A conceptual model for individualizing instruction: the Kullerstrand story.

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A CONCEPTUAL MODEL FOR INDIVIDUALIZING INSTRUCTION:
THE KULLERSTRAND STORY

A dissertation Presented
By
NICK REVIELLE

Submitted to the Graduate School of the
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A CONCEPTUAL MODEL FOR INDIVIDUALIZING INSTRUCTION:

THE KULLERSTRAND STORY

A Dissertation

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The encouragement and assistance of many people made this study possible. Sincere gratitude is extended to my committee chairman, Dr. Richard J. Clark, who gave me much skillful guidance and personal attention throughout the entire doctoral program. Through his leadership and concern this document became a reality; through his understanding has grown a family friendship that will continue to nourish for years to come.

Appreciation is extended to the author's committee members Dr. Ken Blanchard and Dr. Glenn Hawkes. To Dr. Atron Gentry must go a special thanks for the role he played in the final stages of the dissertation.
DEDICATION

To my wife, Glenice, and our three children Brad, Nee, and Joe; whose patience, support and continued encouragement during the writing of this document have been most rewarding.
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CHAPTER I

INTRODUCTION

The purpose of this dissertation is to tell a significant story -- of the first elementary school in the country to adopt, adapt and implement the concept of flexible modular scheduling. The story is not simply a narrative about change from one organizational structure to another. Rather, it is an analysis of the education and progression of an administrator and faculty through a series of stages of growth, and the transition of the school from one of unexciting conventionality to one of the most observed and discussed schools in the nation, in the latter part of the 1960's.

For several reasons, the study is important. First and most simply, it tells a story which might be of interest to a variety of educators. Second, it describes the basic concepts of flexible scheduling and identifies the ways in which those basic concepts can be adapted and applied to meet the pressing needs of elementary schools. Finally, it identifies and analyzes a series of concepts, problems and issues perceived as significant by the primary leader of the school, the principal, who is also the author of this study.

Although twentieth-century man has available not only more books than he could pursue in a lifetime and an
incredibly rich resource of theory, research and opportunities, teachers still too often stand in front of presumably homogenous groups of youngsters and attempt to dispense knowledge. The students are expected to attend, listen, retain and spew back on "objective" tests. The result, all too often, is an habitual conformity game which the student learns to play in order to dissipate fear -- fear of parent and teacher reprisal, of peer ridicule, of making a mistake, or of being ostracized for a too-creative thought. As Albert Einstein once quipped, "Education is what's left when you have forgotten everything you learned in school."

It is the belief of the author of this paper that the organization of the school is one component that must be changed if a well-intentioned faculty is to be free to help students become creative learners. It is also his belief that schools abound with humanitarian people who sincerely want to do the best possible job of facilitating learning, who care about both themselves and their students, and who are willing to spend the energy necessary to effect desirable change, but who are stifled by traditional organizational concepts. There has recently been a flood of theory and research which has little effect because the traditional organization of the school blocks its use. Flexible scheduling, which offers a new means of organizing curricula, scheduling, materials, facilities, time, methods and personnel, is one extremely promising means by which schools can begin to develop desirable and profitable learning environments. It was highly
successful in meeting these ends at Kullerstrand Elementary School. Because the central administration played a dominant role in the educational processes throughout the district and at Kullerstrand in particular, the leadership styles of three superintendents with whom the principal worked while at Kullerstrand and their effect on the changes developing there are identified.

Given the necessary background material provided in the second chapter, Chapter III first briefly describes the Kullerstrand Elementary School as it was in 1960. It then identifies elements which were causing a stimulating search for new answers on the part of the principal and his staff. Finally, the chapter addresses a series of events, opportunities and concepts which were instrumental in helping the principal and staff to recognize new problems, to deal with those already identified, and to ready themselves for and to implement change at Kullerstrand.

Chapter IV describes how flexible modular scheduling became the pivotal concept and instrument of change at Kullerstrand. It describes some of the events which provided the opportunity to start the process, the intensive in-service process in which the principal, staff and to a lesser extent the community, became immersed, and how the school looked and operated in its transformed state. The chapter moves from focus on the conceptual stage, in which adaptations of the secondary-school model were made, to focus on the various aspects involved in moving from conception to reality.
Chapter V summarizes some results of the project over the three-year period of the pilot study.

The final chapter is personal. It attempts to convey the mistakes and the successes, the hurts and triumphs experienced by the principal and staff of Kullerstrand Elementary.

Flexible Scheduling: Development

Flexible scheduling, born of an imaginative way of viewing the curriculum served as a function of space, time and purpose. The vast possibilities provided by computer utilization, offered a new organizational structure for high schools. Instead of every classroom containing approximately the same number of students (usually twenty-five to thirty-five) spending the same amount of time (usually between forty-five and sixty minutes) every day each week, flexible scheduling allows virtually any time and size variations, based on structural modules of five or more students and ten or more minutes. Courses and teaching configurations can become as imaginative as students, teachers and administrators can make them, and the schedule can quite realistically become a function of the curriculum.

Because of the recognized needs for curricular improvement and for new, less restrictive means of scheduling high school students, and with the financial backing of the Ford Foundation, the Stanford Computer-based High School Flexible Scheduling and Curriculum Study began operation early in 1960, directed by Dwight W. Allen, Robert N. Bush, and Robert V.
Oakford. The ideas of Bush and Allen\(^1\) were implemented by means of a computer scheduling system developed by Oakford, a computer scientist, with the result that a range of scheduling capabilities far beyond human manual capabilities was available. The flexible, open, computer-generated high school schedule then needed testing and refinement, and pilot schools accepting the concept and its implications began implementing flexible modular scheduling. Large-group instruction, small-group instruction and discussion, team-teaching, long periods for laboratory time, opportunity for teacher conferences, opportunity for tutoring and other one-to-one interactions, and effective use of paraprofessional assistants to free teachers to pursue their unique competencies were attempts to better meet student needs.

With a computer-generated schedule, the school provides the necessary input data: course offerings and various structures appropriate for that course (different sized groups meeting for varying periods of time, opportunity for laboratory work, etc.); teachers' requests for subjects, units, and types of groups; space availability; and student program requests. All this information, which can be both highly specific and filled with acceptable alternatives, is then fed

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into the computer, and a master schedule, which specifies who teaches what to whom, and where and when they meet, is provided. The sophisticated computer, by scanning all the possible combinations of the availability of students, teachers and space, can generate a schedule that satisfies substantially more individual needs than even the most capable human schedulers could imagine. Although the computer cannot, of course, create more teachers, more rooms, or more time, manipulability of those components within the confines of reality is greatly increased. The possibilities created by the Stanford System were, and still are, vast and expandable.

Flexible Scheduling: A Rationale

The 'necessity' that makes schooling so uniform over time and across nations and cultures is simply the necessity that stems from unexamined assumptions and unquestioned behavior. The preoccupation with order and control, the slavish adherence to the time-table and lesson plan, the obsession with routine qua routine, the absence of noise and movement, the joylessness and repression, the universality of the formal lecture or teacher-dominated 'discussion' in which the teacher instructs an entire class as a unit, the emphasis of the verbal and de-emphasis of the concrete, the inability of students to work on their own, the dichotomy between work and play -- none of these are necessary; all can be eliminated.

Schools can be humane and still educate well. They can be genuinely concerned with gaiety and joy and individual growth and fulfillment without sacrificing concern for intellectual discipline and development. They can stress esthetic and moral education without weakening the three R's. They can do all these things if -- but only if -- their structure, content, and objectives are transformed.

Although it is at present impossible to draw a wholly accurate blueprint of how learning takes place, it can be said with considerable assurance that, given a number of students from different backgrounds of different sexes with different aptitudes, likes, dislikes, physiques... (i.e., any group of two or more children), each requires a somewhat different formula for learning if he is to achieve his unique potential. No unidimensional prescription of either process or content will even approach being acceptable in fostering the maximum possible growth for each individual child.

Although there have been few decisive moments in education, there have been some turning points we could examine for new directions and hope. If we know only that change will continue, we could follow the lead of Jerome Bruner and other psychologists who would de-emphasize memorization of facts and focus on learning processes, learning how to learn, using facts to develop concepts and broad understandings, structuring knowledge around significant ideas, helping children to become independent learners. Skills for reading, thinking, analyzing data, inferring and evaluating will enable the student to continue learning in a world where knowledge is rapidly increasing.

Change in the organizational structure can provide a significant means by which the transformation of a school can start. Edgar Schein states that it is reasonable to assume that the majority of managers are not ready or able to change in the manner in which their organization might desire and therefore must be unfrozen before they can be influenced.
They may be eager to change at a conscious motivation level, yet still be psychologically unprepared to give up certain attitudes and values in favor of untried, threatening new ones.3

Organizational change is certainly no panacea, and in fact is often little more than an exercise in self-delusion in which the cover changes but the contents remain intact -- a new name for old processes. But despite this danger, and despite the recognition that without simultaneous curriculum and process changes, organizational change will not be effective, it can at least provide a beginning and a framework, because:4

-- it is relatively easy to do; it is tangible, discussable, and theoretically manipulable;

-- it is impersonal; blame for past failure can be placed on an impersonal "it" (the inflexible schedule, for example), the integrity of the staff remains intact, and everyone has a compelling common enemy;

-- when seriously approached, it eliminates the most common excuses for closing off all further


4 "After an invention which is destined to spread throughout the school appears, fifteen years typically elapse before it is found in 3 percent of the school systems. . . . After practices have reached the 3 percent point of diffusion, their rate of spread accelerates. An additional 20 years usually suffices for an almost complete diffusion in an area the size of an average state. There are indications that the rate of spread throughout the nation is not much slower."

discussion of possible desirable changes ("it can't be scheduled," "it's a conflict," "too many kids," "wrong type of group," "not my style," "wrong materials," "need more time");

--it provides a product- or goal-oriented context for intensive in-service training through planning -- a pragmatic framework for practical people.

Flexible modular scheduling is an organizational change, tangible enough to provide direction for a staff that is committed to meeting broadly defined unmet needs, yet open enough to allow real applicability in individual schools with unique problems. The rationale for flexible scheduling is built on some general assumptions about learning and learning environments.

1) Learning is a product of many factors, including time, space, method, leadership, media and leader-learner interaction. It takes place differently for different students with various abilities and at different stages of growth. "The teacher's task is to make provision for students' differences through locating and defining them and subsequently planning appropriate activities. There must be choices so that prescription be possible." 5

2) Student attitude in school depends to a considerable extent on how much students have to say about what they will learn, who will help them learn it, where they will work, and what materials they will use. Independent study shows promise of helping young men and women to develop qualities of resource-

fulness and self-guided learning that will improve their future education and indeed help prepare them for independent lifelong learning. This broader spirit of individual inquiry is well expressed by John W. Gardner: "The ultimate goal of the educational system is to shift to the individual the burden of pursuing his own education."  

3) Shared decision-making by students and teachers is necessary if both are to feel important in the learning process. Conventional schedules make decisions that should be made by students and teachers. At a time when teachers are increasingly concerned about a greater role in developing the structure for learning in the school, it seems appropriate that all schools look at current scheduling practices. All too often, students are placed in a rigid schedule which allows very little opportunity for teacher or student modification. The development of such teacher control over the schedule pattern along with a preservation of order and integrity in the total operation must be the major goal of those searching for a more flexible schedule for today's school.  

4) All people learn from others, and a person has the opportunity to learn more if his contacts with others are wide and varied. Therefore, young people are better educated in environments that provide heterogeneity of students and faculty. Most of the research conducted in England indicated  

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that pupils in lower streams possess a sense of failure, resulting in a decline in morale, effort and attainment.  

5) Self-discipline is best developed when children are involved in and understand the development of necessary regulations. "Most research in education indicates that real learning requires an active rather than passive role on the part of the student. The student becomes an active participant in the learning process only when he has an opportunity to initiate inquiry in his own way and on his own time."  

6) As a student develops and matures, he should have more and more to say about content, time, materials, personnel and pacing. A positive self-concept is basic to a positive attitude toward learning and toward oneself, and a positive self-concept is enhanced by progressive involvement in decision-making. Students should be permitted to take appropriate responsibility, to profit by both successes and failures, and to learn how to seek advice on their own terms and according to their own needs.  

Far too many independent study programs in our schools are limited to those few students who already show maturity and an ability to work without immediate supervision and direction from a teacher. It is little wonder that many students find it difficult to structure their own time when they reach college or go to work on a job. The schedule must permit each student the opportunity to structure some portion of his own school time.  

10 Ibid., p. 72.
7) A student's learning environment should provide some formal instruction, according to his needs, performance and interest, and instruction which is negotiated between student and teacher. Each individual student and teacher must determine relevant skills, content and mode of instruction (large group, small group, tutorial) and plan formal instruction accordingly.

The body of knowledge that a school must pass on to its students has expanded tremendously and is growing at a prodigious rate. Schools are frequently faced with obtaining the best possible results from financial resources that are too often inadequate. Efforts must be made to provide for the individual differences of the students and to determine which learning experiences are the most significant for the success of the individual. 11

8) A student's learning time should provide a substantial amount of independent study time; time for the child's activities to be stimulated by his spontaneous curiosity, time for him to achieve competency on his own terms, time for reading -- for pleasure or to gather information -- time to complete tasks and projects, time to initiate new activities, time to pursue special interests, time to relax, to meditate, or to dream. Demanding schedules accommodate none of these individual quests.

The school of the future will schedule students in class groups an average of only 18 hours a week, instead of the present 30 hours. Twelve of the 18 hours will be spent in large groups and 6 will be spent in small group instruction. In addition to the 18 hours,

the average student will be scheduled for about 12 hours a week in individual study. Most students will continue to spend about 30 hours a week on their regular subjects but an underlying purpose of the school will be to develop ability to study, think, and solve problems, in contrast to today's emphasis on memorizing facts. 12

9) If students have a large amount of unscheduled time, a wealth of resources must replace the limited learning environments so characteristic of traditionally organized schools. Each new environment — learning laboratory, studio, center, library, even cubbyhold — must offer unique features and be staffed with different and unique types of people. Offering real alternatives demands that more effective use be made of personnel, time, facilities and materials and that the community and its vast resources be utilized as vital components of the school's environment.

The number of hours and locations of independent study will vary with the needs and the capacities of individual students. Using recommendations of teachers, counselors, students and parents wide use of community resources will be organized with regular school activities. 13

10) Students learn much in informal settings as well as in formal classrooms with teachers overseeing them. Opportunities for being alone and for interacting with both teachers and peers in informal settings must be provided. "The opportunity to fashion one's own dwelling according to a personal conception of what is pleasing is available to us and used by only a small fraction of the human race." 14

13 Loc. cit.
11) Teachers do not have a monopoly in knowledge or on teaching skills; students learn a great deal from one another. Therefore opportunities for social interaction and for teacher-learner interactions among students must be provided. Students have unique capabilities, special knowledge and skills which need to be tapped as a means of enhancing the learning of others.

If you really get down to it, we really do more communicating orally than we do in writing these days; and we learn more by listening than we do by reading. . . . We don't teach anything in schools seriously about critical analytical skills in the audio-visual communications area. The implications of students as teachers . . . would be that if you change just one or two basic premises you could have a lot more speech practice in speech. 15

12) Teachers too often spend the majority of their time in house-keeping functions that could be better and more efficiently performed by paraprofessional assistants, thus freeing the teachers to become more professional.

There is relatively little use of television, radio, films and recordings to save teacher time or make possible more effective staff functioning; when such aids are used the service is primarily incidental and supplemental. Little or no differentiation is made between professional, semi-professional and non-professional tasks which teachers perform. 16

13) When students and teachers are treated with honesty, openness and trust, they respond positively and enthusiastically. “Physical work and mental work are as natural as play if they are satisfying. Man will exercise self direction and self control toward an organization’s goals if he is committed

15 Allen, Dwight W. Minnesota School Facilities Council speech, November 1, 1968.
Flexible scheduling, while not guaranteeing a resolution of any of the objectives implied in the above quotes, provides one means of creating the conditions under which they can be addressed.

Flexible Scheduling: The Kullerstrand Adaptation

In 1964, Kullerstrand Elementary School, with the author of this paper as its principal, adapted the flexible scheduling model developed by Bush, Allen and Oakford for use in an elementary school setting. This dissertation tells that story.

Chapter II describes the geographical setting of Jefferson County District R-1, a suburban community immediately west of and adjacent to the City and County of Denver, Colorado serving approximately 300,000 people with a school population of about 65,000 students in kindergarten through grade twelve. In addition, the community from which Kullerstrand Elementary School drew its pupils is described and analyzed so as to provide a clear background for understanding the climate and attitudes which allowed such radical change to occur.

