 16:469-76, December, 1965.

171. Smith, J. W. Outdoor education in Michigan schools, Michigan State Dept. of Education, Lansing, 1970. (ERIC #ED 041 648)

172. Sorenson, A. B. Organizational differentiation of students and educational opportunity, Sociology of Education 43:355-76, Fall, 1970.

173. Speckhard, G. P. Evaluating the modular schedule. North Central Association Quarterly 41:300-308, Spring, 1967.

174. Spray, C. O. Phase level program for individualized education. Clearing House 41:136-9, November, 1966.

175. Squillace, F. J. What is tandem teaching? New York State Education 56: 23-25, April, 1969.

176. Stafford, R. M. How schools use computers in the classroom. Nation's Schools 77:58-60, April, 1966.

177. Stenner, J. and Kean, M. H. Four approaches to education performance contracting, Educational Leadership 28:721-25, April, 1971.

178. Stevens, W. K. School without walls: Philadelphia's Parkway Program, Times Education Supplement 2858:4, February, 1970.

179. Stewart, J. W. and Shank, J. Daily demand modular flexible scheduling for small schools, Educational Leadership 28:537-39+, February, 1971.

180. Stiles, L. J. Pluralistic curricular orientation. Journal of Educational Research, Vol. 64, inside cover, December, 1970.

181. Suppes, P. Computer-assisted instruction. Education Digest 34:6-8, September, 1968 through May, 1969.

182. Tanner, D. Evaluation and moderation of the comprehensive curriculum, High School Journal 54:312-320, February, 1971

183. Taomina, F. R. Team teaching in the middle school, New York State Education 56:22+, April, 1969.

184. Telfer, R. G. Staff involvement; key to curriculum improvement. Clearing House 43:539-42, May, 1969.

185. Toepfer, C. F. Integration: a curricular concern. Junior Educational Leadership 26:285-8, December, 1968.

186. Turnbaugh, R. C. Middle school, a different name or a new concept. Clearing House 43:86-8, October, 1968.

187. Turner, W. E. Plan to appraise individual progress for continuous learning. Elementary School Journal 69:426-30, May, 1969.

188. Uphaus, R. M. Programmed instruction: some pros and cons. Arizona Teacher 54:-14-15, January, 1966.

189. Vars, G. F. Core curriculum: lively corpse. Clearing House 42: 515-19, May, 1968; Education Digest 34:41-3, October, 1968.

190. Vars, G. F. Junior high or middle schools? Which is best for the education of young adolescents. High School Journal 50:109-13, December, 1966.

191. Vergis, J. P. Technology; key to individualized instruction. Arizona Teacher 55:12-13, September, 1966.

192. Virgilis, J. D. Our middle schools give the kids a bread. Todays' Education 60:30-32, January, 1971

193. Waack, W. Flexible modular scheduling at Evanston, Illinois. Speech Teacher 18:105-8, March, 1969.

194. Walker, A. R. Education and individuality. National Association of Secondary School Principals Bulletin 49:61-8, December, 1965.

195. Webb, H. V. Performance contracting: is it the new tool for the new boardmanship? American School Board Journal 158:28-30+, November, 1970.

196. Wehmhoefer, R. A. The twelve month school year, a study of the advantages and disadvantages of the four quarter system. Cook County Public Schools, Chicago, Illinois, February, 1968. (ERIC #ED 022 252)

197. Westinghouse Learning Corporation. Procedures for Establishing a Contingency Managed Classroom, October, 1967. (ERIC #ED 021 823)

198. Whitmire, J. Independent study program at Melbourne High. Phi Delta Kappan 47:43-6, September, 1965.

199. Williams, W. Academic achievement in a graded school and in a non-graded school. Educational School Journal 67:135-9, December, 1966.

200. Wiman, R. V. Interdisciplinary approach to planning a program of professional preparation for media specialists. Audio Visual Instruction 12:110-13, February, 1967.

201. Wolfson, B. J. Promise of multi-age grouping for individualizing instruction. Elementary School Journal 68:357-66, April, 1968.

