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Establishing Guidelines for Effective Scheduling of Junior High Schools with Enrollments Between 500-1000

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ESTABLISHING GUIDELINES FOR EFFECTIVE SCHEDULING OF JUNIOR HIGH SCHOOLS WITH ENROLLMENTS BETWEEN 500-1000

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

I. THE PROBLEM

The broad problem. Today educators are in the midst of re-examining the entire school program. They are considering ways in which they might better build school programs to prepare students to the full extent of their capabilities, and to the extent of our knowledge. Consequently, a new goal is beginning to emerge; it refers not to amount and numbers (everyone in school for a given number of years), a quantitative standard of the past, but rather to a quality of excellence to be achieved in the education provided for each and every student in the secondary school (4:347). The new goal is this:

> All youth shall by the end of compulsory schooling be so launched in a broad, liberal education--with no significant gaps--that they will continue it as a lifelong pursuit; further, each person's education will have been so planned that he will have opportunity and be encouraged to develop, as early as his unfolding talents are discovered, one or more lines of specialization which will represent the flowering of his own unique interests and abilities (4:347).

The junior high school plays an especially important part in the development of this goal. Many administrators already view the junior high school as not just preparation for the requirements of the senior high school and college,

but also, to develop a program that meets the needs of the early adolescent. However, it has been felt by many that departmentalization and the traditional scheduling of the junior high school is in direct opposition to these desired results (13:76).

A more limited problem. One of the keys to a higher quality of education in the future lies in the development of a different conceptual basis for the scheduling of classes. The conventional schedule remains, by and large, immobile and unbending. Improvements in the instructional program have been forced to conform, or to be distorted as necessary, to fit traditional schedule patterns (5:92). A perfect daily schedule of classes would make it possible for every student to have exactly the program that he, his parents, and the school think he should have (33:1252).

Purposes of the study. The purposes of this study were to (1) establish criteria for the formation of a desirable junior high school schedule; (2) ascertain advantages, disadvantages and illustrate scheduling practices presently employed or conceptualized; (3) identify present scheduling procedures in the junior high schools of Washington and determine attitudes about various techniques; (4) prescribe guidelines for effective scheduling

practice in junior high schools with enrollments from 500-1000.

Collection and treatment of data. The collection and treatment of the data corresponding to the purposes of the study were accomplished through (1) library research culminating in a summarization of what available authorities in the field recognize as being necessary requirements in the formation of a successful schedule; (2) library research and communication with selected schools to illustrate present techniques and ascertain advantages and disadvantages of these techniques; (3) a questionnaire study to all junior high school principals in the state of Washington in schools with enrollments between 500-1000 and based on a 6-3-3 organizational pattern to identify present scheduling procedures and their attitudes toward these procedures; (4) transmitting the above research into guidelines for effective scheduling practices in junior high schools with enrollments between 500-1000.

Importance of the study. One of the most important aspects of the principal's work in the junior high school is the formation of the daily schedule. The schedule must not only be efficient and workable, but its prime importance is to take care of the needs of each individual that it plans to serve (37:48). "The principal is the one who is

responsible for seeing to it that the philosophy of the school finds expression in the schedule" (45:104).

The task of preparing a schedule which provides for the individual needs of junior high school youngsters presents an unusual challenge to the school administrator. However, the gains derived and the successes achieved are more than worth the effort (40:12).

The daily and weekly schedule of a school reflects the philosophy of its educational program and the administrative competence of its principal.

> If the schedule is inflexible, stereotyped, and packaged in old containers, it is generally symptomatic of a static and routine educational program. If it is carelessly drafted and generates confusion, it usually reflects an inept or inexperienced administrator. Conversely, if the schedule shows modern offerings, makes provisions for student differences, provides flexible time blocks, and functions smoothly, the chances are good that it expresses a well-designed educational program and a competent administrator (7:151).

In recent years many educators have felt that the schedule pattern in junior high schools should be challenged. They feel that the inertia of traditional scheduling is holding back educational advance. "Too often proposed instructional modifications meet the response, 'it won't fit into the schedule,' and the issue dies without receiving a trial" (5:92).

Considering the significance of the schedule and the criticisms directed toward it, a knowledge of good scheduling

techniques is of prime importance. This knowledge should shed light on the validity of criticisms to the traditional scheduling techniques and will provide a basis for change, if change is needed.

Limitations of the study. Research on the problem will be limited by the following factors: (1) only those scheduling techniques that are explained in available books, pamphlets, journals, periodicals, and questionnaire for the state of Washington can be analyzed, as a nationwide survey would be impractical in terms of time and cost; (2) a questionnaire requiring subjective information from junior high school principals will be used; (3) the conclusions will be drawn solely by this researcher based on the accumulated material.

Assumptions. Assumptions applicable to this study are (1) Because the junior high school principal is responsible for the scheduling procedure of his school, he is the logical person to complete the questionnaire; (2) The principals receiving the questionnaire are capable and willing to formulate and express their opinions; (3) The principals will be forthright in most of their answers; (4) Guidelines for effective scheduling practice in junior high schools can be determined through an analysis and survey of scheduling techniques presently conceptualized and/or in operation.

II. DEFINITIONS OF TERMS USED

Conventional schedule. Characterized by six periods of fixed length with classes meeting at the same hour each day.

Flexible schedule. Introducing a degree of flexibility from the conventional schedule by means of variations in length of periods, hours, days of class session, number of periods, activity periods, and so on.

Block-of-time. A long period, usually two or more "regular" periods in length. The long periods are usually designed for core offerings.

Locked period. Occurs at the same time each day it is scheduled.

Floating period. Moves about or occurs at a different time in the schedule from day to day.

Dropped period. The absence on a given day of that period which is usually scheduled.

Module. Smallest amount of time desired for any instructional purpose.

III. ORGANIZATION OF REMAINDER OF THE STUDY

Chapter II presents a resume of the literature on the historical development of scheduling in junior high schools and some recent research in the area. Chapter III is devoted to establishing criteria for scheduling practices in junior high schools. Chapter IV illustrates different scheduling practices with a discussion of the advantages and disadvantages of each. Chapter V reveals the results of the questionnaire that was distributed to one hundred and six junior high school principals in the state of Washington. Chapter VI summarizes briefly the main points of the paper and states the conclusions derived from the data obtained; especially conclusions reached as to guidelines for desirable scheduling procedure in junior high schools.