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CHAPTER II
JEFFERSON COUNTY PUBLIC SCHOOLS

In order that the reader have a clear understanding of the physical and demographic characteristics of both Jefferson County District and the Kullerstrand Elementary School, Chapter II will describe the geography of the area and major population characteristics. It will then prescribe and present some personal observation about the administrative organization of the district and reflect upon the leadership styles of the three superintendents under whom the Kullerstrand principal served, especially as those styles influenced the changes instituted at Kullerstrand.

I. Jefferson County District R-1

The boundaries of Jefferson County were drawn in 1867, when statehood was granted to Colorado. Fifty-five miles long and eighteen miles wide, the county encompasses an area two-thirds as large as the state of Rhode Island, with a landscape that rises from the residential areas of suburban Denver (elevation 5,300 feet) on the east to the mountains (elevation 10,000-plus feet) in the western portion of the county. More than half of the county's 791 square miles are covered by the forests and mountains of the Pike, Arapahoe and Roosevelt National Forests.
In 1951, 39 separate school systems were merged, by vote of the citizens, into one, with the new district's boundaries following county lines (see Figure 1, page 18). With Jefferson County lying immediately west of Denver County, 80% of its population lives in the valleys and foothills that now comprise a vast suburban area of the City of Denver, the remaining 20% living in rural and mountain areas. It is, for the most part, what is known as a "bedroom community," a generally middle-class area comprised of new, modern homes, often in planned developments, designed for young and growing families. Single-family residences predominate, with the majority of fathers commuting to Denver where they pursue careers in business and the professions. Total assessed evaluation in Jefferson County in 1967 was $399,830,600, with a total mill levy of 55.1 approved for the 1967 budget of Jefferson County School District R-1.

From an enrollment of 10,000 students in September, 1951, the district grew to an enrollment of 57,100 in September, 1967, with a student population of more than 75,000 estimated for 1975. Non-public schools in Jefferson County enrolled slightly more than 2800 students in 1967.

Kullerstrand Elementary School, one of 63 elementary schools in Jefferson County, is located approximately in the middle of the county, on the outer fringes of suburbia where the income level is even higher, and continually rising, than that in the rest of the county, something in excess of $7500 per family in 1966. The families of Kullerstrand children
are well-educated, with over 50% of all parents, both mothers and fathers, having attended college. In most families (which sent an average of 2½ children to school) the fathers are professional men -- bankers, physicians, lawyers -- young business executives or engineers at a large missile plant located nearby, and the mothers are housewives. In 1968, over 65% of the students graduating from the high school fed by Kullerstrand Elementary School went on to college. At Kullerstrand there was never a minority enrollment of greater than 2%, approximately 1% Black and 1% Mexican-American and Asian, and the proportion of "disadvantaged" children was never greater than 5%, these students being drawn from one small corner of the district that could be classified as "urban." ¹

Parents were actively interested in the quality of education provided their children. The principal noted that parents placed a high priority on education: they supported innovations if they felt that their children's educational opportunities would be enhanced by them, were aware of new teaching techniques and improved materials being developed or tested, kept in close contact with the school to check the progress of their children, cooperated with the teachers and the principal, and stressed excellence with their children at home. The opportunities and experiences enjoyed

¹ All figures quoted in the preceding paragraphs can be found in the files of the District Superintendent.
by Kullerstrand children were vast and varied; the families traveled, took advantage of the cultural and recreational opportunities of a large metropolitan area, and provided extensive educational support at home, including libraries, educational toys and games, and expensive equipment like still and movie cameras, tools, and other hard and soft ware.

II. District Administration: 1953 - 1968

During the fifteen years from 1953-1968, the R-1 school district was led by three superintendents. Each had a different style and impact on the school district and on Kullerstrand School in particular. Thus, in the following section, the three superintendents will be described in terms of their leadership styles in order to elucidate the climate within which the Kullerstrand principal and staff worked and developed.

Leadership Defined

For the purposes of the following discussion, the author chooses to use the following definition of leadership:

We have defined leadership as the process of influencing the activities of an individual or group in efforts toward goal achievement in a given situation. In essence, leadership involves accomplishing goals with and through people. Therefore a leader must be concerned about tasks and human relationships.²

The extent to which a leader is concerned with tasks and

with human relations was studied, beginning in 1945, by the Bureau of Business Research at Ohio State University, with the use of a questionnaire that determined, attitudinally, how a leader carried out his functions. Two dimensions, initiating structure and consideration were identified. Whereas initiating structure defined concern for task-oriented behavior, consideration defined concern for relationships-oriented behavior, and four separate styles were identified.

<table>
<thead>
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<th>High Consideration and Low Structure</th>
<th>High Structure and High Consideration</th>
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<tbody>
<tr>
<td>Low Structure and Low Consideration</td>
<td>High Structure and Low Consideration</td>
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</table>

Initiating Structure (High) —>

The Ohio State leadership quadrants

Through further studies in various settings and under varying circumstances, this early model has been refined and clarified, with the term task replacing initiating structure and relationships replacing consideration, and changing the model from one of identifying attitudes to one of identifying observable behaviors, which, of course, are much more readily observable than are attitudes. Thus, the four basic leader styles, in terms of actual behavior of the

\[\text{Ibid.}, \text{ p. 66.}\]
leader, can be depicted as in the following figure:

<table>
<thead>
<tr>
<th>High Relationships</th>
<th>High Task and Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Task and Relationships</td>
<td>High Task</td>
</tr>
</tbody>
</table>

Task-oriented behavior consists of those activities in which the leader structures the activities of the group in terms of goal-attainment or task-accomplishment, and relationships-oriented behavior consists of activities which are designed to build and to maintain good personal relationships, such as friendship, trust, respect and consideration.

The four basic leader styles can be characterized as follows:

**High Task** -- With this leader personality, an individual is seen by others as high on task but low on relationships. He seems to be more concerned about the task at hand than he is about the personal feelings and satisfactions of his followers. He appears to emphasize the task aspects of productivity, viewing members as tools to accomplish his own personal goals or the goals of his organization.

High Task and Relationships -- With this leader personality, an individual is seen by others as high on both task and relationships. He appears to emphasize getting the task done, but not at the expense of the individuals in his group. He seems to set high standards but takes interest in everyone, accepting their individuality, personal needs, and ideas.

High Relationships -- With this leader personality, an individual is seen by others as high on relationships but low on task. He appears to have a more overt concern for the needs of the individuals in the group than the task to be accomplished. He seems to feel that every individual is a human being and therefore treats everyone as if he were important. He tends to emphasize maximizing the support and development of his subordinates' potentials rather than maximizing productivity.

Low Task and Relationships -- With this leader personality, an individual is seen by others as low on both task and relationships. He appears as a leader who allows his followers to direct their own activities and does not spend much time in developing personal relationships with them.  

Leader Effectiveness

Any of the four basic leadership styles, or any combination or shading of styles, can be effective, depending upon

5 Ibid., pp. 75-76.
the situation in which the style is employed. Because situations and subordinates differ, differing styles will be effective, depending upon the appropriateness of the style in the given situation. Effectiveness is seen as a matter of degree, dependent upon how others view the particular behavior in the situation.6

It was the Kullerstrand principal's observation that the leadership style of the Jefferson County District R-1 Superintendent immediately preceding the time at which major change was instituted at Kullerstrand and that of the Superintendent in charge while the change was occurring were particularly significant, and that without the unique combination of community and administrative concern and behavior that characterized the Kullerstrand area in the early 1960's, the change to flexible modular scheduling, as it occurred, might have been impossible.

Superintendent Johnson, 1953-1962

The Kullerstrand principal had a long and close relationship with Robert H. Johnson, who had personally persuaded the principal to become an educator and had hired him as an elementary school teacher in January, 1954. In retrospect, the principal observed Dr. Johnson's leader behavior as high-task, high-relationships. He took charge, from the moment he arrived in Jefferson County in the fall of 1953, 

6 Ibid., pp. 76-79.
of a district that at that time had a poor reputation, was highly unorganized, and contained few accredited schools. In eight years, amidst tremendous population growth, he transformed a docile, dormant and sterile school system into one which gained national recognition for its adventurous spirit, excitement, and boldness.

Dr. Johnson assumed personal responsibility for Jefferson County District R-1. He quickly evaluated the high schools in the district, instituted new programs where he deemed them necessary for accrediting purposes, and then called in the North Central Accrediting Board to pass judgment; all the schools passed accrediting standards. He made public the changes he thought important, personally sought and received professional and community support for his ideas, and acted aggressively to capitalize on advantages. He developed a reputation as an active, progressive administrator, and gained the support of real estate brokers and local newspapers. Dr. Johnson formed a bureaucracy that functioned efficiently and well (see Figure 2, p. 26). Communication among schools and the central administration was improved, and centrally located materials, such as the audio-visual materials, were made available and moved expediently. Red tape was cut to a minimum, and when change was felt necessary the superintendent instituted it in a fast, effective manner.
Dr. Johnson was not only aware of programs and techniques in use in Jefferson County, he also was likely to have been involved in their development. He was not only an efficient task-master, he was also greatly concerned with people and public relations. He spoke eloquently and persuasively and had little difficulty gaining public support. He was also a highly mobile man, continually travelling throughout the district, visiting with faculties, staffs, children and community people. He brought faculties and staffs of all schools, which had previously operated independently of one another, together frequently, talking always of the great R-1 team that was transforming education. He created community committees to deal with phases of the district educational program, including building locations and design, curriculum, textbook selection and organization.

In summary, Dr. Johnson set high standards of accomplishment and demanded adherence to tasks, but also took personal interest in individual ideas and needs. He made many intuitive decisions and was equally quick to offer constructive criticism as well as compliments, with encouragement.

Under the tutelage of Dr. Johnson, the Kullerstrand principal learned a great deal about dynamic leadership as well as much about progressive education. From the principal's introduction to elementary education as a fifth-grade teacher in 1954 to his awareness of a need for change at the Kullerstrand of the early 1960's, Dr. Johnson was his model, teacher and supporter. Without these influences, the Kullerstrand
principal might never have developed the commitment and courage necessary to effect change. And had Dr. Johnson not created in Jefferson County a spirit of adventure, the community likewise might not have so heartily supported radical innovation.

At the same time, had Dr. Johnson remained in the superintendency of Jefferson County, the changes effected might have been quite different, for much as he trusted and respected the Kullerstrand principal, he would have been unlikely to allow him the free reign his successor did.

Superintendent Bottomly, 1962-1966

In contrast with Dr. Johnson, Forbes Bottomly was a soft-spoken, pipe-smoking academician with a background in research, a leader who behaved in a low-task, low-relationship style. He operated from his office in the central administration building, rarely venturing out to visit schools or the community. When Dr. Bottomly became superintendent, few changes in organizational structure or procedure were made, and, for a while, everything went on as it had in the past, with the major exception of the invisibility of the superintendent. Bottomly communicated with district staff on a regular basis mainly by writing and distributing a weekly article in which he shared his philosophy, problems, pleasures and anxieties. Otherwise, he communicated with subordinates only when they ran into difficulties, and then he approached them with a "let me help you" attitude. Dr.
Bottomly apparently trusted his deputies, principals and faculties and quite literally let them alone to do their jobs as they saw fit. The one area of operation over which he demanded control was that of public relations, for he insisted that only the central administration give out information that could be made public. Otherwise, his was a "hands-off" style.

Under Dr. Bottomly, the principals were entrusted with considerable power and responsibility, and for the Kullerstrand principal, who had developed definite ideas concerning changes to be made, this leadership style was highly advantageous. The Kullerstrand principal received encouragement to attend the Harvard-Lexington Summer School, had administrative support to institute team teaching and other innovations between 1962 and 1965, was able to accept the offer and challenge of instituting flexible modular scheduling with little administrative interference. He could successfully negotiate for the replacement of some full-time teaching positions with para-professional positions, for the remodelling necessary to introduce flexible modular scheduling, and for Kullerstrand's autonomy in budgetary matters. It was the principal's observation that without the independence offered by Dr. Bottomly, Kullerstrand would have been unlikely to travel the new and untried avenues that it did.

But the Kullerstrand principal noted that although Dr. Bottomly's style was appropriate for him and that Kullerstrand thrived under his unfelt leadership, some schools and principals in the district did not so respond, and that, in general, the spirit of innovation and charisma generated by
Johnson rapidly seemed to disappear. It seemed that after being used to the genial presence and support of Dr. Johnson, many schools fell into apathy upon his departure, and without a dynamic, charismatic personality to replace Dr. Johnson, they began to degenerate. Dr. Bottomly's style, though highly appropriate for Kullerstrand and a few other independent and progressive schools, seemed inappropriate for the district as a whole.

**Superintendent Walker, 1966-1968**

Forbes Bottomly accepted the superintendency of Seattle, Washington, just as Kullerstrand was beginning to implement a flexible modular schedule. His successor was Del W. Walker, an educator from the west coast. He vocally supported innovation and diffused decision-making. He made explicit the implicit philosophy of Forbes Bottomly and advocated that principals assume responsibility and authority for activities occurring in their buildings. Rarely was his behavior consistent with his attitude. During his reign a network of central administrative forces was developed which emerged with so much power that the principals' decision-making discretion was reduced at times to near zero.

The classic discussion of Niccolo Machiavelli which supports the leader whose position is protected and maintained by the awesome army of men with whom he can surround himself was exemplified in Jefferson County at this time. 7 This

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author's observation and experience indicated that without a battery of central personnel who absorbed a significant percentage of the district's budget, Del Walker could not hold the field against anyone who assailed his policies and programs. He desperately needed the defense of his colonels who were obliged to give refuge within their walls and stand on the defensive.

In a sectional staff meeting with Del Walker, he was asked why principals didn't have more control over resources of their operation, both human and material. The response simply was that principals needed to learn how to crawl before they could walk.

His style was basically one of high relationships for those close to him for whom he felt something in common, as partners at the golf links or the poker club. As to middle management, his relationship was low concern.

The styles of Johnson and Walker seemed to embrace a similar concept or philosophy basically different from that of Bottomly. Bottomly believed that the local schools should assess the needs of their community and implement the district guidelines according to the community needs. To accomplish this, the principal and his staff decided much of the in-service essential to the school community. A major function of the principal was to play the role of instructional leader. If central administration assistance was necessary, the school staff initiated and engaged their services.

Johnson and Walker believed that the central administration with its vast empire of people and expertise could deal
with district-wide in-service more effectively. Their hiring practices assumed that with basic credentials and an extensive in-service program the schools could operate satisfactorily. The role of instructional leader seemed a secondary characteristic for principal behavior. Principals during the era of Johnson and Walker were mandated many tasks and assignments. Mediocre and uncreative principals seemed to function effectively.

This author feels that it is important for the reader to understand what has preceded in order to appreciate some of the constraints and some of the supporting factors working for the Kullerstrand Elementary School.
CHAPTER III

THE SEARCH: FROM STATUS QUO TO READINESS

Given the background material outlined in previous chapters, Chapter III will briefly describe the Kullerstrand Elementary School, its physical structure and prevailing practices, as it existed in 1960. Elements in the school which, in the principal's view, were causing dissatisfaction and a search for new answers will be outlined. Finally the sources of new approaches, and the principal's and staff's utilization of new concepts and developments to overcome recognized problems and to recognize and deal with previously unrecognized areas of concern will be explored.

I. The Kullerstrand School -- 1960

Kullerstrand Elementary School opened its doors on February 1, 1960 with 555 students: 60 kindergartners and approximately 165 students in each of grades 4, 5 and 6. First, second and third graders were housed in other school buildings in the immediate area.

The staffing pattern was a simple one: six teachers for each of grades 4, 5 and 6; one kindergarten teacher who taught two sessions, one each morning and a second each afternoon; half-time art, music and physical education teachers
who were shared with another school; and a principal, secretary and custodian. Additional part-time staff included an instrumental music teacher (two half-days per week), a speech therapist and a nurse (one half-day per week each), and a psychologist (shared with ten schools on a need basis). Lunch was served in the school cafeteria by a cadre of district employees who functioned separately from the local school.

Budgets in Jefferson County for elementary education were negotiated by the Director of Elementary Education and the Superintendent. Total expenditure per student in the R-1 district amounted to $343 in 1961.

Transportation was managed through the central district under the policy that all grade school students living a mile or more from their assigned schools could ride buses. The location of Kullerstrand School necessitated that 80% of its students be transported by bus; therefore the bus schedules dictated the opening and closing of school, and all extracurricular activities had to be accommodated within the regular school day.

The physical design of Kullerstrand was typical of the early 1960's. Conventional "egg crate" classrooms (eighteen of them) capable of seating forty students each were arranged on either side of a corridor that extended the length of the building. Centrally located was a large all-purpose room and a large gymnasium, with the administrative office and boiler room adjacent. Two centrally located lavatories and a self-
contained lavatory in the kindergarten room provided the only toilet facilities. Also centrally located was the library, a room large enough to seat no more than ten persons at any one time. There were no rooms for special activities or for conferences, and storage space was woefully inadequate. (see Figure 3, page 35).