202. Wolfson, B. J. Pupil and teacher roles in individualized instruction. Elementary School Journal 68:357-66, April, 1968.

203. Woulf, C. The free learner, a survey of experiments in education, March, 1970. (ERIC # ED 044-048)

204. Wolfson, B. J. Individualizing instruction. NEA Journal 55:31-40, 1966.

205. Wrightstone, J. W. Ability grouping and the average child. Today's Education 57:9-11+, 1968.

206. Yeager, J. L. and Lindvall, C. M. Evaluating an instructional innovation through the observation of pupil activities; Individually Prescribed Instruction (UPI) Project, High School Journal 51:248-53, March, 1968.

207. Yeomans, Edward. Education for Initiative and Responsibility, National Association of Independent Schools, Boston, Mass., February, 1968.

208. Young, W. F. Curriculum negotiations: present status, future trends. Educational Leadership 26:341-43, January, 1969.

APPENDIX A

FACT SHEET

Initial _____

Title:

Author:

Source:

Volume & Date:

____ Not cataloged

Page ____ to ____

____ Cataloged but not available

Check one:

Report of Research ____ If yes, describe Methodology briefly.

A Conceptual article ____

Other ( ) ____

Summarize the main points of the article:

(Example) At Marshall High School, students' attitudes were improved after adoption of Flexible Schedule.

So what? What does this tell us about inservice training or new instructional models?

(Example) Flexibility in schedules may improve student attitudes.

	Lousy	Fair	Average	Not Bad	Really Good Stuff
Rate this article	1	2	3	4	5

Criteria: (a) well documented, (b) both sides of issues explored, (c) precise, (d) doesn't talk down to audience

BIBLIOGRAPHY

Alexander, W. et al. The emergent middle school. New York: Holt, Rinehart, and Winston, Inc., 1968, p. 1.

Allen, D. W. Personal conversation. Belleview, Nebraska, Fall 1969.

Alternative schools proposal to U.S.O.E. University of Massachusetts, 1971.

Anderson, R. A. Teaching in a world of change. New York: Harcourt, Brace and World Inc., 1966.

Beard, J. G., DeBloois, M. L., and Foster, G. R. An evaluation of school personnel utilization projects, Vol. I-IV. A report on the evaluation of the school personnel utilization project of the U. S. Office of Education, Department of Health, Education and Welfare. The Evaluation Training Center, Department of Educational Research, Florida State University, 1971.

Behundt, D. Away with tradition. American Education 41:48-9, April 1970.

Booth, W. and others. School organizational patterns: the educational park: the middle school Project DESIGN. Interagency planning for urban educational needs, Number 33. Fresno City Unified School District, California. ERIC Number ED 038771, 1968, p. 9.

Bremer, J. The parkway program. Philadelphia, the Phildelphia Public Schools, 1970, pp. 3-4. (Mimeograph)

Briggs, L. J. An alternative model for achieving improvements in education. 1971. (Mimeograph)

Burns, T. A comparative study of organizations. Methods of Organizational Research, Victor H. Vroom, ed. (Pittsburgh: University of Pittsburgh Press, 1964).

Burr, D. F. Yerk for Uniqueness. Taken from a presentation at Arizona's state-wide conference on individually prescribed instruction, sponsored by the Center for Educational Advancement, Mesa Public Schools and the State Department of Public Instruction, State of Arizona, January 17-18 1967 at Mesa, Arizona.

Byerly, C. L. The non-graded school; analysis and study, R. L. Miller, ed. New York: Harper and Row Publishers, 1967, p. 32.

Canady, R. L. Team teaching, what is it? in Updating intergroup education in public schools, G. R. Albin, ed., West Virginia Wesleyan College, Buckhannon, West Virginia, 1969, p. 101.

Carswell, E. M. in R. L. Miller, op cit, 1967.

Corrigan, et al. Revolutionizing, reforming, or refining American education? A state of the art report. A report for the U. S. Commissioner of Education, U. S. Office of Education, Department of Health, Education and Welfare, Washington, D. C., 1971.

Curtis, T. E. Middle school: the school of the future. Education, February-March, 1968.