CHAPTER II

REVIEW OF THE LITERATURE

Very little has been written about the historical development of scheduling practices in the junior high school. This is true primarily because of the relatively little change that has taken place since the inception of the junior high school.

I. HISTORICAL DEVELOPMENT

At the beginning of the twentieth century the typical school system of the United States comprised an elementary period of eight years and a high school period of four years; today, the prevailing system embraces an elementary period of six years and a secondary school period of six years, which is broken into two distinct units of three years each.

Not only has the six-three-three grouping of grades, urged by the pioneers of the movement, been accepted, but twenty-five years of trial under all possible conditions has confirmed, as well, the soundness of the philosophy that lay back of the early attempts to bring about a resegmentation of the parts of an irrational and wasteful system (14:iii).

The real beginning of the six-three-three plan of organization has its seed in the "Reorganization of the Schools of Berkeley--A Plan," a draft that was presented to the Berkeley Board of Education in 1909 by Frank F. Bunker, then Superintendent of Schools. The plan called for three groups of schools; one group (The High School Proper) to comprise the tenth, eleventh, and twelfth years only; the second group, called the Introductory High School group, to comprise the seventh, eighth, and ninth years only; and a third group of schools (the Elementary Schools Proper), to comprise all children of the first six years. This plan was adopted by the Board and put into effect in the fall of 1910 (14:56).

Much discussion and ground clearing had preceded the adoption of the plan set in motion by the Berkeley School District. Approximately twenty years of discussion had gone on with varying ideas on the reorganization of the American public school system.

The 1892-93 National Education Association Committee of Ten reported that:

> Every subject which is taught at all in a secondary school should be taught in the same way and to the same extent to every pupil so long as he pursues it, no matter what the destination of the pupil may be (24:17).

The report further stated that education for life and preparation for college are synonymous (24:17). In 1909 the

introduction of the Carnegie Unit helped implement the basic idea and recommendations of the Committee of Ten.

The secondary schools had little choice but to conform to the Carnegie Unit because colleges established the Unit as a basis for entrance. High school class periods ranging from forty to fifty-five minutes in length and scheduled four to five times weekly were almost universal after 1910. "Double periods" were set up for laboratory and vocational courses. This accord with the Carnegie Unit was reinforced by the Smith-Hughes Act of 1917. Some devotees of the core idea adopted double periods, some schools gave large blocks of time to facilitate work experience programs and distributive education after the George-Dean Act of 1936, and some schools designed five period days (14:4). However, most of these practices at the secondary school level have been restricted by the implication of the Carnegie Unit.

The simultaneous development of the six-three-three plan of organization for public schools and the Carnegie Unit heavily influenced the scheduling practice of the junior high schools. Although the reorganization to six-three-three was educationally sound, it did have some questionable consequences (13:16).

One of the major losses to grades seven and eight when they became part of the departmentalized junior high

school was the flexibility of the time schedule.

> The effective elementary teacher, in a self-contained classroom, was able to deviate from her schedule with little difficulty. An elementary school teacher involved in a social studies discussion that had reached the state of a real learning situation did not have to stop at the end of a given time to start an English lesson. Instead, she could extend her discussion into the English period and compensate for the time on another day. This is not true on a departmentalized organization of the junior high school. The teacher reaches a crucial point in a discussion and the bell rings. The discussion must stop because the pupils are scheduled to be in another room with a different teacher (13:83).

Many educators now realize that present scheduling practices inhibit students from caring deeply about anything in the curriculum. Consequently, recent developments are fostering more flexible scheduling of students and teachers. Dissatisfaction with the Carnegie Unit as a measure of learning outcomes is increasing. Administrators of larger schools are considering ways of organizing them into smaller ones and otherwise bringing more personal relationships to students. Studies of staff utilization suggest the need for changes in grouping and time allotments. Recognition of individual differences opposes uniformity, and electronic devices make it easier to change scheduling practices (63:94).

II. RESEARCH ON CONVENTIONAL AND CLOSELY RELATED SUBJECTS

Unfortunately, most of the research that has taken place

with regard to scheduling procedures on the secondary level has dealt with the high school. Very little actual research has been completed concerning the junior high school schedule. Consequently, the author has included studies that have taken place at the high school level but which the author feels has significance for the junior high school.

Various studies indicate that from ninety to ninety-five per cent of the four year and senior high schools in the United States employ the conventional schedule or a slight modification of it, usually an additional period or two. Sturges reports that in 1958-59, 92 per cent of 938 North Central Association high schools operated with a conventional schedule or simple modification, 41 per cent with a six-period schedule, 29.5 per cent with a seven-period schedule, and 21.7 per cent with an eight-period schedule. The percentage of small schools (enrollments of 249 and under) operating with an eight-period schedule was 31.9 per cent, as compared to 18.1 per cent for schools with enrollments over 249 (60:45). On the other hand, Mackenzie reported that 70.8 per cent of the schools that he studied in the Northwest Association used a conventional schedule (39:7).

Length of periods. Research on relative achievement in long and short periods shows no significant differences.

Sparks made a study comparing factors in twenty Iowa high schools in which students made the greatest growth in mathematics with twenty schools in which students made the least growth in mathematics from grades nine to twelve. Advance in achievement was measured by the test on Quantitative Thinking in the battery of the Iowa Tests of Educational Development. The twenty high- and twenty low-achievement schools were paired for general academic ability by means of the composite scores of the ITED. Sparks found that the median length of class periods in the high-achievement schools was fifty-four minutes as compared to forty-seven minutes in the low schools. However, the differences were not statistically significant (57:12).

Mowrer found no significant differences in achievement in English for students graduated from schools with periods of fifty minutes or more and students from schools using periods of less than fifty minutes (43:1253).

McElhinney studied the relationship between length of class periods and progress in academic achievement of secondary school pupils during 1959-60. He investigated eleven schools which used both long and short periods for the same courses in English, science, mathematics, and social studies, comparing educational growth in sixty-six pairs of classes for the same courses. He concluded that, "Although the test results favored the long period in a

majority of the comparisons, none of the differences was significant at the five per cent level of confidence" (42:1253).