Pupil achievement on the Iowa Test of Basic Skills indicated that performance in all areas was about average, the school median identical to the district median, and the district median slightly higher than the national median.¹

II. Elements of Dissatisfaction

Over a period of time a number of district-wide and specific school practices became sources of dissatisfaction to the principal, and to varying degrees, also to the students, staff and parents. Specifically, these included a seemingly irrelevant curriculum, frequent class interruptions by part-time staff and community persons, ability grouping, the evaluation of students, and the use of cumulative files. These specific practices, it appeared to the principal, were the cause of a great deal of parental pressure on students and were creating an unhappy, unlearning student body, trapped

¹ The Iowa Test of Basic Skills, administered in February of 1966, indicated a national median of 5.2 for fifth-grade reading. Jefferson County district results indicated a median of 5.4. The Kullerstrand median was 5.5. These results were consistent with those obtained over the previous five years.
FIGURE 3.
Floor Plan of Kullerstrand Elementary, 1962
(Pre-Flexible Scheduling)
along with teachers and parents in a system no one liked, but no one knew how to correct.

A. Irrelevant Curriculum

In 1960 Kullerstrand School was implementing a curriculum based on adopting a basic textbook for each subject in each classroom, the textbooks being selected by the Director of Curriculum (one for each academic area) and his hand-picked district-wide committee. Each committee generally selected two basic textbooks for each grade and level, allowing the teacher to choose between them. Supplementary texts were also chosen by the committee and supplied to the teachers. District policy specified that each student have a textbook for each subject. It seemed to the principal that every teacher accepted without question the author's views, and expected that her students do the same. In most classrooms, the class read a chapter together, then engaged in a teacher-directed "discussion" based on concepts selected by the teacher. This was followed with an "objective" (true-false, fill in the blank) test. Only on rare occasions did students select areas to pursue or actually devise independent work. If a student did anything that the rest of the class did not do, he was invariably required to make a report of his activity to the rest of the class, to answer the teacher's questions concerning the activity, and to be graded on his performance.

Although each classroom teacher was supposedly responsible for granting equal weight to each of the academic areas, science, math, social studies and language arts, in reality each teacher decided independently how much time and effort
would be spent in each area. Many teachers at Kullerstrand seemed, to the principal, to slight science and math because they felt more comfortable and secure with other content areas. On the other hand, the principal discovered, after some months, that one teacher taught only math and science. He contended that social studies and language arts were irrelevant in an age of technology, and he implemented their study accordingly.

From the principal's observations of curricula being implemented, he concluded that the content being presented to students was less than interesting, often highly repetitious, presented as factual information to be memorized, and frequently lacked any connection to the real concerns of students.

B. Class Interruptions

At a time when excellence in the classrooms was the national cry, much frustration was experienced by teachers who believed that the amount of time they spent in direct contact with students was the critical factor in student performance. Kullerstrand teachers expected the sanctity of the classroom to be protected by the principal. They did not want salesmen, parents, speech therapists, instrumental music teachers, nurses, PTA spokesmen, insurance actuaries or other regular teachers to interrupt their instructional processes. But because special teachers were present for only brief periods of time, these teachers thought it crucial that students be scheduled for them while they were there.
Schedules were built around art, music and physical education. When the instrumental music teacher arrived, from one to eight students might leave each classroom. The nurse came with eye and ear tests, dental checks, height and weight charts, and a whole routine of important and menial tasks. "Use them when you get them" was the district policy, and of course these specialists were to have rooms, offices and telephones at their disposal. The effect of these seemingly unresolvable class interruptions, at least two per day per classroom, on the regular full-time staff was one of resignation with frustration. Relations between the regular and part-time staffs were superficially cordial, but obviously strained. Hostility appeared close to the surface.

C. Ability Grouping

Because reading ability was considered the basis on which a child could learn the content of all academic curricular areas, students were assigned to relatively homogeneous groups within each grade level, as determined by their performance on standardized tests, past classroom performance, and teacher observation. Each regular classroom teacher was assigned one group, which constituted a self-contained classroom. The children were exposed to other teachers only through their experiences with art, music and physical education. Children in a particular room were assumed to be pursuing the same subjects at the same level and speed; there was no evidence of individualization within any one classroom. Although the staff talked about individualized learning as an
ideal of the future, its practicality was questioned, and no one appeared willing to learn more about it or to try it. The closest thing to individualized instruction occurred in the rare instance when a teacher was faced with a student who obviously was so far ahead of the fastest group or so far behind the slowest group that his presence was a threat to the teacher and a distraction to the rest of the children. Even then, individualization meant only that the child was assigned a task and set in an empty room or corridor, out of sight of the group, who then could stay together.

D. Student Evaluation

The principal had always felt uncomfortable about report cards. Much as he tried to be fair and honest as a teacher, he never felt justified in so evaluating a student, and as an administrator his discomfort was intensified. Although a district-wide standing committee was charged with investigating the effects of report cards and acting to improve the evaluating and reporting system, the Kullerstrand principal noted that the committee was doing little to correct the apparent negative effects of the current system. He noted especially the following:

(1) Report cards were issued every nine weeks, regardless of whether a unit or project was completed.
(2) Much information conveyed could not be validated and was highly subject to misinterpretation.
(3) Degree of conformity, rather than performance or ability, was often the criterion of evaluation.
(4) Report card evaluations seemed intimately related to social status, thus segregating students as effectively as racial or religious discrimination, fracturing the community along social class lines, and pressuring students to attain the symbol of the parents' attained or desired status.

(5) The evaluation was considered by parents, students and teachers as a final judgment of the worth of the child. The damage to individual self-concepts was devastating. ²

E. Cumulative Folders

It was the principal's observation that cumulative folders on children at Kullerstrand served, in too many cases, to label the children prematurely, identifying especially those youngsters with whom the early primary teachers had had trouble, and effectively assuring that subsequent teachers would expect and observe similar behavior. Subjective evaluations made when a child was six or seven years old often seemed to provide a basis for judgment of the same child years later. Also, the principal noted that sometimes as many as 20% of the folders for a particular class indicated that teacher's judgment that the child had "emotional or learning disabilities" which necessitated psychological assistance.

² The concerns felt by the principal are more fully expressed by B.E.J. Housego in the Canadian Education and Research Digest, Volume 8, No. 4, September 1968; pp. 245-257.
but the vast majority of these children never saw a counselor or psychologist, and the principal's contact with these students suggested to him that the indication of "emotional or learning disabilities" by some teachers might mean little more than that the child at some time threatened the teacher's classroom control by overtly or covertly demonstrating frustration with the expected conformity.³

F. Parental Pressure

As a result of the practices of the school, Kullerstrand students were pressured to conform while in school, and they were equally pressured to excel at home. It was no secret in the community which groups were "fast" and which were "slow," and parents were not subtle in their desires to have their children at the top. The intense pressure exerted on the children was exhibited in many ways: homework was demanded, supervised, and sometimes completed by not only a few parents; sizable sums of money were promised to children as inducements to bring home top grades; family trips were planned and cancelled on the basis of children's report cards. It was the principal's personal observation that in many of the homes of Kullerstrand children, social status and family congeniality and activity revolved around the grades the

³ Research concerning utilization of cumulative records is reported by Joyce Newman in "The Abuse of the Cumulative School File" (mimeographed).
youngsters brought home and the groups to which they were assigned.

G. Student Problems

The principal observed numerous instances in which students who exhibited behavioral or emotional problems in one classroom lost their symptoms when they left that classroom. One case in point:

Jerry reported stomach pains daily around 10:15 a.m. Upon complaining to his teacher, he was sent to the school office. This usually led to his going home, where he rested, ate, and returned for the afternoon. One morning when he came to the office, the principal suggested he try sitting in another room with another teacher instead of going home. He agreed, and remained the entire day. At dismissal time, he quietly approached the principal and whispered, "I think, I can learn better in that room." He was placed in the new environment and never again complained of an ache.

Because he continually observed other, similar but less dramatic incidents, it seemed obvious to the principal that Jerry was not unique, and that it was probably the general insensitivity of the teachers to the unique needs of individual students that led to the seemingly high number of behavioral and emotional problems, including psychosomatic complaints, among the children.

H. Negative Self-images of Students

As can be seen from the procedures outlined above,
Kullerstrand was fostering the developing of negative self-images in its students. In retrospect, the principal was appalled that procedures and processes which reinforced negative self-images were the rule rather than the exception. Nevertheless, the following deserve added attention:

1. Ability grouping was devastating even to students placed in top groups. When students who had never known failure eventually met with a task beyond their ability, they were led to believe they were no longer so worthwhile as they once had been.

2. Students placed in lower tracks for extended periods eventually believed that they could perform no better. Returning to school each year, they could look forward to nine more months of review of knowledge they were held responsible for not learning earlier. They recognized their teacher's low expectations of them, and they performed accordingly, spiraling further downward each successive year. 4

3. The ritual of report cards dominated the school and the home atmosphere. It appeared to the principal that students were rewarded for conformity and for guessing the response desired by the teachers. Creativity was not encouraged. Students seemed to

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believe that their teachers knew everything and that they themselves knew nothing.

(4) The social segregation imposed by homogeneous grouping seemed to extend beyond the confines of the classrooms. Although membership in cub scout and girl scout troops was theoretically open to all, the principal noted that, in effect, the children who were grouped together in school stayed together in extra-curricular activities as well. Scout troops were thus composed of children who spent their time together in school. Homogeneous grouping, it seemed to the principal, was permeating the entire community.

III. Sources of New Approaches for the Kullerstrand School

A. The Harvard-Lexington Summer School, 1962

During the summers of 1961, 1962 and 1963, Harvard University, in conjunction with the Lexington, Massachusetts School District, and with the financial support of the Ford Foundation, instituted the Harvard-Lexington Project, a major activity with the School and University Program for Research and Development. The School and University Program was based on the beliefs that public school systems might more easily close the gap between educational ideas and educational realities if they joined with universities in programs of research and demonstration, and that the existing organizational patterns of American schools may be inadequate in view
of the vast population increase and the shortage of professional workers as needs then defined.

The Project's major objectives were to discover and to demonstrate new and more promising ways of utilizing teacher competencies and to find more effective means of using the services of non-professional community people and of professionals who are either unwilling or unable to devote full-time service to schools.

The major thrust of the 1962 Summer School, which the principal attended as one of three representatives of Jefferson County (administrators and teachers nation-wide contributed to and learned from the Project), was the development of expertise in team teaching. Underlying the emphasis on team teaching were the beliefs that the creation of more attractive economic, social and professional conditions for teachers would lead to more effective teacher performance and thus to better instruction for children; that team organization would permit more flexible and appropriate grouping arrangements; that more appropriate grouping would better meet individual needs; that children would be stimulated by association with a variety of children and adults in a variety of environments; that teachers would find more interesting and efficient ways of presenting lessons through having larger blocks of planning time and through group planning; that the pooling of teachers' ideas and observations would lead not only to better teaching but to more adequate pupil guidance, and thus to better pupil adjustment. These and other as yet unspecified benefits were seen
as attainable through radically changing personnel organization and finding solutions to the accompanying administrative problems.

The Kullerstrand staff's dissatisfaction, as outlined previously, became increasingly apparent and troublesome throughout 1960, 1961 and the spring of 1962. By the end of the 1961-62 school year, the principal was convinced that something had to be done, and he therefore welcomed the opportunity to attend the Harvard-Lexington Summer School. Under the umbrella theme of Team Teaching were subsumed the development of a process of inquiry on the part of teachers and students, the use of observational techniques in modifying teacher behavior, and new developments in alternative curricula, all of which provided valuable insights into Kullerstrand's problems and avenues for alleviating both those and other as yet unrecognized areas of concern.

1. Inquiry

Inquiry, as a process, became a watch-word at the Harvard-Lexington Summer School, a way of viewing desirable teacher and student behavior. To the Kullerstrand principal, it offered a new way of conceptualizing effective learning. The process, especially as described by Richard Suchman, emphasizes that the power for learning resides in keeping questions open.

Discovery through inquiry was designed for children in the intermediate grades. It began with the observation that classroom teachers do too much teaching and their pupils did
not do enough thinking, the idea being to keep the inquiry as empirical and inductive as possible, without resorting to the physical manipulation of materials. The chief reason for this is the fact that the teacher has very little access to the cognitive operations that a child is performing while the child is exploring a piece of apparatus. An objective was to get the children to talk more so that teachers would have a clearer picture of how they were thinking. By permitting children to obtain data through verbalized operations (i.e., questions) we gave the teacher greatly increased access, however indirect, to the children's cognitive processes.

A second important advantage of a verbal approach was the increased emphasis on process. Without the concrete materials "staring them in the face" inviting physical exploration, children could devise more systematic and more intellectualized means to obtain the data they needed. Not only did they become more aware of the significance of process, but the teacher had the advantage of being able to keep track of it.

Providing children with a sequence of goals is another important function of inquiry training. The child faced with a phenomenon which he does not understand needs certain operational guidelines in order to undertake the task of discovering causality. Where do you begin? What kind of information do you need first? What is an adequate explanation? While most children, when faced with this task, don't actually ask these questions, such fundamental questions
are nevertheless important.  

No one at Harvard-Lexington became an expert in inquiry that summer. Rather, everyone became aware of the fact that an orientation toward inquiry and process stimulated new kinds of teaching behaviors, new kinds of questions to be asked about teaching and learning, and new ways of supervising.

2. Team Teaching

The improvement of teaching was undertaken at Harvard-Lexington through a structural concept known as team teaching. Among the reasons for establishing the School and University Program was the belief that public school systems might more easily close the gap between educational ideals and educational realities.

Related to this contention was the belief that too few first-rate people were attracted to teaching possibly because of the lack of opportunities for professional growth in the typical school.

Implicit in all efforts to create more attractive conditions (economical, social and professional) for teachers was the belief that these would lead to better instruction for children through more effective performance of the teachers. It was hoped that team organization would permit

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more flexible and appropriate grouping arrangements to meet individual interests. It was believed that children would be stimulated by association with larger numbers of children and with more than one teacher. It was expected that teachers would find more efficient and interesting ways of presenting lessons through having larger blocks of planning time and through doing more planning. It was thought that the pooling of teachers' ideas and observations would lead not only to stronger teaching but to better pupil adjustment and more adequate guidance. These and other benefits were seen as attainable if various administrative problems posed by radical changes in personnel organization could be solved. The Kullerstrand principal was intrigued with team teaching and resolved to attempt to persuade the Kullerstrand staff to design and adopt a team approach.

Team teaching, as this writer envisioned it, was also an effort to improve instruction by the reorganization of teaching personnel. This involved different schedules for teachers as well as changed allocations of time and space for instruction. It eliminated the rigid grouping based on one or two criteria and allowed for variations in student grouping depending upon the outcomes being sought. It allowed for teachers to observe other teachers teach the same group of learners. It forced teachers to communicate in planning for the same group of learners. It allowed for a variety of period lengths, sub-groups, and part-time teachers with special competencies, as well as for programmed instruc-
tion. Evaluation of students was based on the common observations of several teachers.

3. Assumptions Challenged

The following were seven basic assumptions challenged by team teaching as perceived by the Harvard-Lexington staff:

a. That all teachers are approximately of the same quality, with the result that the superior teacher never moves (as teacher) to a position of greater influence over a larger number of learners;

b. That each teacher should enjoy individual instructional autonomy; that is, that he has a right to be an absolute "king of his classroom;"

c. That the assignment of differential reward and status leads to poor morale and lower productivity;

d. That the employment of part-time and/or subprofessional personnel will somehow have undesirable effects;

e. That the nearly constant ideal class size for an instructional group approximates thirty;

f. That pupils can relate to only one teacher;

g. That values accrue from having one teacher teach all subjects.

The above assumptions seemed to address issues relevant to the Kullerstrand School and therefore they reinforced this writer's intention to translate and transmit some of the team teaching ideas to the Kullerstrand staff upon his return in September.

4. Observation Techniques

A major function of the Harvard-Lexington experience emphasized the "how" of observing and analyzing, with a view
to changing teacher behavior in the classroom.

Robert Goldhammer, the principal's observation team leader, was a young clinical psychologist who required evidence derived from focusing upon the behavior of teachers, students and their interactions for any judgments made. Behavior was defined as that which could be seen, heard, or seen and heard. Observers practiced full use of their senses, often focusing specifically on single interactions between teachers and students. Analyzing a teaching session which contained many interactions between individuals required the observer to identify specific behaviors which triggered specific responses. Some questions used to focus observer's attention included the following: How do students respond to the teacher? To each other? Is the session a hand-raising contest, controlled by the teacher? Does the teacher allow student views to be examined by other students? Does the teacher close all discussion by making judgments on what students say? Who respects whom in the group? Why? Does anyone monopolize sessions? What is the effect? Who plays leadership roles? etc..