DeBloois, M. L. Beyond bureaucratic staffing, an organic-adaptive model for schools. Unpublished dissertation, University of Massachusetts, 1970.

Dobbins, A., et al. The clinical school project. Adams High School, Portland, Oregon, 1968, p. 7 (Mimeograph).

English, Fenwick, W., Zaharis, James K., and Huber, Clarence S. Arizona-Mesa differentiated staffing consortium: a brief progress report to Mesa education, Mesa Public Schools, Mesa, Arizona, 1971, p. 2.

Erickson, Donald A. in R. L. Miller, op. cit., p. 50.

Fantini, M. and Weinstein, G. Making urban schools work: social realities and the urban school. New York: Holt, Rinehart and Winston, Inc. 1968.

Gaskell, William. The inservice educational potential of team planning-teaching. George Peabody College for Teachers, Nashville, Tennessee, 1967. ERIC No. ED 036502.

Gibbons, Maurice. Individualized instruction: a descriptive analysis. New York: Teacher's College Press, 1971.

Goodlad, John I. Meeting children where they are: non-graded school, Saturday Review, March 20, 1965, pp. 57-59.

Goodlad, John I. School, curriculum, and the individual. Waltham Mass.: Blaisdell Publishing Co., 1966.

Goodlad, John I. Ungrading the elementary grades, NEA Journal 44, March, 1955, pp. 170-71.

Goodlad, John I. and Anderson, Robert H. The non-graded elementary school. New York: Harcourt, Brace and World, 1963.

Greenberg, J. D. and Rausch, R. W. Visit to the school without walls: two impressions: Philadelphia Program in Philadelphia. Phi Delta Kappan. 51: 480-84, May, 1970.

Guernsey, John. Portland's unconventional Adams High, American Education, 6:3-7, May, 1970.

Halliwell, J. W. Comparison of pupil achievement in graded and non-graded primary classrooms, Journal of Experimental Education, Vol. 32, No. 1, Fall 1963.

Howard, Alvin W. Teaching in middle schools. Scranton, Pa.: International Textbook Co., 1968.

Joyce, Bruce R. Man, media, and machines. National Education Association TEPS Commission, Washington, D. C.: NEA, 1967.

Klausmeier, Herbert J. IGE multiunit elementary school. Wisconsin Research and Development Center for Cognitive Learning, 1970.

Klausmeier, Herbert J. and others. Individually guided motivation: goal-setting procedures to develop student self-direction and pro-social behaviors. Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin, March, 1971, ERIC No. ED 039 551.

Klausmeier, Herbert J., Morrow, Richard G., and Morrow, James E. Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin and Russell S. Way, Center for Research and Program Development, Wisconsin Department of Public Instruction. Individually guided education in the multiunit elementary school--guidelines for implementation, Madison, Wisconsin, 1970.

Kleinert, John E. Effects of high school size on student activity participation, NAASP Bulletin 53 (335) pp. 34-46, March, 1969.

Kline, Lloyd. Education and the personal quest. Columbus, Ohio: Charles E. Merrill Publishing Co., 1971.

Mann, Peter B. Differentiated staffing: the second generation, Arizona Teacher, Vol. 59, No. 3, January, 1971, pp. 13-17.

McIntosh, R. Gordon and Parker, John L. Personnel training at Adams High School, 1969, pp. 4-8 (mimeographed).

Miller, Richard I. The non-graded school: analysis and study. New York: Harper & Row, 1967, p. 131.

National Education Association Research Service. Middle schools in action, AASA, National Educational Association No. 2, May, 1965.

Pumerants, Phillip. Imperatives in the junior high and middle school dialogue, The Clearning House, December, 1968.

Resnik, H. S. High school with no walls: Philadelphia's Parkway Program, Education Digest, 35:16-19, March, 1970.

Retson, James N. in Richard I. Miller, op. cit., 1967.

Stogdill, Ralph. Dimensions of organizational theory, Approaches to organizational design, James Thompson (ed.), Pittsburgh: University of Pittsburgh Press, 1966.

Synergetics and the school, University of California at Santa Barbara, 1966.