Nevertheless, teachers tend to favor long periods. Sturges found that teachers in schools with long periods (fifty-five to fifty-nine minutes) rated the length of class periods and the length of the school day as more satisfactory than did teachers in schools with short periods (forty to forty-five minutes). Forty-five per cent of the teachers in the schools with an eight-period day said the classes were too short (60:49). McElhinney also found that teachers preferred long periods to short ones (42:1253).

Anderson and Van Dyke conclude that the evidence and arguments tend to favor a schedule with six or seven long periods of fifty-five minutes or more over one with eight or nine short periods of forty-five minutes or less. Any advantages for short periods in terms of reduced costs appear to be more than offset by more reasonable teaching loads and teacher satisfaction with long periods. Since the evidence available indicates no significant differences in student achievement, they believe that teacher preferences should prevail (7:156).

Conant prefers a seven-period day with the length of the period being fifty minutes. He concludes that with a

seven-period day, or thirty-five period week, thirty periods can be devoted to the required subjects, including activities, and the five extra periods can be used to meet individual needs and interest in foreign languages or any required subject in which additional work is advisable (19:24).

In an extensive study of the junior high school, Douglass found a trend toward longer and fewer periods with fewer study halls (22:104).

Length of school day. Little research has been done in this area. In the Midwest, the modal length is about seven clock hours including lunch time (60:50). Many states have minimum requirements as to the length of the school day. The North Central Association requires member schools to provide a school day of at least six hours exclusive of lunch periods (7:157).

The Commission on Secondary Curriculum, a department of the National Education Association, in 1961 suggested that the quality of learning in almost all areas of the curriculum could be improved if the time allotments could be made more flexible. More adjustments in time allotments would be possible, they believe, if the school day were lengthened (29:21).

Conant feels that seven hours is not an excessive amount of time for the length of the school day in most

communities. He concludes that at present, "some school days are entirely too short" (19:25).

Activity periods. A United States Office of Education survey shows that 66 per cent of 10,925 secondary schools reporting scheduled an activity period within the school day. The length was 275 or more minutes per week in 8.2 per cent of the schools, 175 to 274 minutes in 19.3 per cent, 75 to 174 minutes in 18.9 per cent, and less than 75 minutes in 19.5 per cent (64:4). Sturges found no clear-cut pattern with respect to the time of day for this period, but more schools placed it immediately after the lunch hour than at any other time (60:45).

Schools with enrollments of 249 and under, and with a high percentage of students transported on buses, generally scheduled the activity period late in the school day. Seventy-one per cent of these schools included football and basketball practice during the school day, but during a physical education period rather than during the activity period. In contrast, 70 per cent of the schools enrolling 250 or more students scheduled these practices outside of the school day and made special arrangements for transportation of rural participants (64:8).

Music had a regular period within the school day in 91.5 per cent of the schools that Sturges studied and before school in the morning in 8.5 per cent. The activities most

frequently scheduled during the activity period were student council, newspaper staff, yearbook staff, clubs, and assemblies (60:45).

Anderson and Van Dyke feel that athletic practices should be scheduled outside of the regular school day, and the activity period should be reserved for assemblies, clubs, council meetings, publications staff meetings, and certain speech and music activities (7:159).

Teacher load. One authority lists the following as criteria of success in schedule-making: each teacher is assigned subjects he feels qualified to teach and in a small number of different subject fields; each teacher has classes as small as the school can provide and a teaching load equal to that of other teachers; and each class meets in a suitable room of sufficient size and with proper equipment (33:1252-3). That these conditions do not always exist is demonstrated in a study by Romine which showed that only 53 per cent of the teachers are assigned to one field, 33 per cent to two fields, and 14 per cent to more than two fields (52:552).

Course offerings. Douglass noted a slight trend toward offering less general science, most commonly only two years in the junior high school. General mathematics was offered in 85 per cent of the schools. There was also

a tendency to offer a side variety of instruction in arts and crafts. Typing and general business were both disappearing from the junior high school. In over 90 per cent of the schools studied, teachers were given a great deal of freedom to change the course of study; cooperative procedures seemed to be replacing authoritarian administration (22:106).

III. RECENT DEVELOPMENTS WITH VARIABLE SCHEDULES

Members of the National Association of Secondary-School Principals in 1956 established the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. This commission has presented plans to provide more flexibility in the scheduling of classes. They have conducted experiments in nearly one hundred junior and senior high schools. Although these plans do not offer a complete solution to the problem they do provide possibilities to improve the situation.

The variable types of schedules represent efforts to introduce flexibility through functional changes in time provisions. This flexibility is designed to take into account the individuality of the pupil, the differences in subjects, and the talents and training of teachers (4:349).

The possibility of developing a flexible junior high school schedule is coming closer to reality with the experi-

ments of electronic data processing procedures and giant, high-speed computers.

Obviously there is a need to provide a change in length and number of class periods in the junior high school. This must be done to provide the desired flexible program. Steps are being taken in Florida to accomplish this end. How long it will take to assimilate this flexible program into other schools remains to be seen. "However, as long as progress takes place in an orderly and proper manner, we shall always be proud of the results" (32:13).

Many secondary schools in Oregon have had seven- or eight-period days long before Dr. Conant made his recommendations. However, for the most part, these have not been variable periods and, therefore, have meant only that students take more subjects or are provided more study time during the normal school day. This procedure is open to discussion, for the consensus of principals in Oregon seems to be not how to make a longer school day, nor how to make a longer school year, but how to make variable periods within the confines of the school day which we are now assigned (32:17).

The questioning of the conventional schedule, and the current experiments with shorter periods, longer periods, and variable periods, are healthy signs.

"Certainly no principal can remain comfortable without questioning whether his school's schedule is the servant or the master of the instructional program" (32:17).

Block-of-time. Douglass found a core program in some form or another in 60 per cent of the schools; the most common program combined English and social studies and appeared in 40 per cent of these schools (22:104).