Goldhammer suggested that an observer can be most helpful to a teacher by focusing on a few incidents in which the teacher's behavior was successful or unsuccessful in eliciting

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the desired student response. Then the observer and the teacher can discuss together their perceptions of the effectiveness of the incidents and can plan alternative behaviors to be tried.

Again, the Kullerstrand principal was impressed with the effectiveness of the approach, and began planning ways of encouraging his staff to focus on their behaviors and on that of their colleagues. He hoped to be able to create an atmosphere in which he and the teachers would help one another, non-judgmentally. Of particular importance, he thought, would be focusing the teachers' attention on the significance of their own behavior in providing adequate models for their students.7

5. Alternatives

The principal also came away from the Harvard-Lexington experience with new understanding of alternative curricula, alternative methods, alternative use of personnel and implementation.

As an example, Education Services Incorporated Science, Man, a Course of Study, the use of cuisenaire rods and programmed learning were processes and curricula which provided

teachers with alternatives to enhance the learning process. They suggested the exploration of learning through an approach which involved the student in a participatory role: A role where the student was actively able to inquire and discover through a sensory manipulative process, one which incorporated literary materials with any number of books, machines, media and people in order to improve the search for knowledge. It was an approach where a consortium of books, materials, media and personnel allowed students and teachers a degree of flexibility and a beginning toward decision-making at an early age.

6. The Process of Education Revisited

Upon the principal's return from the stimulating experience at Harvard-Lexington, he urged the staff to explore with him many of the ideas associated in the learning process. Most teachers agreed that insufficient planning was a weakness basic to our practice and readily accepted an organizational structure which provided for teams of teachers planning together. This necessitated large and small group scheduling of classes. It was a departure from the conventional self-contained classroom which generated a host of unplanned consequences -- unattentiveness, dehumanization of students, a contrast to individualization of instruction, teacher behavior modification, and peers observing and analyzing each others' lessons. The fuse of educational change had been ignited, and for three years the Kullerstrand staff implemented several structures, processes, and curricula which it felt
would improve the learning process for each student. There remains little doubt that the learning process was enhanced, however the state of teacher satisfaction never reached a comfortable level.

B. Consultation with Dwight W. Allen

During the 1962-63-64 school years, the Kullerstrand staff was in the process of implementing change, including a new openness to fresh ideas and the possible contributions of outside consultants.

Some of the dissatisfaction with the Kullerstrand staff emerged from the inability to organize more flexibly. There was an obvious need to individualize the learning process. Teachers were willing to strive toward that objective, but their concept of scheduling and grouping partially embraced some traditional approaches, and they weren't imaginative enough to become unentrenched. Some rationale and spirit to individualize the learning process were inherent among the faculty, but time, facilities, materials, teaching skills, busing schedules, and some general district policies all appeared to be obstacles.

Early in 1964, Dwight Allen, then associate professor of education at Stanford University, came to Jefferson County as an educational consultant. His primary concerns and observations about American public education seemed to make a lot of sense. In addition to good sense, his ideology served as a means to unify concepts for the Kullerstrand staff and
provided it with a comprehensive rationale for the implementation of innovations at Kullerstrand.

1. Performance Criteria

Performance as suggested by Dwight Allen should serve as the basis of evaluating students, teachers and administrators. Performance should be the determinant of schedules and other educational practices which help organize a school and put one's house in order.

However, it is usually time rather than performance which is the critical factor in determination. Students are evaluated according to the number of semesters or years they have endured. Job assignment, salary level, and promotion are frequently determined by seniority and longevity, regardless of performance. Scheduling (usually illogical), curricula (usually irrelevant), evaluating and reporting (usually disastrous), and a host of other educational malpractices are rationalized away on the basis that time dictates all.

Instead of clinging to such a ridiculous criterion, we ought rather ask questions which are based on performance criteria, as: As a fourth year German student, can he comprehend 80% of the content of a German newspaper? As a veteran teacher, does he create a feeling of excitement in his students? As an administrator, does he keep the focus on the human aspects of the organization? After a year of typing, can he type 40 words per minute with no more than one error per page? As stated by Dwight Allen, performance
must be stated in terms of achievement.

2. Schools for Students

Schools as they now exist are designed not for children, but for their teachers. Curricula, school schedules, and practices in the lunch room serve to illustrate.

The curriculum is generally based on teacher competencies and demands and is implemented to perpetuate the notion that the teacher "knows" while the students do not. Teachers' wisdom is not to be challenged; students' needs and desires are not recognized.

Schedules reflect great concern for teachers' convenience and little or none for children's needs. Thus is instituted reading for all students 60 minutes daily, 300 minutes weekly for math, 75 minutes weekly for physical education, as if all children are small robots programmed identically.

Lunch programs are designed to serve the maximum number of youngsters in the minimum amount of time. Because teachers want the lunch period to be a time without children, the youngsters are herded through lines, made to sit rigidly at facilities designed to inhibit social interaction, and kept quiet by the unfortunate teacher on lunchroom duty. Instead of an informal learning environment in which children and adults can socialize together and learn from one another, we have a segregated assembly line that generates suspicion and hostility between generations -- all in the name of a short respite for teachers.
3. Accountability

Until very recently neither the omniscience nor the omnipotence of the educational administration was questioned. Instructional goals designed for all children without concern for the individual child went unchallenged, and although the school itself accepted accolades when students performed well, only the child himself was held responsible when he failed. The school's communication with parents was usually in the form of reporting how well or poorly the student was doing; no one judged how well the school was doing. But now, new standards of evaluation are being demanded. All children, with the exception of only a very tiny minority of severely retarded individuals, are capable of learning, and it is the school's responsibility to provide an environment in which all children can grow. Teachers and administrators must be held accountable for creating that environment.

4. Computer-based scheduling

Schedules, as noted above, usually reflect administrative and teacher convenience rather than student needs. Until now, teachers and administrators have simply not had the time to design anything better. But now conflicting demands on the teacher's and administrator's admittedly limited time is no longer an acceptable excuse. The computer has provided teaching staffs with the technology which permits them to organize new schedules, including alternative curricula, staffing patterns, facilities and materials. The flexibility
attained provides a school with an extensive array of alternatives from which a variety of learning processes and experiences can be tailored and developed.

5. Diffused Decision-making

Consistent with the concepts of performance criteria, schools for students, accountability, and new schedules offering alternatives is that of diffused decision-making. In an age when the development of responsible, mature citizens is the goal of all education, acceptance of authority from above can no longer be tolerated. Students and teachers must be recognized as being capable of responsible decision-making, and each afforded responsibility commensurate with his maturity. The day of central administration fiat in areas of concern to individuals must come to an abrupt end. For a start, students should have some authority over their lives, and teachers should be recognized and treated as professionals, capable of professional decisions.

6. Alternative Learning Environments

More than simply new names (i.e., resource center or learning center instead of study hall or library) for old jails are needed if children are to explore their world creatively. More space, used in the same old way, will not do.

David Gottlieb reports findings that demonstrate that teachers do not perceive themselves as decision-makers beyond the narrow confines of their own classrooms. See his **Acceptance of New Educational Practices by Elementary School Teachers**, Michigan State University, May 1966.
Instead, there need to be new concepts developed within the school, as well as new attention paid to the myriad learning environments outside the brick and mortar structure called the school. The sanctity of the classroom and the library is no longer acceptable.

*Alternative learning environments are essential for truly individualized learning for students.* The concept of alternative environments should be left open-ended and creative. An alternative school environment offers the choice of different kinds of climate and/or facilities of schooling for its clientele. This is the notion that there need to be "different strokes for different folks." The intent was honorable, however numerous the roadblocks seemed. The task was to customize the organizational process so that it might effectively distribute the school's resources to satisfy the needs of each individual student. Not knowing any abstract formula which would give information applicable to all subjects, to all types of students, the Kullerstrand staff was aware that designing alternative learning environments was a difficult problem to be solved by no simple formula. Good schools consider that students are individually very diverse, and that the community suffers much loss when quick children are made to keep pace with the slow or the slow expected to keep pace with the quick.

*Alfred Whitehead, forty years ago, stated:*

*The only discipline important for its own sake is self-discipline, and that this can only be acquired through a wide use of freedom.* The conditions
can be satisfied if the tasks correspond to the natural cravings of the pupil at his stage of progress, if they keep his powers at full stretch, and if they attain an obviously sensible result, and if reasonable freedom is allowed in the mode of execution. The environment within which the mind is working must be chosen to suit the students stage of growth and must be adapted to individual needs. It must never be forgotten that education is not a process of packing articles into a trunk.

IV. The Beginnings of Change: Implementation of New Ideas at Kullerstrand

The frequent diagnosis of a student's performance by groups of teachers accountable for his performance provided stepping stones toward change. Too often decisions were made to enhance teacher comfort and security rather than student needs. With thankful exceptions, students moved from secondary concerns to primary concerns. In spite of what was believed, the adults in the system largely ran it for themselves.

Although all the new ideas generated by the principal's attendance at the Harvard-Lexington summer school in 1962 and the staff's consultation with Dwight Allen in 1964 offered possible avenues for change at Kullerstrand, perhaps the most important effect of the staff's exposure was the gradual change in attitude that developed. Implicit in all the new approaches to education was the philosophical assumption that, contrary to the assumptions implicit in traditional practices, man is basically a well-intentioned, continually growing organism who needs only support and encouragement to develop his potential. In the years 1962-65, the principal became
aware that the staff at Kullerstrand, despite frustrations and setbacks, was slowly growing to adopt this new view of themselves and of the children for whom they were beginning to feel responsible. Of course, not all of the new approaches were immediately feasible, but change began in many small ways.

A. Team Teaching

During the 1962-63 academic year, the Kullerstrand staff designed and implemented its first team-teaching plan. A fourth, fifth, and a sixth-grade team each consisted of 150-175 students, five teachers and a clerk. No hierarchy was established, as the teachers expected leadership to evolve within the group and to change according to need. The team struggled to schedule small groups and individualize instruction, but without the help or guidance of experience, large group instruction became the norm. Although everyone worked hard, and although teachers frequently made creative presentations, a great deal of dissatisfaction was felt by staff, students and teachers. In most instances, students were gathered together to hear and absorb. In actuality, they were little more than spectators, watching the teacher-performers. Students were not involved with the content, with the teachers, or with each other. Although the teachers liked working with each other and felt supported and challenged by their peers, dividends for students were slight.

But through this first, unsuccessful effort, a camaraderie and sense of purpose seemed to be developing among the
staff, and as the year progressed, a new team-teaching design evolved from the frustrations experienced by the staff. In 1963-64 the Kullerstrand teachers instituted a discipline approach, with math, social studies, language arts, and science teams developing for cross-grade-level teaching. Teachers were delighted to spend all their time with their personal preferences, and both small groups and individuals pursuing independent projects found their way into the schedule. With the teachers no longer tied to traditional concepts, flexibility began to be a reality. Teachers and students alike began to move into new areas, to explore more, to experiment more. All seemed imbued with new life, and student performance and attitudes were evidently improved. Years later, in looking back on the years 1962-65, the principal concluded that it was the staff's acceptance of the team-teaching concept and their whole-hearted effort to make it work that laid the foundation for all the changes which at that time were beyond imagination.

B. Observation Skills and Performance Criteria

With the teachers working as teams, the principal had little difficulty introducing teachers to the observation skills he learned from Robert Goldhammer at the Harvard-Lexington Summer School. Beginning observation and feedback sessions were admittedly anxiety-producing, and everyone's sensitivity to both himself and others was tested. But the confrontations experienced in these sessions produced honesty,
boldness and mutual concern in a staff that previously interacted only on a superficial level. The entire staff realized that the most severe critic of a school ought to be its faculty. They criticized themselves and one another on the basis of performance, and teachers grew measurably as a result. The principal took on a new role, also, one which provided concern and structure to each teacher and helped individual teachers attain specific objectives set by the teacher.

C. Alternatives

The staff gained new insights into a variety of learning processes and experiences. Team teaching, large and small group work, independent study, and openness to new curricula created an atmosphere for alternatives. Quiet areas, talking areas, listening areas and social areas began to develop in addition to areas devoted to specific content exploration. The most obvious physical change was the creation of a science laboratory, a challenging environment that was always full of learning children. Content areas began to compete for the attention of the children, with the result that the school became an interesting, involving place. Interest in the school was generated among parents and other community people, and school issues became community issues. There were frustrations, setbacks, and failures, too, but these seemed to be taken in stride, and progress usually emerged.

Kullerstrand Elementary School was indeed involved in change, but not nearly so deeply as it would be in the very near future.
CHAPTER IV

AN OPPORTUNITY TAKEN

I. The Decision

At the time Dwight Allen consulted with Jefferson County, he believed that the concept of flexible modular scheduling could be designed and implemented in the elementary school. His request that Richard J. Clark develop that notion at Earle Johnson Elementary School where Clark served as principal was declined. Clark suggested to Allen that Kullerstrand would be more appropriate to become involved. After a brief period of about two weeks, Phyllis Roop, R-1 Director of Curriculum, and the Kullerstrand principal joined Clark and Allen at Denver's Stapleton Airport where a proposal was offered for Kullerstrand and the Stanford Secondary School Scheduling to engage in an experiment to develop an elementary model for flexible scheduling. Phyllis Roop had encouraged the development of flexible scheduling at a high school and junior high school within the district, and was supportive of the attempt to do so at an elementary school as well.

After hearing Dwight Allen speak about a new orthodoxy of education on several occasions, the Kullerstrand principal was convinced that Allen's interpretation of the learning process was basically sound. The principal's concerns were
shared by faculty, students, some district personnel and the Kullerstrand community. The previous three years' experience with a variety of grouping practices, time modification, teacher behavior modification and curricular changes was sufficient motivation for the school and community to keep searching for better answers to the old problems. The Kullerstrand staff felt that major change in the direction of flexible scheduling had begun and that guidance, support and expertise from Stanford consultants would address the following concerns:

-- provide for individual differences, different children with differing abilities at different stages of growth;

-- utilize unique teacher competencies most effectively;

-- utilize time more effectively;

-- utilize space more effectively;

-- allow teachers to make decisions concerning both themselves and their students;

-- allow students to make decisions and exercise options concerning their learning;

-- provide an environment that fosters inquiry and creativity;

-- create a school that operates on the basic philosophical assumption that people are trustworthy and inherently capable of maximizing their potential;

-- make the student an active participant rather than a passive observer in the learning process.

Following Kullerstrand's acceptance of the offer of Stanford University computer time to implement flexible modular scheduling, the principal began to collect necessary information for himself and his staff. Flexible scheduling
was to be an experiment at Kullerstrand, and he felt unsure as to both its components and its implications. In March, he made his first trip to Stanford University to consult with persons more experienced in the plan than he, and on the way he stopped at Las Vegas, Nevada, where he visited Roy Martin Junior High School, which was at that time using flexible scheduling. He thus personally experienced, for the first and most significant time, the excitement, spontaneity and exploratory attitude of youngsters who were trusted to design part of their learning experiences. At that school the principal spent about two hours in the cafeteria, joining groups of students while they lunched. He talked with students who had previously posed behavioral and truancy problems (by their own admissions), students who had never before known success in school, affluent youngsters, poor youngsters, black, brown, and white youngsters, and he was overwhelmed by their universally positive attitudes toward school, toward learning, toward one another, and toward him, by their openness and spontaneity. They were friendly, excited, happy to be in school, and anxious to learn. The principal went on to Stanford eagerly anticipating exposure to knowledge and skills appropriate for making Kullerstrand an equally exciting learning environment.

During his five-day stay at Stanford, he was associated with secondary principals from eight high schools who had experienced at least one year of flexible scheduling. The long daily sessions concerned loopholes in scheduling,
recommended and improved new (decks) forms for computer communication, rationale for large and small groups, the use of unscheduled student time, open and closed campus, continuous random achievement monitoring, resource centers, the use of aides and a glossary of terms which seemed like a foreign language to him. His inability to translate abbreviations of RAP (Room Assignment Program), PPM (Periods Per Meeting), SAP (Student Assignment Programs), and other terms common to the experienced principals was embarrassing and frustrating. He later reflected that this particular experience was responsible for his energetic development of the attitude and skills essential to understanding and successfully implementing flexible scheduling.

II. Kullerstrand Plans

A. The First Try

Since the program of Kullerstrand was to be radically different from that of the other schools in Jefferson County, the teachers were immediately offered the opportunity to transfer to any other school in the district if they felt uncomfortable with the anticipated Kullerstrand plan. The opportunity was exercised by none. The staff began meeting voluntarily for three hours per day (one hour before school in the morning, two hours following the closing of school) to learn what their new roles were to be and to generate data for the computer. The principal assumed an active role to
conceptualize the model, incorporate research findings, foresee problems, and translate the needs of the staff to the computer. In order to maintain a leadership position, he made frequent trips to Stanford University and to secondary schools using flexible modular scheduling to learn the educational rationale and technical data that he and his staff would use. Basically, he and the staff discovered that they had the power to decide how to use themselves, their resources and their time to best serve students, and that they could implement their choices by scheduling classes, facilities and themselves. Student availability, facility availability, and teacher availability were seen as three components of the schedule. Teachers, in order to supply the most effective data, needed to ask themselves numerous questions, including:

-- What are the needs of different students?
-- What types of groups enhance learning for different students?
-- What size groups facilitate the best learning of particular concepts and for particular children?
-- How frequently should established groups meet?
-- For how long should groups meet?

The staff accepted their new responsibilities, and tried to use sound judgment and substantial rationale to generate a schedule. All worked diligently, putting in extra hours daily throughout February and March. By the end of March, they thought they had a schedule to submit, but Robert Kessler, a consultant from Stanford, arrived to examine the proposal and
provide new insights and inputs.

B. The Second Try

The proposal contained teacher requests for large groups, small groups, and independent study time, with large groups dominating the schedule. In probing the rationale behind the requests, the consultant discovered that although Kullerstrand teachers were concerned with student needs, teacher needs still dominated their thinking. The large groups were seen, as they were via team teaching, as a means of freeing the teachers from the responsibility of being in charge of classes all day, allowing them time to prepare lessons and perhaps help a few individuals. The consultant helped the staff to realize that if they were serious about meeting student needs, they would have to view the schedule from that perspective, that the heavy emphasis on large groups didn't serve student needs, and that teachers need not sacrifice their unscheduled time by requesting smaller groups for shorter periods of time.

The staff, while disappointed with their efforts not being perceived as totally praiseworthy by the consultant, chose to accept the new insights and begin again, this time requesting large groups only to introduce and reintroduce study, utilize a resource person, present audio-visual materials, and occasionally evaluate. No group was scheduled for longer than two mods or forty minutes. During this second planning stage, children were also consulted, and although no
children actually sat in on planning sessions, their anonymously written evaluations of on-going programs received strong consideration. On May 5, the new request list was complete, and the data concerning teacher and student needs and requests was ready to send to Palo Alto, where the Computer Director, Professor Oakford of Stanford University, would translate it into computer data, feed the computer, and send back the results.

As completed, the new schedule demonstrated the following features:

-- small groups dominated the organizational plan, with fifteen or fewer students per group;

-- large groups were scheduled only for purposes of unit introduction, resource utilization, media presentation, and occasional evaluation;

-- teachers were scheduled for classes no more than fifty per cent of the time;

-- students were scheduled for classes an average of sixty-three per cent of their time;

-- regularly scheduled classes most often met two or three times a week rather than daily;

-- blocks of time were set aside for activities which required preparation and clean-up (art, especially);

-- language arts classes were grouped according to ability and performance criteria, the slower readers spending more time in smaller groups than the faster readers, who were granted more free time;

-- all classes except reading were heterogeneously grouped, the computer selecting students at random within each grade level;

-- some students with special needs and interests were allowed to take classes at grade levels other than their own;

-- students and teachers were granted the opportunity to request schedule changes;
— art, music and physical education became regular and accepted features of the curriculum;

— students' unscheduled time was available for them to make decisions each day as to how to use that time.

The information concerning course requests, room requests (remodeling was planned), time requests, and personnel and student lists were compacted into a small bundle (at least it seemed small considering the amount of effort that went into generating it) and sent off to Palo Alto, where the computer would soon generate the school master schedule plus individual student schedules. Beginning in the fall of 1964, the Computer Director and the Kullerstrand staff were delighted with the results — a master schedule and some five hundred compatible student schedules — without a conflict.

III. Kullerstrand School, 1964-1965

Beginning in the fall of 1964, Kullerstrand teachers began implementing their plans of the previous spring. They saw themselves working in ways designed for students; morale and energy were high. Staffing patterns were altered. They had accepted tasks in a cross-disciplinary manner. In addition to the regular, full-time academic staff, the art, music and physical education teachers became full-time, and all were assisted by paraprofessional teacher-aides. The staff had successfully negotiated with the district administration for relinquishing two full-time professional staff allocations in exchange for six paraprofessionals. One was assigned to
the library, one language arts resource center, one math-
social studies resource center, the cafeteria, the playground,
and the audio-visual center. Although there was some initial
fear that paraprofessionals might threaten the status of the
regular teachers, these fears proved to be unfounded, and the
staff soon fully accepted and appreciated the supervisory
functions and support provided. The paraprofessionals also
served and complemented the faculty by freeing them from
house-keeping chores to pursue their professional responsi-
bilities. Parents, too, became more involved, serving vol-
untarily as part-time playground and lunch-room supervisors.

With new responsibilities, teachers had new skills to
learn and new relationships to foster. Before the opening
of school, and continuing throughout the school year, teachers
helped one another in whatever ways they could. The observa-
tion and supervision techniques introduced by the principal
following his attendance at the Harvard-Lexington Summer
School were continued and intensified. Faculty members be-
came involved in observing one another in a cross-disciplinary
manner. Teachers were both observers and observed, with a
spirit of mutual respect and concern resulting. In instances
of observation, the observer and the observed sat down to-
gether following the observation sessions for an evaluation
session. In a few instances some bad feelings arose between
teachers, but as a result of these sessions, the principal
and the staff were generally impressed at how constructive
and helpful they were. The cross-disciplinary approach gave
teachers new insights and a broadening of techniques, as well as a new humility and a practical challenge. Observation and analyses were recorded, recommendations were made, however an atmosphere of interdependence and mutual trust was encouraged.

A great deal of public relations work with the community was considered essential. During the previous spring (the planning period) several school meetings were held to inform parents of the program rationale. Individualized learning was stressed, with intended use of teacher time, student time, facilities, media materials and paraprofessionals discussed. For three weeks prior to the opening of school, orientation sessions were held once or twice weekly, with approximately 150 parents at each session. The total program, its rationale and implications, was presented, and the cooperation and assistance of parents and other community members was sought. The principal sought and received from Central Administration permission to open the enrollment at Kullerstrand, allowing parents who preferred more traditional educational settings to take their children to other schools in the district, and allowing parents from other parts of Jefferson County to send their children to Kullerstrand, provided space was available. Over the first year, Kullerstrand gained five times as many students as it lost, losing seven and gaining thirty-five, some of whom came from over thirty miles away to attend school at Kullerstrand. The principal noted that although the children at Kullerstrand still rode buses a great deal, the
new schedule was creating a desire by the children to stay in school past the regular closing time, and parents were more and more frequently generating car pools to provide transportation for those so motivated. The effect, the principal noted, was that parents were at school more often, and they ultimately became more involved than previously. Parental attendance at school meetings increased and much wider interest and participation in school events was evident.

Physical changes at Kullerstrand were achieved during the spring and implemented during the summer. A bit of creativity and determination resulted in the removal of three walls and the installation of two portable walls, which provided flexibility of space. A larger library, three resource rooms (language arts, math-social science, and art), a science laboratory and an audio-visual center provided more alternative environments for student options during independent study time. Enough spaces were available to accommodate ninety per cent of the student body in independent study at any one time. Teacher stations open to students were also provided (see Figure 4, page 75). In addition, the cafeteria was opened for use eighty per cent of the school day, though somewhat to the chagrin of the lunchroom employees, who initially complained that so much was going on there that it was difficult to prepare the noon meal. However, they gradually adjusted to the new environment.

Shortly after school opened, it became apparent that some sort of traffic management system was necessary, for some of
FIGURE 4
Floor Plan of Kullerstrand Elementary
(Post-Flexible Scheduling)
the resource rooms (the enlarged, carpeted and cushioned library, the art studio and the science laboratory especially) were continually overflowing. Therefore a traffic light (red and green) was installed outside the door of each resource room, the red light indicating to people anywhere in the hall that the room was full, and the green that space was available. This system eliminated the worst of the congestion.

Two mornings of student orientation at the beginning of the term were devoted to interpretation of schedules and location of facilities, personnel and materials, and two afternoons of trial with the new schedule detected problems and clarified questions. One of the biggest surprises to the children was the apparent lack of rules and regulations, in contrast to their previous school experiences. The availability of resource areas for use by students in their unscheduled time created competition between resource area personnel to make their areas more attractive to students; thus the resource areas became inviting places vying among themselves for student attention.

IV. Dissatisfactions Reduced

The practices previously considered sources of dissatisfaction for the Kullerstrand principal and staff under their traditional approach were altered with flexible modular scheduling.

Under the new system, children were exposed to an
individualized curriculum, with built-in availability of tutoring, special assistance, independent study, and decision-making. Because Kullerstrand had more budgetary autonomy, materials were purchased by the teachers for the students, and a wide variety of materials and equipment were thus made available. Those children who valued quiet and comfort frequented the library, which now contained cushions and furniture to seat ninety-four students. In this area, loud talking and socializing were not permitted. Those who were in need of a more boisterous environment could utilize the playground, always available and supervised. Here a student could spend as much as forty minutes (two mods) per day. (Teachers looked carefully at anyone who spent more than forty minutes per day on the playground to determine if he should be encouraged to explore some of the resource areas.) Surprisingly to the principal, few youngsters regularly tried to spend excessive free time on the playground — evidence, it seemed to him, that available alternatives helped keep children interested.

In addition to the library and playground, the science laboratory, art studio, language arts resource center, math-social science resource center, audio-visual center, gymnasium and cafeteria (music activities) were available for student use. Though classes sometimes met in all of these areas, they were small enough to also accommodate children on independent study pursuing their interests and activities. Materials, paraprofessionals, and fellow students were
available for interaction. In the science laboratory, a manipulative approach to learning proved so exciting that the lab's attraction for children became a challenge to the other resource areas. Children in the science laboratory often became so involved that they would spend days investigating scientific phenomena. In fact, so many children became involved that, in order to provide space for everyone, a time limitation sometimes had to be implemented and enforced. Many children who wanted more time had to return after school.

The language arts room, which seated about 50 students, contained materials and personnel assistance for children. It was in this area that the Kullerstrand principal and staff discovered that the attitude and behavior of paraprofessionals are as important as content expertise. The original language arts paraprofessional was a woman with a Bachelor's degree in English and a desire to support teachers. However, her attitude toward learning was one of disciplined torture. She believed that there was no way that learning could be fun, and conveyed her attitude to the children. Attendance was sparse. Both she and the principal realized her unsuitability for working with children, and she was replaced by a young mother who had completed eleventh grade, but who had the charisma to turn the language arts resource center into a comfortable, relaxed and helpful environment.

Math classes were designed to allow task completion under the direct guidance of the teachers, and students who wished to pursue independent study in math were encouraged
to do so in teacher-stations; therefore, it was decided that a math resource center was not essential, and instead a math-social science center developed. This area was designed to foster interaction, with maps, globes, textbooks, resource books, and atlases providing the academic framework. But not only academics was stressed here. From inception, the area was designed for social interaction as well, with youngsters sharing their personal joys, sadnesses and problems. It was to this resource center that students came to learn from one another.

The audio-visual center, in addition to providing materials and equipment, allowed students another alternative. Here those who were interested could learn equipment operation and media use, as well as have an opportunity to view and review materials related to their interests and activities.

In the art laboratory, classes and independent students shared a single facility, and both a full-time art teacher and a talented paraprofessional were available. The principal and staff noted that expansion of the art area would be desirable, but realized that for the time being, space limitations had been reached. They hoped to be able to expand the facility in the future.

The gymnasium was scheduled for coeducational classes fifty per cent of the school day, with the other fifty per cent being available for children on their free time. During this time a stations approach was designed to allow students to engage in whatever activities they chose.
Instrumental music activities were pursued in the cafeteria, with choirs and a band convening there. During unscheduled time, students could use the area to practice on instruments (including an organ equipped with earphones) or rehearse.

Special mini-programs for the entire school were easy to schedule without interrupting regularly scheduled classes, as every Friday afternoon the entire school, faculty and students, were unscheduled. As a result of this flexible time, various groups developed and presented programs for everyone in the school.

The flexible modular schedule implemented at Kullerstrand Elementary School focused on individualized instruction for elementary school children. No two children had the same schedule, and each schedule reflected the needs and interests of the child for whom it was designed. Also, any teacher, parent or child could request a schedule change at any time, an opportunity which was accepted 370 times during the first year of operation. Children interacted with a wide variety of children and adults daily and were granted the right to design part of their own personal learning environments from the myriad alternatives.

Class interruptions by part-time faculty and specialists were no longer a problem. Music, art and physical education had equal priorities and were provided for in the schedule. Children could see specialists on their unscheduled time. At first, it seemed that there might be a new source of
interruptions, those of visitors to the school. But soon
the initial apprehension about being on display subsided.
Visitors frequently expressed their observation of the matur-
ity displayed by students.

Reading classes at Kullerstrand were grouped within each
grade by performance levels. The slower readers met more
frequently, for longer periods of time, and in smaller groups
than did the faster readers until certain basic skills were
mastered. Youngsters could easily move to another level if
the one they were in proved inappropriate. In other areas,
students were randomly assigned to classes. Thus whatever
informal groups developed at Kullerstrand were based on in-
terests, and even those groups were fluid rather than static.
Interests and friendships became far more varied than they
had been, and interaction between school and community in-
creased as well.

New approaches for student evaluation and reporting were
also developed. The old report cards were eliminated, and
evaluation and reporting were made both more personal and
more meaningful. At the beginning of a unit of study, the
teacher would distribute to the class a list of instructional
objectives, usually between five and ten specific and demon-
strable objectives for the children to master during the unit.
When a child felt ready to be evaluated on any or all of the
objectives, he so indicated, and his performance was assessed.
If the student or teacher wasn't satisfied, either could re-
quest for reevaluation at some later time. When the unit was
completed (usually three or four weeks), the list of objectives and evaluations was sent home with the child. Although the parent returned a signature stub, the evaluation itself was retained only at home, with the child's cumulative folder at school containing a notation of the units covered (see Appendix A). In addition, there was a tremendous increase in the amount of personal contact between faculty and parents, both in person and over the telephone. The new system seemed quite satisfactory, but a few parents remained somewhat skeptical as to the effect of removing the threat of grades.

V. Changes Implemented Over the Three Year Period

During the principal's three years of administering a flexible schedule at Kullerstrand, the plan implemented in the fall of 1964 was studied and restudied. Much of the textbook curriculum had been replaced by a manipulatory materials curriculum. Units of elementary science designed for a laboratory served as the environment and vehicle to facilitate fundamental scientific concepts. Unitexts or thin paperbacks replaced many textbooks and were used to supplement the curriculum. Students selected unitexts with an objective or goal they intended to achieve. The laboratory approach of learning science served as an alternative mode of learning. Many youngsters who struggled through literary learning became recognized with the talent they displayed in a technological manner. For many it was a first opportunity to be successful. For most students it was
fun and rewarding to be able to venture into a theory and
determine its validity or non-validity. It was an initial
time in the school life of these youngsters that they could
experience failure as something other than bad.

The social studies curriculum which largely consisted of
the memorization of historical dates and events was replaced
with man and his relation to man. It focused on an anthropo-
logical, economical, and political view of society. An
underlying theme was an endorsement of Jerome Bruner's
Man, A Course of Study, whereby an inquiry approach to man's
behavior is central. An attempt to create reality with con-
temporary and futuristic problems dominated the seminar classes.
The role of the staff was visualized as "one that produced an
orderly, happy, useful citizen of his society." For this to
happen, the system must teach the student the skills that are
basic to producing the orderly, happy and useful citizen.
The Kullerstrand staff tried to serve as a middle ground be-
tween what the student wanted and what he needed.

The school and community engaged in philosophical battles
between the old line critics, who believed that the school
failed in its principle function of intellectual training,
and the romantic radicals whose interest lay more in emotional
and social development than in intellectual attainment. Since
the curriculum was patterned after a combination of old line
critics and educational reformers, emphasis on students'
feelings and need for joy in the educational process was an
objective. Parental reaction was frequently negative, which
led to endless constructive and destructive debates. Those who seemed aware and knowledgeable of curriculum content and objectives were less critical than the unknowledgeable who tended to draw intuitive conclusions occasionally based on insufficient data.

The Kullerstrand staff sensed a need for change in the orientation of our society's youth, a change from the traditional teaching methods to keep them interested and a part of the educational system.

A common agreement with the faculty was not to give failing grades to students. While giving failing grades was an acceptable way to weed out unmotivated students in the past, our job was to educate everyone and not have educational failures (students nor teachers), nor was our function to classify or label students for society or the junior high schools. Rather, an open transcript approach was implemented and practiced which provided reasonable alternatives for students. A plan which provided students a method to demonstrate knowledge and skills in a more individualized manner was preferred. The plan was one which allowed the pacing of learning at a rate commensurate with the student's needs. It offered flexibility of achievement which would be satisfactory to student, teacher or parent. It offered students an opportunity to learn rather than "getting students through."