Tompkins discovered in a nation-wide study of junior high schools that a majority of schools have some block-time classes in their daily schedule. Percentage-wise, 57.3 per cent of 1,170 responding schools have block-time classes, while 42.7 per cent employ single-period classes for general education. In junior high schools over 1,000 enrollment, the percentage using block-time classes is 72.5. This study shows that the number and percentage of junior high schools using block-time classes has increased greatly since 1950 (61:177). Among the leaders of responding schools using some block-time classes was Washington with forty-one of forty-six schools (61:217).

Tompkins concludes that as time goes on, fewer and fewer junior high schools will retain the single period practice for all general education classes. Although the name used by schools to designate block-time classes varies, (core, common learnings, unified periods or studies,

general education, are frequently used) sometimes the combination of subjects is made without any specific name. The most popular subject-combinations for block-time classes are, in order, (1) English (or language arts) and social studies, (2) mathematics and science, and (3) social studies and science (61:178).

"Schedule modification should never be undertaken unless the demands of the instructional program warrant change. This need not be an all-or-nothing proposition. Varying degrees of modification are possible. Schedule modification should be considered a part of curriculum improvement" (5:92).

CHAPTER III

CRITERIA FOR EFFECTIVE SCHEDULING

In considering the criteria for effective scheduling in junior high schools it is necessary to first take a look at the junior high school in light of its unique functions in the established educational system of the United States. The author has attempted to find a list of functions which are in close accord with a majority of the authors in the junior high field. Gruhn and Douglass (39:32) have prepared a list which is often quoted in other similar textbooks dealing with the curriculum and administration of the junior high school. The author submits the following functions, then, as consistent with most thinking in the junior high area.

Function I: Integration

To provide learning experiences in which pupils may use the skills, attitudes, interests, ideals, and understandings previously acquired in such a way that these will become coordinated and integrated into effective and wholesome pupil behavior.

To provide for all students a broad, general and common education in the basic knowledge and skills which will lead to wholesome, well-integrated behavior, attitudes, interests, ideals, and understandings.

Function II: Exploration

To lead pupils to discover and explore their specialized interests, aptitudes, and abilities as a basis for decisions regarding educational opportunities.

To lead pupils to discover and explore their specialized interests, aptitudes, and abilities as a basis for present and future vocational decisions.

To stimulate pupils and provide opportunities for them to develop a continually widening range of cultural, social, civic, avocational, and recreational interests.

Function III: Guidance

To assist pupils to make intelligent decisions regarding educational activities and opportunities and to prepare them to make future educational decisions.

To assist pupils to make intelligent decisions regarding present vocational opportunities and to prepare them to make future vocational decisions.

To assist pupils to make satisfactory mental, emotional, and social adjustments in their growth toward wholesome, well-adjusted personalities.

To stimulate and prepare pupils to participate as effectively as possible in learning activities so that they may reach the maximum development of their personal powers and qualities.

Function IV: Differentiation

To provide differentiated educational facilities and opportunities suited to the varying backgrounds, interests, aptitudes, abilities, personalities, and needs of pupils, in order that each pupil may realize most economically and completely the ultimate aims of education.

Function V: Socialization

To provide increasingly for learning experiences designed to prepare pupils for effective and satisfying participation in the present complex social order.

To provide increasingly for learning experiences designed to prepare pupils to adjust themselves and contribute to future developments and changes in that social order.

Function VI: Articulation

To provide a gradual transition from preadolescent education to an educational program suited to the needs and interests of adolescent boys and girls.

A necessary criteria for the establishment of a schedule must take into consideration these functions of the junior high school. Faunce and Clute (25:16) have summarized Gruhn and Douglass's functions into three major ones which are more easily remembered.

Function No. 1:

To attack the common problems faced by young adolescents in our society, employing and improving command of basic skills and knowledge from many sources for this purpose.

Function No. 2:

To enrich and differentiate learning by exploration of vocational and other individual interests.

Function No. 3:

To assist the early adolescent to make a satisfactory personal-social adjustment.

The preparation of a schedule requires the accumulation of much necessary data. No matter what type of schedule any school offers, certain data will be required before the schedule can be developed. Such things as the number of students, number of staff, available physical facilities, courses to be offered, and so on are routine required knowledge. Austin and Gividen (8:148-9) have gone beyond the routine collection of this data and have

established some general principles which should apply to the routine collection and analysis of information.

1. Clear understanding of the business of scheduling is a reasonable right of all who are to be thereby affected.

2. The over-all structure of the curriculum as well as the guiding purposes of the school must be clearly understood and honestly accepted by a significant majority of the staff.

These two principles are derived from the general administrative principle of democratic involvement by the staff as advocated in most recent administration textbooks.

3. Constant reappraisal of method and results is fundamental to continued successful scheduling.

4. Data-gathering need not be a seasonal affair.

5. The custodial staff, the cafeteria crew, and the office help are part of the school.

Outside of being consistent with the unique function of the junior high school and following routine practices in the gathering of information from which the master schedule is built, other criteria must be established in formulating a desirable schedule.

How much experimentation has gone into the scheduling procedure under scrutiny? On paper the plans being proposed appear to have certain advantages and disadvantages. It is entirely possible that some of these disadvantages would not exist in practice, and on the other hand, the anticipated advantages might not be forthcoming. Experimentation is the only empirical test (58:119).

Because the school board is responsible for reflecting the community to the school, the administrator should not submit a schedule plan to the board that inhibits the curriculum from reflecting the community values (58:119).

Another consideration is that any scheduling proposal submitted must not only have unquestioned educational potential, but must also be feasible in terms of personnel --both professional and student, equipment and facilities (58:120).

The primary purpose of the schedule is to allow the individual student to learn better. According to Trump (62:338), this includes the furthering development of his

> ...mind and body, to make maximum use of his talents, to increase personal responsibilities for his own learning, to develop his creativity and inquiry, and to improve his effectiveness in thinking critically, in solving problems, and in working with other people also trying to develop their talents.

Considerations need to be made, then, that will not inhibit this desired goal. Some factors that seem to act as "inhibitors" are "too much group activity, terminableness and compactness" (62:338). Students, too, seldom have the experience of planned independent study in places designed for that purpose (62:338).

Also, the terminableness of today's schools acts as an inhibitor. A student completes a course during a specified year, passes the examination, and then, in effect,

is allowed to forget it. Very little continuity is allowed to exist. Further, the compactness of the school day fails to take individual differences among students and teachers into account (62:1339).