Staff consensus was that there are three aspects to education: thinking, learning and memorizing. Thinking is to "figure out what to do when you don't know what to do"
while learning is committing to memory facts that are useful. Memorizing is committing to memory facts that have little importance outside the school on many occasions. The latter was the aspect of education which we tried not to overemphasize.

A significant facet of the Kullerstrand schedule was the type of alternatives provided and its use of paraprofessionals. The role of the paraprofessional was not limited to hygiene functions, supervisory details, typing, clerking or monitoring. Paraprofessionals did exclusively designed tasks designated by teachers who demonstrated a need for their services and had sufficient management skills to obtain good performance. The majority of time paraprofessionals were engaged in instruction with students on an individual basis. Much of that instruction was reinforcement or redundancy of teacher presentations to groups of nine to thirteen students. This writer viewed their behavior as that of facilitators of learning, especially for students but occasionally for teachers also.

Substitute teachers were seldom utilized, as teachers not only requested but insisted that their paraprofessionals guide their students during their absences. As most teacher absences are one and usually not more than three days in length, we operated using the paraprofessional as the teacher substitute. Reasons given by teachers and pupils for not wanting substitutes were as follows:
1. Paraprofessionals knew what the children were studying and where they were in the curriculum.
2. Student performance and behavior was not altered.
3. The use of substitute teachers was expensive.
4. Orientation of substitutes was time-consuming.
5. Substitute teachers didn't usually achieve or follow the teacher plans.
6. The substitute teacher budget could be used to greater advantage elsewhere.
7. Most substitute teachers usually spent only a minimum work day at their assigned school.
8. Notifying and assigning substitutes was time-consuming and frequently required additional personnel.

A major difference in the use of the paraprofessionals who outnumbered the teachers 32 to 20 was that the staff was convinced that several degreed and non-degreed paraprofessionals had academic, affective and psychomotor expertise equal to or superior to other staff members. Accepting that to be a reality, the utilization of some paraprofessionals to teach mini-courses prepared and designed by them soon became a frequent and extensive practice. Alternatives in curriculum provided the operation with more flexibility of time, personnel, space and student options.

As the principal negotiated with each paraprofessional, he developed a paraprofessional differentiated salary schedule. A brilliant lawyer housewife received three times the normal paraprofessional salary for each hour she worked. A degreed high school social studies housewife received two times the normal scheduled salary for each hour worked. A talented
art illustrator received two and a half times the normal rate. The normal hourly rate for paraprofessionals was $1.50. A capable crafts housewife received one and a half times the base for each hour worked. Performance and the ability to attract students served as criteria for remuneration.

The Three-I Approach: (Formal Instruction - Independent Study-Interaction)

The Three-I approach was an idea which emerged with flexible scheduling as a useful way to think about looking at instruction.

Our experience had taught us that students develop with the needed amount of formal instruction. Instruction is defined as that knowledge, guidance, or advice disseminated formally by instructors. Agreement was unanimous that some students need less instruction than others. The challenge was an attempt to define with each student the amount of instructional time necessary to perform activities expected or prescribed by his teachers. The staff's primary function was one of organizing and facilitating the students' instructional needs.

Also basic to a good educational program was sufficient time provided for students to do research, complete assignments and pursue interests individually during the school day. How learning occurs is a much-debated question. A lawyer parent has stated that his daughter as a fifth grade student did little learning while her teachers sprayed
knowledge upon her. She did, however, develop a keen ability for learning. The relatively small amount of time which she spent in formal instruction guided and motivated her to follow up and investigate the topic on her own. It was during this independent study time that learning transpired. The intrinsic reward of discovering alone was a skill which students could develop. The days were designed so that expected tasks and assignments could be completed during the school day. Personnel, materials and equipment were available and at their disposal. Faulty or mislearning was decreased as an error in content or judgment could be quickly amended. Providing independent study during the school day also increased equal opportunity for learning because the school resources and facilities were available to everyone.

The third ingredient essential for a quality educational experience was the need and opportunity for interaction between students. Personal knowledge and experience convinced us that much of learning evolves from peer group interaction, or the exchange of verbal information among interested parties. Another supportive aspect of the need for interaction is that as adults most people's communication is verbal. If that be true the development and refinement of verbal skills should be an area of greater articulation. Providing an environment which enhanced interaction was a need the staff had not contemplated. Students during the school day could study together, plan together and share their experiences. It also served as an alternative way of learning.
Finally, grades one, two and three were added to the school and to the flexible schedule. Although the staff was somewhat concerned that younger children would have some difficulty with the complexity of the approach, they had to conclude later that the young children seemed to benefit, even more than the mature fourth, fifth and sixth graders. They soon understood the process, and once involved they behaved as independent, interested, creative and responsible students.

Only the kindergarten program at Kullerstrand remained unchanged under the new program. Basically, it was thought that kindergartners needed a self-contained classroom to become acquainted with one another and with the school. They were simply too immature, it was thought, to take part in a flexible schedule.
CHAPTER V

SOME RESULTS

The evaluation of the Kullerstrand flexible modular schedule is basically, except for the section reporting test results, subjective. The Kullerstrand principal, students, staff and community, along with visitors from around the country, noted some effects which were of interest to the principal, staff and community, and which may be of interest to others contemplating the initiation of similar directions.

I. Meeting of Objectives

1) Individualized learning was provided. Every student schedule was unique, the result of several teachers assessing individual needs and prescribing appropriate experiences. Formal instruction, independent study time, and unscheduled time were provided, in varying amounts, for all students, with every student having a substantial amount of his time unscheduled.

2) Students gained some control over what they learned, who helped them learn it (if anyone), where they worked and what materials they used. Students and teachers together determined schedules rather than schedules determining
learning, and students were involved in the formulation of regulations.

3) Students and teachers both experienced wider contacts, meeting and interacting with more children and adults. Homogeneous grouping was decreased from 60% to less than 10% and cross-grade grouping (both formal and informal as the result of unscheduled time) was used. Where homogeneity was productive, as in reading classes, it was utilized, but it was no longer the pattern of the school.

4) Students experienced progressive involvement in decision-making and were allowed responsibilities appropriate to their age and maturity. As they developed work habits and study skills which enhanced their personal ability to achieve designed tasks, a broader trust developed between faculty and student.

5) Resources and alternative environments, meager at first, continued to expand throughout the three-year pilot study. Personnel, time, facilities, materials, and community resources were used more frequently to provide alternative learning and social environments.

6) Informal learning among teachers and students became increasingly accepted. Teachers became aware that they too are learners, and students became aware of their unique capabilities as teachers. The density of teacher and student scheduled time decreased because teacher expectation of student performance seemed to produce positive behavior.

7) Teachers spent increasing percentages of their time
working with small groups and individual students. Bookkeeping and house-keeping duties were either reduced or turned over to competent paraprofessional assistants.

8) An atmosphere of honesty and trust between students and faculty emerged. Teachers and students interacted more informally. Restraints and barriers were less noticeable and a feeling of confidence developed.

9) Evaluation and reporting processes changed from the periodic graded report card to negotiated agreements.

10) Class interruptions were accepted as an integral life experience within the organizational structure.

11) Parental pressure on students for grade and status decreased as grades were eliminated and improved communication through parent-teacher conferences evolved.

12) Student emotional and behavioral problems, as well as absenteeism and tardiness, decreased because students were actively involved in the learning process with teachers who exhibited concern for students and an excitement for learning.

13) Decision-making on the part of students became more extensive as they developed self-direction and a capacity for solving problems.

14) Teachers worked in areas of interest and concern, expending their energies to meet the needs and interests of youngsters, individually and in small groups.

15) Time and space were used as servants of student needs rather than as determiners of student and teacher activities.

16) Non-professional staff were extensively utilized to
enhance the learning environment by assisting students who needed additional academic or social guidance.

17) Community members, teachers and students became increasingly interdependent, providing support and encouragement for the others.

Substantial progress was made toward the objectives which were adopted by the principal and his staff and which were reported in Chapter IV.

II. Test Results

Test results indicated that flexible scheduling did not negatively effect the tested performance of Kullerstrand children. With about 50% of their time unscheduled, the children performed as well as they did under a basically self-contained arrangement.

On the Iowa Test of Basic Skills, administered to fifth graders in September of 1965, the beginning of the first year of operation with a flexible schedule, students at Kullerstrand performed slightly (thought not statistically significantly) better than did all Jefferson County students, and Jefferson County students tested at one-half year above the national norm. The central administration and the local community were both satisfied that local children were performing adequately.

In October, 1966, the Iowa Test of Basic Skills was again administered to 133 fifth-grade students. The total
test mean Colorado T-score for the group was 38.66, as compared with the national mean of 35.00. The ITBS was readministered to the same students in May of 1967 and the total test mean Colorado T-score was calculated to be 38.55. The test was administered to determine whether or not any significant difference existed between the two obtained mean scores. No significant difference was found. Grade level comparisons of national, county and Kullerstrand norms on all areas of the test are included in Table 1, page 95. From this it can be tentatively concluded that academic growth, as measured by this instrument, was normal. It can be further concluded that the flexible scheduling did not make a significant difference on the way children scored on the ITBS.

Further analysis was made by drawing a random sample of 60 students from the fifth grade. The sample population was then compared to the total fifth grade enrollment in regard to distribution of scores, sex and mean scores to insure that the sample was representative of the total fifth grade. These conditions were met by the sample. The total test stanine scores of each student was then plotted on a two-way frequency chart with their October, 1966 score on the X axis and the May, 1967 score on the Y axis (see Table 2, page 96).
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The table provides a detailed breakdown of scores across various categories, with columns for total test scores and specific areas like math, work skills, language, and reading. Each category is further divided into subcategories with specific scores and norms for comparison, including mean, median, and other statistical measures.
Table 2
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Fifth Grade Achievement
October, 1966 to May, 1967
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$r = .833$

$p < .01$
III. Student Reactions and Observable Changes in Attitude and Behavior

Students reacted positively to flexible scheduling; they assumed responsibility for unscheduled time. Not all were ready to plan and implement their own educations, for they were accustomed to a rigid schedule. So, at first, some took advantage of the freedom and used their time in seemingly irresponsible ways. The principal noted that when the youngest children (first, second and third graders) were added to the project, they assumed self-direction more rapidly than did the older children. The implications concerning the effect of traditional organization and processes in the school were evident. The principal concluded that unlearning was more difficult and time consuming.

After the introduction of flexible scheduling, some obvious behavior changes occurred. Whereas with the traditional organization, the principal was asked to deal with discipline problems almost daily, in the three years of the pilot study he was asked to do so in decreasing amounts. Regulations were reduced, boredom diminished, and mutual respect between students and teachers was developing.

As discipline problems decreased, so did absenteeism and tardiness. Students who had previously been chronically absent or tardy began appearing more consistently and punctually. Parents sometimes called or wrote to tell the staff that they had difficulty keeping their children at home when they were ill. Attendance records indicated that absenteeism
diminished from 4% daily to 2% daily.\(^1\)

Emotional problems seemed to lessen too. Unsubstantiated and possibly damaging anecdotal information was removed from cumulative folders, and children were seen for themselves rather than as a previous teacher had seen them. Minor complaints of aches and pains in school became negligible, and the use of the psychologist diminished markedly. During the three-year pilot study, no teachers referred a previously unreferred child to the psychologist as a result of that student's behavior in the classroom. The only children the psychologist saw were those with whom he needed to follow up earlier contacts. It seemed evident that the new organization and processes at Kullerstrand were helping to eliminate unnecessary concerns.

Students, treated respectfully and individually, responded with obvious enthusiasm, maturity and responsibility. The staff and visitors alike continually noted a school filled with smiling, energetic, purposeful and spontaneous children, excited by learning, independently challenged, and interdependent with one another. Kullerstrand's children were one evidence of success.

\(^1\) Jefferson County Personnel Services, Eighth and Quail, Lakewood, Colorado; 1965.
IV. Teacher Reactions and Observable Changes in Attitude and Behavior

Releasing teachers from house-keeping duties and responsibilities which suited neither their interests nor their capabilities served as a motivational factor. Given the freedom to pursue their talents and the responsibility to determine improved learning strategies, teachers became concerned individuals eager to know and respect students as individuals. Teachers made themselves unnecessary -- they began fostering trust, responsibility, exploration, cooperation and independence in children rather than dependence and submission, as had been the practice in earlier years. They showed themselves to be mature, responsible and cooperative. Some specific behavioral manifestations of these new attitudes include the following:

1) Teachers openly pursued learning, declaring themselves co-learners with children. They sought out new resources, new experiences, and children to help them learn. A high degree of anticipation and excitement resulted. The desire for better educational practices inspired 60% of the faculty to pursue additional University experience.

2) Teachers participated in community government and functions with students and parents. For example, if the instrumental music teacher and the band were performing at a local shopping center on a Saturday afternoon, many faculty and staff members were likely to drop by. Before the advent of flexible scheduling, it was unlikely for the faculty to
even be aware of such activities, much less to attend them.

3) During the three years of the pilot study, no teachers left Kullerstrand to take jobs in other schools, and many teachers from outside Kullerstrand made evident their desire to teach there.

4) Teacher absenteeism dropped markedly. Whereas before flexible scheduling teachers took an average of nine sick days per year (the allowance was one day per month), after flexible scheduling was instituted, the average taken was between two and three days per year. On numerous occasions the principal encouraged teachers to take a day off to pursue personal business of pleasure.

5) Teachers displayed their pleasure and sense of responsibility in the new system by setting and meeting high expectations for themselves. In order to accomplish all they set out to do, they generally arrived at school earlier and stayed later than they had previously.

6) Instead of complaining about student performance, teachers assessed the students' needs, prescribed learning activities, provided necessary instruction commensurate with the student's rate of development, and recorded growth and achievement.

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2 These figures can be found in the files of the District Personnel Director.
V. Parental, Community, National and International Reaction and Support.

With very few exceptions, reaction to the Kullerstrand program from outside the school itself was positive. Less than one per cent of Kullerstrand students were withdrawn from Kullerstrand to attend other schools when such transfers became acceptable, while five times as many transferred into Kullerstrand, even though their parents frequently had to accept responsibility for transporting their children many miles in order to have them attend. In a poll of Kullerstrand parents conducted early in the first year of flexible scheduling, 95% of the parents openly supported the new system; 4% remained uncommitted, and 1% disapproved.³ (See Appendix )

Parents became increasingly more active in the school and its functions, as did other members of the community, as paid paraprofessional assistants, as volunteers, and as interested parties.

During the three years of the pilot study, Kullerstrand Elementary School was the subject of innumerable local news articles and of five televised documentary films, all highly positive in nature.

Visitors from around the world came to Kullerstrand, and although no figures concerning number or identity of visitors were kept, the principal and staff received over

³ Survey results are included in the personal files of the principal.
4,000 individual letters of commendations, thanks, and appreciation. Some of the letters, of course, were merely formal courtesy notes, but the vast majority expressed delight, excitement, enthusiasm and hope for flexible modular scheduling in elementary schools. Reaction to the Kullerstrand program, on all levels, was overwhelmingly positive, and in fact may have been a significant influence in the continuing success of the innovation.

VI. Administrative Reaction

The central administration and most of the principals of other elementary schools in the district were hesitant to endorse flexible scheduling at Kullerstrand, and did not do so until nearly the end of the third year. The principals especially were suspicious of the Kullerstrand principal and skeptical of the program, but after success was positively achieved and virtually undeniable, they too expressed interest and support. At the time the principal left Jefferson County in 1968, flexible modular scheduling had been or was being instituted in eight of the county's sixty-three elementary schools.

VII. Long-term Impact

During the first year of the Kullerstrand study, curiosity and interest were spreading. Dwight Allen, in several of his consultation tours throughout the country,
referred to Kullerstrand as a program organized and staffed in a manner to bring about change in the learning process. As a result of Allen's publicity and the observations of educators who visited the Kullerstrand program, Cloquet, Minnesota, Temple City, California, Hastings, Nebraska and Alliance, Nebraska decided to design at least one elementary school in their systems embracing a similar educational rationale. Several members of the Kullerstrand faculty were invited by these districts to consult and share their experiences in flexible modular scheduling. As a result of these and other undelineated circumstances, a sense of pride and prestige was bestowed upon the Kullerstrand staff. This prestige seemed to serve as an additional motivating force within the Kullerstrand faculty to influence other educators positively.

The principal was convinced that flexible scheduling had taken on many facets and many new faces. The term flexible scheduling meant many things to many people. Educators' ability to meet the needs of individual students through a variety of organizational patterns within the past decade has affected the learning environment. The impact of flexible scheduling as was operational at Kullerstrand aroused a sense of purpose which seemed impossible to measure.