Motivation is the key element of the school's program for treating students as individuals. The individual student works closer to his capacity when in contact with teaching that stimulates him to his best efforts. Also, when he works on projects that seem important to him personally. He is further stimulated by discussions among students of like interests and talents (62:1340).

Thus, the school that is to schedule students for better individual learning recognizes individual motivation as a basic feature of its program. This is accomplished by providing for flexibility and by scheduling students with the best teachers available. It assembles large groups to save time and energy. Schedules of this type allow for individual study in appropriate places. It provides for small discussion groups limited in size to fifteen or fewer students for motivational discussions.

Dwight Allen (4:350-353) has formulated seven assumptions upon which the educational values of a more flexible approach to scheduling can be based.

1. High school is the period of scheduling typically included in grades 7-12.

2. All students should have continuous, rigorous study in breadth and depth, in all basic subject matter fields throughout the six secondary school grades. These are:

   a. arts (visual, performing, practical)
   b. languages (English and foreign)
   c. mathematics
   d. natural sciences
   e. physical education and health
   f. social sciences
   g. guidance

3. In each subject area several groups of students can be identified whose needs are sufficiently distinct to require a discrete program of studies.

4. Each student when properly taught will include four basic types of instruction:

   a. large group
   b. small group
   c. independent study
   d. laboratory facilities

5. Adequate instruction in each subject matter field requires senior teachers who are both well trained in their subject matter field and highly skilled in teaching, who are assisted by less highly trained members of the instructional and supporting staff.

6. Class size, length of class meeting, number and spacing of classes ought to vary according to the nature of the subject, the type of instruction, and the level of ability and interest of the pupil.

7. It will be possible to obtain the necessary mechanical assistance through the use of data processing equipment to implement a large degree of flexible scheduling.

Throughout this discussion of criteria in establishing a schedule the importance of how the staff is utilized continues to be stated and implied. It would seem that each school must establish its own rationale for staff

utilization. It probably would develop along the following lines. The basic aim is to improve instruction. This can be brought about through the improvement of teachers, or, more appropriately, through providing the setting in which teachers can grow professionally and make the best use of their talents. To do this requires continuous analysis of the teaching function by all who are involved. Then organization for the optimal utilization of staff must be designed (38:368). The importance of the teacher and his continuous growth in any scheduling pattern is necessary, but the schedule should be designed for consistency by providing the teacher the opportunity to grow. This does not eliminate the need for supervision but compliments its purposes.

A special note is needed to emphasize the need for the schedule to include exploratory activities in the junior high school. The junior high school program provides the last opportunity for students to obtain the breadth of experience which is important in the lives of young people. The highly departmentalized and often largely selective program in the senior high school does not lend itself to the variety of experiences which all youth should have in developing an understanding of themselves and of society. The junior high school is failing in its function if students go through the three-year

program without planned experiences in such subjects as art, music, homemaking, science, manual arts, etc. These are essential to the daily living of everyone, and the junior high school has the unique function of providing these varied experiences. If exploratory experiences are elective, it is possible for students to specialize and neglect the breadth and background which are important. (56:18). This exploratory function should also be applied to the activities program. It is too difficult to require each student to participate in all offered activities, but this should not keep the school from offering both time and variety in the nature of its activity program.

One further area of the junior high school that needs special attention is its ability to provide for transition from the self-contained classroom of the elementary school to the highly departmentalized program of the senior high school (13:16). This implies the need for a block-of-time program which most authors feel is needed in the junior high school. Brimm (13:17) states, however, that

> complete departmentalization starting at the seventh grade may be justifiable if the staff is not properly trained to handle work in more than one field. The block-of-time approach has a very sound guidance basis but this must be weighed against the depth of meaningful instruction in any particular school.

The requirements of many colleges with programs such as the major-minor-minor and three minor program

requiring students to complete work in more than one subject area somewhat lessens this problem, however.

The following criteria extracted from a variety of sources and previously discussed need to be considered and weighed when developing a junior high school schedule.

Does the schedule:

1. Take into account a sensitive, objective, and highly personalized diagnosis of each student's needs? (4:349)

2. Strike a balance between curricular requirements, exploratory activities, and electives? (4:349)

3. Guarantee that no significant gaps will occur in the education of any pupil? (4:347)

4. Take into consideration the differences inherent in subjects? (4:349)

5. Have available the devices required in formulating each pupil's schedule? (4:353)

6. Provide arrangements for large-group instruction? (40:12)

7. Provide arrangements for small-group instruction? (40:12)

8. Consider purposes first? (Questions of method or technique cannot be answered unless the purposes at which they are aimed are answered first!) (9:370)

9. Take into consideration the maximum offerings of the school plant? (37:49)

10. Provide for consultation with teachers, counselors, and parents for the scheduling of individuals to best meet their needs? (37:49)

11. Provide for a homeroom that is not only an administrative implement but also where students may discuss those problems that are of paramount interest to them individually and as a group? (37:49)

12. Provide for educational, emotional, and vocational guidance of the pupils? (36:537)

13. Provide for exploration into many fields so that the individual will be able to make a wiser choice in selection of senior high school courses? (36:538)

14. Provide each student with an adequate opportunity for physical and health education? (53:4)

15. Provide for a transition from the self-contained classroom of the elementary school to the highly departmentalized program of the senior high school? (13:16)

Anderson and Van Dyke, in their recent book Secondary School Administration (7:167), have outlined important criteria regarding the basis for sectioning students, lengths of periods for various types of classes, assignment of teachers to courses for which they are best qualified, and optimum teacher loads which should be dealt with by the principal in establishing the school's schedule. They suggest that the schedule should:

1. Be sufficiently clear and complete to assist materially in the effective operation of the daily program on opening day.

2. Function with a minimum of confusion and change from the first days of the school year.

3. Contain no conflicts between courses for all but a very small percentage of students. It may be necessary for a few students (1 or 2 per cent)

to change one of their electives in order to resolve a conflict. Such changes should be made prior to the opening day.

4. Provide for good balance in the distribution of class sections throughout the school day.

5. Assign teachers to courses for which they are qualified and, insofar as possible, those for which they have a preference.