Certainly, flexible scheduling is no panacea for the problems besetting American education, but it was the principal's experience that it can provide a useful vehicle upon which reform can be soundly and practically based. The
instituting of flexible scheduling at Kullerstrand made it even more evident to him that if changes in schools are attempted too deliberately, the risk of failure is high. Systems are simply too complex to change much in response to a new approach that does not consider all components of the educational process, and the effect of the innovation is therefore lost. Change, if it is to be meaningful and lasting, must encompass all aspects of the process -- staff, space, time, curriculum and students. Flexible scheduling, as effected at Kullerstrand, radically altered all, and therefore, in the eyes of the principal, increased its chances of succeeding.
CHAPTER VI

REFLECTIONS OF THE PRINCIPAL

During the years that the Kullerstrand principal worked with flexible modular scheduling in elementary schools in Jefferson County, his directions were often determined intuitively. He tried to be sensitive to the needs and behaviors of students, of teachers, of other administrators, and of community persons, and he worked to satisfy all, but at the same time embraced a philosophy that was not wholly accepted by many colleagues or by all taxpayers. Therefore, he was frequently in conflict both with others and with himself, each conflict being resolved differently from the others. At the time, his decisions were often traumatic, for there was no precedent nor any model to follow, and each decision was made in the hope that results would satisfy everyone. It was an exciting and challenging existence, both painful and highly satisfying. This final chapter of the Kullerstrand story will illuminate the hurts and mistakes as well as the thrills and successes remembered most vividly by the Kullerstrand principal.

I. Hurts and Mistakes

Although the Kullerstrand experiment is remembered by
the principal as a resounding success, there were, of course, numerous problems, many disappointments, and some things he would have done differently had he been able to foresee the consequences more clearly. In this section, the hurts refer to those conditions over which he had little or no control and which hurt both him personally and the program as a whole. These stimulate painful memories. The mistakes, on the other hand, were probably controllable and alterable, but the principal and staff were not, at the time, aware of the negative effects these mistakes might eventually have.

A. Hurts

1. The PTA and Critical Parental Attitudes

It was not long after the adoption of flexible modular scheduling at Kullerstrand that the principal became aware that the Parent Teacher Association, as an organization, was not going to provide the support necessary for the innovations at Kullerstrand to become significant and successful. Instead of providing the time, support and encouragement needed, the PTA allowed itself to be influenced by a vocal minority that opposed change. Much bickering within the organization resulted in inaction in important issues and meddling in less important ones. The PTA was thus a highly negative influence. Because of their ambivalence and lack of meaningful support, the organization itself failed, disbanded, and died. Later, a new organization, supportive of innovation, arose, but the principal remembers with pain the
mistrust and hostility generated by the earlier organization, and regrets his lack of influence with it.

Less than one per cent of the students at Kullerstrand were withdrawn and sent to other schools because they and/or their parents refused to accept the innovations. In retrospect, the principal realized that this is really a very small percentage -- smaller than he might have expected, in fact -- but each withdrawal personally scarred him. The principal was delighted that, finally, he and the staff were providing an environment of imagination and an educational experience for purposeful learning, and it hurt deeply that some children who had the opportunity to experience the excitement of purposeful learning would be denied it in favor of the structure and mistrust so characteristic of many traditional environments.

Also hurtful were those parents who, while they did not withdraw their children from Kullerstrand, made themselves bothersome by continually and belligerently challenging the innovative ideas. Challenge itself was welcomed by both principal and staff, but closed, demanding, rigidly dogmatic challenge of the kind advanced by a few became harassment, couldn't be rationally dealt with, and simply hurt both the staff and the program. When the PTA disbanded, these parents directly harassed the school and the central administration by continually calling and visiting, shouting that their children were being cheated by not being under a teacher's direct control all the time, that since children were
directing themselves the teachers weren't doing their jobs, and that the whole program would turn out carefree, irresponsible hedonists. But they refused to listen to rationale and refused to transfer their children, and had to be endured until they quieted their harangues during the winter of the first year. They were a constant threat and dealt severe wounds to the principal and staff.

2. Administrative Difficulties

It hurt the principal to see tax monies spent for the salaries of curriculum supervisors, nineteen of them in Jefferson County, rather than for staff, materials and equipment that would be of direct benefit to the youngsters of the district. The supervisors (science, language arts, art, social studies, music, foreign languages, physical education, and a cadre of reading specialists) identified and recommended curricula, creating as much conformity among schools as possible. As far as the Kullerstrand principal was concerned, they served only to enhance the power of the central administration and increase per-pupil expenditures without the consideration of individual student needs. For Kullerstrand, where innovation and nonconformity were the watchwords, they were an obvious liability, often attempting to undermine creative, different ideas.

The principal views his years at Kullerstrand with great pride of accomplishment, but also remembers poignantly the loneliness and isolation dealt him by his peers in the district. He successfully challenged and changed several
district policies (as cited in Chapter IV), opened new avenues, experimented with new ways, denied that tradition knows best. As a result, all but a handful of the 63 elementary principals in Jefferson County criticized, ignored or isolated the Kullerstrand principal. He posed a threat, and they reacted by hiding behind the cloak of "regulations." Not until the principal announced his resignation from District R-1 in the spring of the third year of the pilot study did he receive any support or even inquiries from the majority of his fellow principals. The experiment at Kullerstrand was therefore lonely, but, more importantly, the principal realized how difficult and frightening it is to create change in an established, secure and powerful institution. More than his own personal hurt, he felt the hurt wrought on many well-intentioned but powerless people who have been and will be crushed by the inertia of those from whom they most need support and encouragement.

B. Mistakes

The hurts described above are recalled by the principal with painful resignation; the mistakes which follow, and which can generally be classified as examples of either insufficient expertise or of lack of attention to public relations, will not be inadvertently committed again.

1. Insufficient expertise

Kullerstrand was the first elementary school in the country to adopt flexible modular scheduling, and although
the staff tried to consider all contingencies, they remained unprepared and inexperienced in numerous significant ways; they failed to adequately prepare for physical facilities for the safekeeping of student possessions; until the latter year, they failed to provide a sufficient number of good alternatives for students; the cafeteria environment was virtually ignored; visitors were not planned for; teachers held on to old rigidities; and guidance skills for teachers were not stressed. Had they known then what they soon learned through trial and error, the staff would not have allowed these problems to arise.

In changing from self-contained classrooms, in which each student had a personal desk in which to keep his possessions, to flexible scheduling, in which students seldom sat in the same place twice, the staff failed to provide facilities in which students could keep their personal possessions. For the first few weeks of the fall semester, until adequate lockers were installed, with everything new and different and with expectations of significant concerns, the problem of lockers became the principal's number one headache and relegated to lesser importance what should have been more important problems. Nine out of every ten phone calls to the school concerned a lost lunch, cap, jacket or notebook, and the problem of security for personal belongings superceded problems of organization, misunderstandings, fears, and other significant concerns. A simple oversight created a trying situation.
The cafeteria system, uninspiring but at least adequate and consistent with a traditional program, proved totally inadequate with a flexible schedule. Students were granted the power of choice all day, but at lunch were expected to conform to supervision by paraprofessionals, a quiet non-social atmosphere, a rigid requirement to sit still for at least fifteen minutes, no choice of food, and an environment (long, rectangular tables, and a separate teachers' dining room) which stifled interaction. It soon became apparent that the environment of the cafeteria was antithetical to that of the rest of the school, and the following changes were made:

-- supervision was turned over to students, who managed it very well;
-- time limits (the fifteen minute minimum, especially) were removed;
-- meal choices were offered;
-- round tables were installed;
-- the teachers' dining room was eliminated, and the teachers sat with students.

These changes created an atmosphere consistent with the philosophy and objectives of Kullerstrand and of flexible scheduling.

Because of its innovations, Kullerstrand Elementary School attracted hundreds of visitors, and, in general, these visitors stimulated great creativity and more innovation, but the principal and staff were not prepared for the numbers
that came. In the beginning, the staff believed that a flexible school could meet visitors' needs as it met students' needs -- as they arose -- so they had no number or time limitations, and no specific policies or patterns for handling visitors. The staff or students, whoever was available when visitors appeared, served as guides. As a result of the school's openness, there were times when as many as a hundred visitors were in the school simultaneously, and although the human flexibility may have been adequate, the facilities were not expandable, and considerable frustration resulted. This experience convinced the Kullerstrand principal and staff that they should:

-- limit group size;
-- demand a reasonable time limit;
-- provide trained paraprofessional or student guides;
-- provide for a discussion with a member of the professional staff;
-- provide for feedback.

When instituted, these policies proved satisfactory to both the school and the visitors.

The staff, convinced of the necessity for choices, provided ten options for students in their unscheduled time, but soon discovered that these were insufficient. In some cases, the materials or resources provided were inadequate, and in others the need for contrasts between quiet and noisy areas, cognitive and psychomotor materials, audio-visual and paper-and-pencil emphases was ignored. The alternatives first
offered proved to be only a beginning, and modification was endless. By observing, listening to, and involving students in decision making, new options were conceived, designed and offered -- and everyone learned.

The Kullerstrand staff chose to institute flexible scheduling and supported concepts of self-directed learning, but they were trained and experienced in traditional approaches. When in the flexible situation, many acted far more rigidly than even they expected. For example:

-- several teachers were hesitant to allow students less structured time in particular disciplines, especially mathematics;

-- several teachers were hesitant to allow unscheduled students to enter their classes or teaching stations;

-- several teachers had difficulty allowing students to spend unscheduled time in the hallway;

-- several teachers hesitated to eliminate time requirements for assignments;

-- several teachers demonstrated an unwillingness to admit ignorance or to explore or provide new resources.

The principal concluded that, because all of the above rigidities demonstrated by teachers were self-corrected with time and experience in the program and with support and encouragement from colleagues and students, they might have been avoided by sufficient pre-service and in-service training prior to implementation.
The teachers' expertise in academic guidance skills was also inadequate. With the increased student freedom and responsibility, teachers had a new responsibility as well -- that of providing assistance in defining and accomplishing long-range as well as short-range goals, making clear and reasonable teacher-expectations, identifying relevant resources and directing students to them, and negotiating honestly and openly with students concerning their attainment of objectives. The beginnings were painful and frustrating, but with the personal assistance of Robert Mager and of his book, *Preparing Instructional Objectives*, the teachers learned to prepare, implement and evaluate instructional objectives, and to realize the flexibility allowed by the new program. If he had it to do again, the principal would stress these skills in pre-service and in-service training programs.

2. Public Relations Mistakes

In addition to mistakes made through lack of preparation or expertise, the principal recalls the mistakes he made as a result of inattention to details of public relations. He personally neglected public relations activities with other administrators and supervisors, with the school board, and with the community. He realizes that he probably could have soothed ruffled feathers and openly sought public support, but at the time the school itself and those persons directly concerned with it in meaningful ways were of the highest priority, and thus the public relations efforts were often
neglected.

The central administration, including supervisors, demanded numerous meetings with principals, most of which seemed to the Kullerstrand principal to be highly inefficient and irrelevant to his concerns. Since they were called to disseminate information, and since he usually passed the information on to his secretary, he thought secretaries would be better called to meetings than principals; he made his views known and did not attend all the meetings he was expected to attend. Also, because his immediate supervisor, the Director of Elementary Education, desired district-wide uniformity and was suspicious of the Kullerstrand program, the principal usually by-passed him and dealt directly with the superintendent. Because the principal saw his primary responsibility as that of orchestrating the Kullerstrand components into an effective operation, he ignored many district policies, balked at attending meetings he considered extraneous to the operation of Kullerstrand, and by-passed his immediate superior. District administrators were irritated by this behavior. The principal was not as sensitive to the needs of his peers and superiors as he might have been, and admits that perhaps he could have avoided some of the controversy he created with some judicious public relations efforts with his fellow administrators.

The principal did not provide for public relations activities in the community either, believing that excellence could speak for itself. Although he personally invited the
R-1 school board to visit Kullerstrand, he did not follow up the single invitation, and none of the members visited until the end of the third year.

Also, during the third year of operation, a vocal and politically powerful supporter of flexible scheduling convinced all five Denver television stations to prepare documentary films on Kullerstrand. Following their airing, and as a result of strong citizen support, the central administration came out strongly in favor of the concept of flexible modular scheduling and pointed to Kullerstrand as a leader. The principal learned that he could have benefited from such support much earlier, and resolved that in the future he would always have a sensitive public relations agent in some capacity on his staff.

II. Thrills

The thrills most vividly and fondly recalled by the Kullerstrand principal can be classified in four major categories: efficiency (in use of facilities, time and resources); influence on the revision of district policies; visibility and acceptance; and the climate and attitudes most prevalent in the school itself.

A. Efficiency

For an administrator it was a significant personal thrill to see efficient use of facilities, of resources, and of teacher and student time in a school building. Under the traditional approach first used at Kullerstrand, the spaces
available (basically identical rooms) dictated the program (basically identical self-contained classes) in which materials and teachers in each room were considered interchangeable and replicable. There was no flexibility in either space or time utilization; unique teacher competencies went unrecognized and unused; individual needs were ignored. Square boxes and identical time periods ruled the environment.

As the principal consulted and visited many schools throughout the nation, one observation he frequently made was the "use of facilities." A universal weakness seemed the lack of creativity or reluctance to uproot teachers from a homestead. The ever-present teacher domicile was rarely challenged or explored. After the inhabitants occupied a school house which was designed for 18th century living, administrators and teachers have perpetuated its uselessness mainly through maintaining the status quo: "That's the room where mother did her learning," or "Miss Blanks still teaches in that room." The tradition and chatter of the uninformed has too frequently in our society served as a lever to retain conformity and stifle greatness.

But with flexible scheduling, the principal personally saw for the first time flexible use of space in which varying environments met varying needs and in which the educational programs truly determined the kinds of spaces to be used. Flexible time allowed student and teacher interactions to be purposeful and meaningful; busy-work was eliminated; teacher
competencies were recognized and rewarded; traffic management and time keeping functions were eliminated from the teachers' responsibility; wasted time and waiting on the part of both teachers and students were eliminated; greater numbers of meaningful interactions between people were stimulated.

It was also a personal thrill to the Kullerstrand principal to be the first in the area to make real use of community resources, especially to have Kullerstrand demonstrate that using paraprofessionals need not be a threat to the professional staff and that their utilization can, in fact, provide the support necessary to allow teachers to become more professional. The principal proved that uncertified and perhaps uncertifiable personnel could be competent, and that they had no designs on the teachers' jobs. In fact, having parents and other members of the community involved in the instructional program created a new respect for the requirements and responsibilities of teachers. As one father, asked to present some unique information and experience, remarked: "I prepared ten hours for this presentation and was nervous as a cat in front of those kids. I surely couldn't do it every day!" The children benefited by receiving additional assistance, by a broadening of possibilities, and by exposure to new people and new competencies; the teachers benefited by receiving assistance, by widening their range of experiences, and by gaining respect and professionalism; the central administration benefited by increased interaction with the school and
its children. The principal remembers with pride his introduction of paraprofessionals the first year of flexible scheduling, their growing acceptance by school personnel and by the community, and their continued expansion (to 32 the third year) during his tenure. He firmly believes that without the support provided by them, the Kullerstrand experience would have been far less successful than it was.

Efficiency in the utilization of space, of time, and of resources, both material and human, was achieved and recognized at Kullerstrand.

B. Revision of District Policies

District policies in Jefferson County R-1 prior to the 1964-65 academic year supported traditional concepts and encouraged uniformity among the various schools, and any deviations from established policies or procedures were seen as examples of irresponsible administration. But the Kullerstrand principal realized that flexible scheduling demanded a new view from the central office, and he took considerable pride in influencing the revision of transportation policies, financial policies, and policies concerning student enrollment.

Before 1965, school buses delivered secondary students early, elementary students later, but with Kullerstrand's staggered days and open environments, new demands were made, and the central office was forced to reexamine its policy. Administrative expediency in busing schedules was replaced
by attention to student needs, and bus services were expanded by altered distance regulations to accommodate more children than they had previously. More students could ride buses; they could come earlier; and they could stay later.

Of extreme importance to the success of the Kullerstrand program was the school's winning control over its budget, a concession on the part of the central administration that was previously unheard of. With budgetary autonomy, the Kullerstrand staff was able to hire three paraprofessionals for each full-time teaching position it relinquished, and could spend money in new ways, i.e., for a carpet for the library floor, for moveable partitions, and for materials and equipment that would be used rather than for the district-wide text adoptions. The differences initially brought skepticism and criticism from various sources, but in the long run proved that an individual staff is most competent to minister to the needs of its students.

Prior to the innovations at Kullerstrand, district boundaries were clearly and firmly established. If a family was dissatisfied with the school in its district, they could do little to remove their child from that school except to move. But the Kullerstrand principal, believing that parents should have more control over the education of their children, saw the necessity for a new attitude, tried to convince the central administration that because Kullerstrand's program was radical and virtually untested (at least at the elementary level), parents ought to be offered a choice. It was
a thrill for him to see district policy change, but equally a thrill to note that two months following implementation of flexible modular scheduling, only 1% of the parents of Kullerstrand children took advantage of the new open boundary concept to place their children in other schools, while 95% supported the program and only 4% remained uncommitted.1 During the first year of open enrollment, five times as many children entered Kullerstrand from other local districts as left it, and in following years, there were always more applicants for Kullerstrand's program than space and staff could effectively work into the program. Fortunately, this problem was soon eliminated by the expansion of similar programs to other district schools.