6. Provide good balance in section size and in the number of students and class sections assigned to teachers.

7. Provide at least one open period for planning and conferences for each teacher.

8. Meet all niminum standards for time allocations as designated by the state department of education and other accrediting agencies.

9. Serve the characteristics and preferences of the community with respect to time limits for the school day.

10. Provide for some degree of flexibility in the length of certain periods, meeting times for certain sections, and programming of various activities within the school day.

11. Make provisions for ability groups, seminars, remedial sections, and other programs to allow for differences in ability.

An additional factor needs consideration in scheduling. A presently established school must change its schedule if it decides that the above criteria can better be met through another technique. The newly conceived school has only to decide what schedule will best fit the criteria and put it into operation. Thus, consideration must be given not only to the criteria of a successful schedult, but also to the possibility of changing a schedule.

Many different reasons have inspired administrators to modify their schedules; however, the only compelling reason that should cause an administrator to leave the relative comfort of a well-established schedule is his conviction that modification of the schedule will increase the effectiveness and efficiency of the learning situation. (61:344). The schedule is only one of many tools in the administrator's hand that will enable him to provide a better instructional program. This needs to be his over-riding consideration.

Factors that need to be considered when changing from one scheduling procedure to another include:

1. Awareness of the natural fears of teachers. Many teachers fear their own inadequacy, real or imagined, more than anything else. The responsibility of an administrator is to make teachers comfortable with constructive change. (38:368)

2. Also, some teachers will be concerned about new ideas which they suppose will cause a diminishing of opportunities to be educationally creative. (38:368)

3. A continuing understanding of the learning process. Procedures will not be discarded and changed until there is a rise in the level of sophistication and knowledge about how learning occurs. (38:369)

4. Having the commitment and involvement of as many persons as possible. Sharing in the planning and implementing of change should encompass all interested personnel. (38:370)

5. Realistic concept of expectations. Change by itself will not solve all problems. (38:370)

6. The amount of change will depend on the commitment of the school principal and his staff (38:370)

7. The study of as many situations as possible but finally adopting a specific plan that will fit the needs of the local school. Every school should be unique and not a copy of some other program. (38:370)

8. Change should not be undertaken for the sake of change itself. (9:380)

9. Any change that is contemplated should be approached only with full provision for evaluation. (9:380)

The foregoing criteria could be applied to junior high schools in any section of the United States. Because the primary concern of this paper is with the state of Washington, it is desirable to include data that is pertinent to the thinking of Washington state educators.

The Junior High School Study Committee appointed by the State Board of Education in 1959 reached some conclusions regarding junior high schools in Washington. They established the following goals (53:1-2):

All junior high school youth need:

1. to learn the fundamental skills necessary to observe, listen, compute, read, speak, and write with purpose and appreciation.

2. to develop and maintain abundant physical and mental health.

3. to develop an understanding of the democratic way of life and the benefits derived through individual freedoms.

4. educational experiences which contribute to personality and character development; they need to develop respect for other persons and their rights and to grow in ethical insight.

5. appropriate experiences and understandings as foundations for successful home and family life.

6. to learn about natural and physical environment and its effect on life, and to have opportunities for using the scientific approach to the solution of problems.

7. to be participating citizens of their schools and their community with increasing orientation to adult citizenship.

8. to develop a sense of values toward material things and rights of ownership.

9. to explore their own interests and aptitudes and to have experiences basic to occupational proficiency.

10. to have a variety of socially acceptable and personally satisfying leisure-time activities which contribute either to their personal growth or their development in wholesome group relationships, or to both.

11. the enriched living which comes from appreciation of and expression in the arts and from experiencing the beauty and wonder of the world around them.

12. to develop respect for adults and their parents without undue dependence upon them.

Regarding the organization of junior high schools the Committee preferred housing seventh, eighth, and ninth grade students together in a building separate from all other grades. They preferred an enrollment between six hundred and eight hundred students. The Committee (53:3) recommended that:

> The administration should consist of a full-time principal, a vice-principal, and a full-time secretary, with additional clerical help provided when the enrollment exceeds six hundred.

They recommended a program of studies that includes, as a minimum, experiences in the following areas: language arts, social studies, mathematics, science, health and physical education, industrial arts, homemaking, music, art, and foreign languages. The Committee (53:3) also recommends that:

> Opportunities should be provided to determine a student's skills, interests, aptitudes, and abilities. All learning experiences should contribute opportunities for exploration.

The Committee also felt that there are potential values in having students assigned to one teacher for more than one period in a school day. The block-of-time under the guidance of one teacher for two or more consecutive periods should include at least a part of the area of common learnings in grades seven, eight, and nine, such as communication arts and social studies, mathematics and science, or other suitable combinations.

> All junior high school students in grade seven should be scheduled with the same teacher for a minimum of three periods a day; students in grade eight should be scheduled for either two or three periods a day; and where possible, students in grade nine should be scheduled for two consecutive periods (53:3).

They feel study halls should be discouraged in the junior high schedule. However, they emphasize that time

should be provided for supervised study by teachers as needed in their classes (53:4).

In order that a school may receive state aid, it is stated that the junior high school day shall be between six and one-half and seven hours, including the lunch period. Also, the length of basic subject periods shall be not less than forty-five minutes (53:6). However, this regulation is not observed by some schools and is not enforced in any case.

CHAPTER IV

DISCUSSION AND ILLUSTRATION OF VARIOUS SCHEDULING PRACTICES

As previously discussed, the conventional schedule has been the standard schedule for most schools in the past years. However, with the desire of educators to meet individual needs among both students and teachers, the schedule has been one of the tools undergoing experimentation. This chapter is devoted to analyzing possible ways of accomplishing the desire for more flexibility in scheduling procedures.

I. SIX-PERIOD DAY

The six-period day (see Appendix B, Chart A) with a standard 50-55 minute locked period with each student meeting each of his classes every day, seems to contain the following advantages and disadvantages.

Advantages.

1. Longer class periods that can incorporate supervised study.
2. Fewer study halls.
3. Fewer classes taught per day per teacher.
4. Fewer study halls supervised by teachers per day.
5. Fewer students taught per week. (60:50)

Disadvantages.

1. Lacks flexibility (7:161).
2. Does not permit adequate coordination of the efforts of teachers (7:161).
3. Greatly hampers attempts to make guidance and instruction integral parts of the total learning activity (7:161).
4. Does not reflect the aims or philosophy of the school attempting to develop a program of evaluation that promotes integration (7:161).
5. Difficult to add courses or offer a sufficient variety of courses (60:50).
6. Too rigid to allow for a full program, particularly in the case of the academically talented student (51:19).

Some criticisms directed at the conventional schedule seems to be pertinent to the schedule, while others are such that they could probably not be met by any type of administrative pattern. These stem from the limited financial and personnel resources of many schools rather than from the schedule. For example, providing time for teachers' conferences and cooperative planning is not a function of the type of schedule, but is rather a result of financial resources and administrative policy. On the other hand, the rigid time allocations for all courses, regardless of their nature, are a function of the schedule and can be corrected by modifications in its structure (7:161).

There is undoubtedly a limit to the amount of educational theory that can be built into administrative structure,

but in the case of the schedule, some modifications have been developed that appear to be more compatible with contemporary educational theory than the characteristics of conventional schedules. As previously noted, the variable types of schedules represent efforts to introduce flexibility through functional changes in time provisions (7:161).

The following schedules represent the ideas of author-educators and school administrators to attain increased flexibility "to make better use of professional competencies of teachers and to provide improved learning experiences for students" (63:94).

Some modifications toward increased flexibility can be accomplished without the addition of more periods. One such modification is the "even period exchange" (see Appendix B, Chart B). The only requirement for this modification is that an administrative decision be made designating when each period will meet. The modification enables each class to have one extended meeting each week, but in exchange for this, each class forfeits a fifth meeting weekly.(16:90).

> Advantages of this pattern include the availability of a longer period of instruction, particularly desirable in some laboratory phases of a course. The chief disadvantage, as compared with the conventional schedule, is the forfeiture of daily meeting periods and the rigidity of an imposed common pattern for all subjects, regardless of their instructional requirements, meeting during a given period (16:90-91).

II. SEVEN-PERIOD DAY

Probably the most popular plan for adding increased flexibility to the schedule has been the addition of one period, thereby providing a seven-period day (See Appendix B, Chart C). Sturgess maintains that "increasing the number of periods increases the flexibility, permitting about ten per cent increase in course offerings" (60:50).

James B. Conant has emphasized his desire for a seven-period day in Education in the Junior High School Years (19:24).

> Some educators desire in grades 7, 8, and 9, a six-period day with long periods for supervised study. I prefer a seven-period day or the equivalent; otherwise it is difficult to pay attention to the varying needs of children with different abilities . . . the difficulty comes in scheduling remedial work in reading and arithmetic for those who need it. Some pupils need as many as ten periods of English a week, while others may profit from beginning the study of a modern foreign language for five periods a week. In a fully scheduled six-period day, or thirty-period week, there is not room for the flexibility needed; to achieve it, one must sacrifice something, generally fine or industrial arts. Ideally, physical education ought to be required five days a week.
>
> With a seven-period day, or 35-period week, thirty periods can be devoted to the required subjects, including activities, and the five extra periods can be used to meet individual needs and interest in foreign languages or any required subject in which additional work is advisable.

In spite of the literary support for a seven-period day as opposed to the conventional schedule and the adoption of seven periods by many junior high schools, caution is advised by some.

F. Willard Robinson (51:20) considers some of the administrative problems that must be considered in a basic organizational changeover from six to seven periods. In summary he feels the following provisions must be met:

1. The changeover from six to a seven-period plan or organization must be structured and sponsored officially by the school district.

2. The changeover from a six to a seven-period plan or organization should be adopted as an experiment and should incorporate the following general conditions:

   a. The objectives, purposes and goals should be specifically stated.

   b. The plan for reorganization should be evaluated in terms of these objectives.

   c. The experiment should be limited to a specific and predetermined period of time.

   d. The evaluation instrument should be formulated and validated at the time the total experiment is structured.

3. The increased supply allotments should be apportioned on the basis of the added need and in relation to the approved program.

4. The provision should be made to increase the assignment of teacher time to give adequate and realistic implementation to the seven-period day plan or organization.

5. The seven-period day should not be required of all pupils within the school.

6. The primary purpose of the seven-period day should be to provide remedial, enrichment, or intensified opportunity in established or related subject areas rather than to provide an added activity period.

7. The seven-period plan of organization should begin with a limited program which can be

expanded gradually as the need and the facilities require.

8. The school district should begin the seven-period day plan of organization only when it is able and willing to finance the added costs inherent in the program.

David Crockett Junior High School, in Beaumont, Texas, is an example of a school that converted from a six to a seven-period day. The administration wanted to increase the instructional load without diversely affecting the achievement standard of the pupils. Notable changes in the curriculum were the addition of a required full year of reading instruction for all seventh grade students and one-half year for students in the eighth grade. Also, one-half year of science was made mandatory for eighth graders and a study period throughout the school year for ninth grade students.

To incorporate this additional instruction into the school program, time for the seventh period was obtained without lengthening the school day by (1) reducing the time allocated for each period from fifty-five to fifty minutes, (2) shortening the homeroom period from twenty-five to ten minutes, and (3) allowing four minutes between classes instead of five (41:27).

At midyear the program was evaluated by asking teachers and students to complete a questionnaire. Opinions varied greatly, but these conclusions were evident:

1. A majority of the teachers felt that the fifty minute periods were sufficient for daily lessons and the new mandatory reading, science, and study period requirements were basically good.

2. While a slight majority of the teachers who voiced an opinion thought their teaching effectiveness had been impaired as the result of teaching six periods instead of the customary five, most seemed to feel that more effective learning on the part of the students was possible with the seven-period day.

3. Students answered with a resounding "no" when asked if the extra period placed too much work on them.

4. Most teachers felt that the abbreviated homeroom period did not seriously hinder pupil-guidance services normally offered by the teacher during this time. (41:27-28)

Also included on the questionnaire was the query: "Would you like to continue the experiment?" Eighty per cent of the students answered "yes," as did a majority of the teachers who answered (41:28).