To the principal, demolishing rigid and outmoded district policies was great sport, and he took personal pride in the influence of Kullerstrand in loosening and humanizing the district.

C. Visibility, Acceptance, and Program Dissemination

The innovations at Kullerstrand, and their impact on student life, community life, and district policy aroused a substantial amount of curiosity locally, statewide, nationally, and even internationally, and although the principal had never expected that he or the Kullerstrand Elementary School would remain anonymous, he was not prepared for the

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1 Survey results are included in the files of the Planning and Evaluation Unit, Jefferson R-1 Schools, Lakewood, Colo.
wide visibility achieved. He was, however, continually thrilled by the outpouring of interest and acceptance at all levels.

On the local level, parents were individually invited to attend daily orientation sessions and to observe their child or any aspect of the program in an attempt to alleviate anxieties, to provide information and encouragement, and to create an environment in which parental involvement was accepted. Attendance at orientation sessions was heartening for the staff -- in excess of two hundred nightly. Parents were generally convinced that they were an important part of the school and had valuable contributions to offer, and the paraprofessionals that were eventually to become such an important component of the Kullerstrand program were often recruited from among district parents.

Parental and community involvement were thrilling to the principal and to the staff, as was eventual district-wide recognition. Early in the second year of flexible scheduling at Kullerstrand, 19 district curriculum supervisors met to examine district programs and to identify a program within R-1 which embraced and demonstrated their personal educational philosophies, and thus to determine a direction in which they would like the entire district to move. The personal basis of choice was "the school within the district to which you would most like to send your child." Kullerstrand received the unanimous approval of the supervisors. Following the many criticisms they had previously received from the
supervisors and other central administrators, the principal and staff felt these accolades to be most meaningful.

Word of the innovations accruing at Kullerstrand spread, and soon visitors from across town, from across the state, and from across the country began knocking on the door. These visitors then spread the word further, as did speakers like Dwight Allen, who spoke enthusiastically about the promise of programs like that at Kullerstrand. As mentioned earlier, the Kullerstrand staff was not prepared for the onrush and made some mistakes as a result, but the interest and visibility were thrilling not only as personal accolades but also as motivators in the development of the excitement of Kullerstrand's environment. The visitors provided tangible recognition and thus an added incentive to creativity and innovation.

Exciting as recognition and acceptance were to all involved in the Kullerstrand program, the greatest thrills of success came as the Kullerstrand idea began to be disseminated and put into action in local and national schools.

In the beginning, R-1 district principals looked upon Kullerstrand with suspicion. Although small group instruction was appealing, most did not accept the ideas of students determining their own learning environments, selecting their own teachers, and pursuing their own needs. In addition, many were irritated by the superintendent's insistence that all administrators in the district visit Kullerstrand. It was thus with a great deal of personal satisfaction that the
principal noted that by the end of the third year of flexible modular scheduling at Kullerstrand, when he announced his resignation from R-1, 80% of the R-1 principals requested a full day of the Kullerstrand principal's time to discuss the rationale and implementation of the program.

Ironically, on the national level, dissemination occurred even faster than it did within Jefferson County. Educators who visited Kullerstrand applauded its philosophy, organization, and effect on student behavior. Hastings and Alliance, Nebraska, Temple City, California, and Cloquet, Minnesota immediately (during the 1964-65 academic year) replicated the design for kindergarten through twelfth grade in their respective districts, each using the Kullerstrand staff as a major consultant. Dozens more requested a representative from Kullerstrand to consult with their districts, and teachers accepted these new responsibilities gladly, flying to various cities to help implement new programs. The opportunities afforded the principal and teachers were unique and fulfilling, and all benefited from increased responsibility and professionalism.

D. More Humanistic School Environment

The thrills mentioned above -- the increased efficiency in utilization of facilities, resources and time; the substantial effect on district policy revisions; and the visibility and acceptance achieved by the Kullerstrand program -- were all very real and recalled with great pride by the prin-
cipal, but perhaps the greatest thrills of all resulted from his experiencing a new and far more humanistic school environment, a place where the climate and attitudes were all that he had hoped for the school in which he invested a major portion of his time, energy and care.

He had experienced the rigidity imposed by traditional approaches to the uses of time, personnel, facilities, transportation and curriculum and had known how they stifled responsibility and creativity by not allowing teachers and students the right to determine their own lives. He thus was delighted with the new attitudes displayed by both teachers and students. Because they could make responsible decisions and follow up on them, excuses and alibis began to disappear and enthusiasm and excitement to emerge. Teachers and students alike demonstrated dedication, interest in new challenges, confidence, and independence.

The principal felt especially good about the pride generated by students and teachers and watched with interest and excitement as they accepted and effectively managed ever increasing levels of responsibility for themselves. As each individual demonstrated his responsibility, greater trust and openness developed, and thus more intense and meaningful relationships among students and teachers were encouraged. The honesty, both intellectual and emotional, which resulted provided for deeper, more significant learning. All these attitudinal changes -- from mistrust to trust, from blame to acceptance of responsibility, from apathy to excitement, from fear to anxious anticipation, from concern with administrative
convenience to concern with individual student needs — were slowly and sometimes painfully realized at Kullerstrand, with remarkable effects on both the teachers and the students involved. Teachers, specifically, manifested these behavioral changes:

-- they lessened drastically their "disciplinary" behavior;
-- they smiled more often;
-- they were less disturbed by differences;
-- they treated children respectfully;
-- they treated children as individuals;
-- they demonstrated excitement;
-- they encouraged questioning;
-- they admitted ignorance;
-- they began tapping other staff members for ideas;
-- they shared their successes and failures;
-- they demonstrated a desire for excellence;
-- they worked as a team;
-- they accepted responsibility;
-- they used unscheduled time to work with students;
-- they sought assistance;
-- they became increasingly sensitive to feelings and needs.

Although all of these demonstrated behaviors led the principal to conclude that the staff was happy at Kullerstrand, the final realization of the program's teacher-holding power came when at the end of the three year pilot program no teacher left Kullerstrand to take a job elsewhere,
while many teachers from other districts put their names on a long transfer waiting list.

The climate was exciting and the teachers highly satisfied, but most thrilling of all to the principal was the obvious change in the attitudes and behaviors of the children who attended Kullerstrand Elementary School. In addition to the successes enumerated in Chapter V, the principal was most heartened by the following examples of positive attitudes and behaviors:

-- students were seldom tardy;

-- absenteeism decreased markedly;

-- parents reported that their children were eager to attend school;

-- purposeful behavior became increasingly evident;

-- interpersonal conflicts decreased;

-- independence and interdependence seemed to become the accepted modes of behavior;

-- responsibility was practiced;

-- inattention became almost nonexistent;

-- competition for grades decreased;

-- psychological and behavioral problems were greatly reduced;

-- students reported and demonstrated happiness and eagerness.
REFERENCES

Articles


McIntosh, W.R. "Problems Involved in Grouping in Content Areas and Proposed Solutions," *Conference on Reading*; 1959.

Molner, Donald J. "Machines to Individualize Your Teaching," *Scholastic Teacher*; May 16, 1968.


Books


References: Books (cont'd.)


Holt, John. How Children Fall. Dell Publishing Company, New York:

____________________ How Children Learn. Pitman Publishing Company, New York:


References: Books (cont'd.)


Rosenthal, Robert. Pygmalion in the Classroom. Rinehart and Winston, New York:


APPENDIX A

Examples of
Objectives and Performance Sheets
EXTENDED ACTIVITIES:
The student will select four of the following objectives to complete:

1. Read "The Shy Stegosaurus of Cricket Creek."
2. Read "A Bear Called Paddington."
3. Draw a picture of Brighty.
4. Make a clay figure of Brighty.
5. Write a play with animal characters.
6. Develop a miniature stage setting of one of the scenes from "Brighty."
7. Make puppets of three of the characters you've read about in this unit.
8. Paint a picture illustrating how you visualize the Grand Canyon.

*1 = Beyond Expectations  2 = Met Expectations  3 = Below Expectations
## Penmanship: Objectives and Performance

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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1. Correct body position</td>
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<tr>
<td>a. Sits well back in chair</td>
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<td>b. Keeps back straight</td>
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<td>c. Rests both feet on the floor</td>
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<tr>
<td>2. Correct position of the hand and pencil</td>
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<tr>
<td>a. Hold pencil between thumb and first two fingers</td>
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<tr>
<td>b. Keep the wrist free from the desk to allow the hand to glide</td>
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<td>3. Correct paper position</td>
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<td>a. Paper slants to follow angle of arm</td>
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<td>b. Place left hand at top of paper to hold it in place; left-handed writers hold the paper with the right hand</td>
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<tr>
<td>4. Letter formations</td>
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<td>a. Make letters rest on the line</td>
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<td>b. Make letters slant slightly to right</td>
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<td>c. There is a uniform smoothness of stroke</td>
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<td>5. General Appearance</td>
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<td>a. Observe left and right hand margins</td>
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<td>b. Paper is free from scribbles and excessive erasures</td>
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* 1 = Outstanding; 2 = Very Good; 3 = Good; 4 = Fair
  5 = Unsatisfactory

------------------ Cut along this line ------------------

Language Arts - 4
Penmanship
Teachers: 

Students Name: 

Date: 

Parent's Signature: 

Teacher Expectations

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<tr>
<th></th>
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<tbody>
<tr>
<td>1. Read &quot;Brighty of Grand Canyon&quot;</td>
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<tr>
<td>2. Write an animal adventure which includes some peril and in which the animal is the hero</td>
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<td>3. Write a story beginning &quot;If I were a burro...&quot;</td>
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<tr>
<td>4. Can find at least ___ similes in the story</td>
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<td>5. Can write ___ similes</td>
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<td>6. Can find ___ expressions in the story using hyphenated words</td>
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<td>7. Can rewrite a series of sentences using hyphenated words with ___ accuracy</td>
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<td>8. Can complete an exercise using vocabulary words with ___ accuracy</td>
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<td>9. Can spell with ___ accuracy the spelling words given in this unit</td>
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<tr>
<td>10. Will read and discuss in class ___ assigned poems</td>
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<td>11. Can write an animal poem</td>
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<tr>
<td>12. Can complete with ___ accuracy a series of exercises on word study</td>
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</table>

*1 = Beyond Expectations; 2 = Met Expectations; 3 = Below Expectations

Please sign and return to the teacher to show that you have examined this report on your child's progress in Language Arts.
### Behavioral Objectives

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<tr>
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<tbody>
<tr>
<td>1. The student will be able to find or demonstrate ways in which air is present (Written report proving air is present)</td>
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<td>2. The student will be able to demonstrate with a lighted candle under a jar to determine what caused the candle to go out (Written report on conclusion)</td>
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<td>3. The student was given a problem to find out what effect the size of a glass container has on the length of time a candle flame will burn when placed under the container (Written report on conclusion)</td>
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<td>4. The student was given a problem dealing with changes of air. (A cold soda bottle had a balloon placed over it and the balloon was then heated) (Written report explaining the results)</td>
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<td>5. The student was given a problem to determine the effect of how air behaves with some common things such as: a) prepared steel wool b) rocks c) germinated seed d) burning candle (The student measured, recorded, compared, and wrote a report on the results)</td>
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<td>6. The student was given a problem to determine the effects of air on a) wet steel wool, and b) more than one steel wool (The student recorded, measured, and prepared a written report)</td>
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<td>7. The student was able to determine what caused the water to rise in a tube after a candle goes out (The student observed, recorded, measured, and prepared a written report)</td>
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<td>8. The student was able to determine the effects of a burning candle in steel wool air (The student recorded and prepared a written report on his observations)</td>
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*1 = Above average; 2 = Satisfactory; 3 = Incomplete Is; 4 = Incomplete final; 5 = Unsatisfactory*
9. The student was able to determine what was the effect of a burning candle over a tube covered by a sheet of rubber and with the use of a cap was able to demonstrate the force generated when a confined volume of gas is heated.

10. The student was able to remove the air from a tube inverted in a tray of water by the use of a syringe and determine what happened (Write a report on the results).

11. The student observed three film loops:
   a) the mouse and the candle
   b) candle burning I
   c) candle burning II
   (Write three reports explaining the results)

COMMENTS:

------------------------------------------Detach here------------------------------------------

Please sign and return this portion of the page as acknowledgment of a receipt of your child's evaluation on this unit.

SCIENCE - 6th Grade
Teacher:
Unit: Gases and Airs, Part 1

Parent's Signature

Child's Name

Section
## TEACHER EXPECTATIONS

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<tr>
<td>2.</td>
<td>Write a biography (one page maximum) about E.B. White.</td>
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<tr>
<td>3.</td>
<td>Write three descriptive words for each of the following characters: Charlotte, Templeton, Fern, Wilbur and Avery.</td>
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<td>4.</td>
<td>Imagine you are spending a week with Wilbur. Write a diary of your experience for that week.</td>
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<td>5.</td>
<td>Imagine that you are attending the fair. Write a letter to either your parents or a friend, giving a description of the fair.</td>
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<td>6.</td>
<td>Choose at least five sentences from the story and have each represent a different sense.</td>
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<td>7.</td>
<td>Write a paragraph (5-10 sentences) about Charlotte or Wilbur expressing one of the following moods: loneliness, excitement, suspense or fright.</td>
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<td>8.</td>
<td>Write a paragraph (5-10 sentences) describing the climax of Charlotte's Web.</td>
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<td>9.</td>
<td>Read &quot;The Borrowers&quot; by Mary Norton.</td>
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<td>10.</td>
<td>Can create a home for the Borrowers and furnish it</td>
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<td>11.</td>
<td>Write a descriptive paragraph for each of the following characters: Mrs. Driver, Pod, Arrietty and Homily.</td>
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<td>12.</td>
<td>Can write a fanciful poem of at least three stanzas</td>
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<td>13.</td>
<td>Can spell with 90% accuracy the spelling words accompanying this unit</td>
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<td>14.</td>
<td>Write a definition of what you think fantasy is.</td>
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<td>15.</td>
<td>Can write a fanciful tale which includes one character with magical powers</td>
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<td>16.</td>
<td>Having silently read a fanciful tale, can retell the story to the class without notes by:</td>
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<td></td>
<td>- Keeping events in sequential order</td>
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<td></td>
<td>- Developing a plot</td>
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<td></td>
<td>- Staying on the subject</td>
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<td></td>
<td>- Speaking so all can hear</td>
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<td></td>
<td>- Enunciating without slurring words</td>
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*1 = Exceeded Expectations; 2 = Met Expectations; 3 = Did not Meet Expectations*
LETTERS TO
THE EDITOR

Mod Fan
Dear Editor:
Our son is a student at Patterson Elementary.
For the first time in his school life he is motivated enough to get to school at 8 a.m. whether or not he has a class scheduled at that time. He reads at least a book a week (above his grade level) by his own volition. While not a brilliant student he is excited about and interested in math, science and social studies.

We have appreciated those teachers who have cared enough to begin additional activities such as the photography lab, art appreciation, and other independent groups.

Our son has been reprimanded in the principal’s office and as parents we applaud a supervisor who is fair to students but firm, and also true to his convictions regardless of outside pressure.

We wonder if other parents have given modular scheduling a chance by discussing their child’s problems with the teachers involved or is blind opposition to change an easier course?

Mr. & Mrs. W. P. Larson
Schools Must Innovate

Flexible modular scheduling has ranked second only to sex education as a topic of controversy in the R-1 School District.

The concept has worked well in some schools and apparently not so well in others.

We have been highly impressed with the work of Principal Nick Revielle at Kullerstrand and Patterson Elementary Schools and feel his mod programs have tremendous potential in public education.

It is unfortunate that R-1 will lose Revielle this June to a suburban New York City school district.

Many aspects of the mod system impress us.

1. Classes are limited to 15 students. Everyone says smaller classes are the key to better education.

2. Youngsters, even at the elementary school level, come in contact with a number of teachers and pupils each day, rather than having the standard one-classroom, one-teacher, 30-student setup.

3. Lay personnel can be easily and effectively utilized, thus freeing teachers for more important duties.

4. The current program at Patterson includes differentiated pay for teachers. In other words, teachers are paid on the basis of performance, rather than just on seniority.

We believe public education must find better ways of doing things if it is to provide quality education at a price people can afford.

Switching the burden of financing the schools from property taxes to state sales and income taxes is desirable to a degree, but it really doesn’t solve the long-range problems.

The R-1 District should continue to develop new programs, with two conditions:

1. Parents should be more carefully informed about innovations.

2. The programs should be more thoroughly evaluated by the district.