The second phase of the evaluation program for this experiment consisted of administering the California Achievement Test Battery to a random sampling of fifty-seven eighth and ninth grade students who had been enrolled continuously at David Crockett for the preceding two years. The results were compared with those obtained from the same test administered in March, 1961. The comparison was an effort to determine if shortening the class periods and adding an extra subject had significantly affected pupil achievement in the skill areas measured by this test.

The results were:

	Median	
	March, 1961	February, 1962
Reading	9.7	10.5
Language	9.4	10.5
Arithmetic	9.2	9.7
Average	9.4	10.2

The above results seem to indicate that the present curriculum, while offering the opportunity for an extra subject, did not significantly affect the achievement of the students in the areas measured by the test. "It appears that fifty-minute periods are sufficient to handle seven subjects each day" (41:29).

The Airport Junior High School, Los Angeles, California, had experimented with many schedules prior to settling on a seven-period day with a fifteen minute homeroom. They feel the present seven-period program contains the following advantages:

1. A more effective academic program.
2. An expanded and more appropriate practical arts program.
3. A more nearly adequate fine arts program.
4. A better health and physical education program.
5. More "real life" participation by pupils in the functioning of the school.
6. A stronger exploratory and guidance program.
7. A program that is flexible and sensitive to the peculiar needs and interest of young adolescents.

8. A program that capitalizes on the highly varied interests and talents of the faculty. (34:520)

Herriott, the principal, (34:523-524) states that

> Although teachers meet six instead of five classes per day, their over-all load is not necessarily increased. Class size is held somewhat below the Los Angeles city average. Programming techniques which balance or minimize teacher load are more possible under the seven-period program. But more especially, the usual demands upon teachers for sponsoring extra-curricular activities are minimized because most of the traditional extra-curricular activities have become or can become truly co-curricular, a part of the organized school program, rather than being carried on in an activity period or in an after school program. Finally, class interruptions, always the bane of good teaching, are reduced by comparison with their prevalence in the usual school program. (Hard to believe, I know, but true.)

In conclusion, Herriott makes an interesting comment (34:524):

> All must concede that it is not how many periods there are in the school day, but what is done with them that counts. It is not how many minutes a teacher has pupils in his class, but what he does with them while he has them.

III. BLOCK SCHEDULING

Many variations of the seven-period day have been advocated and some have been put into operation. "Block Scheduling" is one such variation, although it could be used in schedules other than those involving a seven-period day. Allen and Bush have described three variations of the block method of scheduling.

Straight block. The "straight block" retains the same meeting pattern for an entire semester, with the exchange of the amount of time allocation for first and second periods being reversed during the next semester.

STRAIGHT BLOCK

Period	M	T	W	Th	F
1	1	2	1	2	1
2	1	2	1	2	1

The advantages of this type of scheduling lie principally in the increased length of instructional time, and the disadvantages center around the lack of a daily meeting. The disadvantage becomes especially troublesome in a situation where the Tuesday-Thursday meeting pattern results in too much of a break in subject matter continuity, particularly when a student happens to be absent on Thursday. His absence would result in his not meeting that class for an entire week, from one Tuesday until the next (16:92).

Modified block. The "modified block" illustrates a modification in block scheduling which tends to overcome part of the above difficulty. It eliminates the need for alternate-week or alternate-semester scheduling by dividing the time on Friday, or any one day per week, as under a

conventional schedule, thus giving each subject three meeting days per week (16:92-93).

MODIFIED BLOCK

Period	M	T	W	Th	F
1	1	2	1	2	1
2	1	2	1	2	2

Period addition. A third possibility involves "Period Addition". Period addition is a means of providing for different lengths of periods without sacrificing a daily meeting.

PERIOD ADDITION

Period	M	T	W	Th	F
1	1	1	1	1	1
2	2	2	2	2	2

1	1	1	1	1	1
	X	X	X	X	X
2	2	2	2	2	2

1	1	1	1	1	1
	1	2	1	2	1
2	2	2	2	2	2

This is accomplished by designating a part of each period with a special X period to be divided between the two periods on an alternating basis. Periods may be shortened to accomodate the X period with the same total time, or the X period may be of a different length. Advantages of period addition are primarily to allow for varying the length of instruction without sacrificing a daily meeting. The disadvantage of rigidity, as noted in the earlier patterns, still pertains; and this and other patterns involving variation in the length of instruction leave the assumption that differing types of instructional activities appropriately demand different lengths of instructional time (16:93-94).

An example of a form of block type scheduling can be identified in the program at Terman Junior High School, Los Angeles, California. Terman converted to a seven-period day in an attempt to make it possible for students to include an additional elective such as a foreign language, music, art, shop, etc., in their daily programs (58:119).

The Terman faculty spent considerable time evaluating this program. After one year's operation they reached the following conclusions:

1. There is not enough time to teach the subject matter in seventh and eighth grade English, ninth grade algebra, geometry, and biology.

2. There are too many students controlled by each teacher in the seventh and eighth grade English and social studies classes.

3. There is need for more teacher-supervised English study.

4. There are too many papers and preparations for English and social studies teachers.

5. There is not a large enough period for shop and homemaking classes. (58:119)

The faculty and administration of Terman decided to retain the seven-period day with necessary modifications in certain areas. The seventh and eighth grade programs were to include two periods of English. Those students who qualified were to start a foreign language during one of the English periods. Eighth graders were allowed a double period of shop or homemaking for one semester and to choose two electives the following semester.

Examples of the seventh and eighth grade programs are shown (47:120):

TERMAN JUNIOR HIGH SCHOOL SCHEDULE--7TH AND 8TH GRADES

Period	1	2	3	4	5	6	7
7th Grade	English (For. Lang.)	English	Social Studies	P.E.	Arith.	Science	Art Music
8th Grade	English	English (For. Lang.)	Social	Arith.	P.E.	Shop or Home Ec.	Elec.

The ninth grade program provides for block periods for increased time in algebra, geometry, and biology. These schedules may appear in the following manner (58:120):

TERMAN JUNIOR HIGH SCHOOL SCHEDULE--9TH GRADE

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	Biology	Biology	Biology	Biology	Biology
2	Biology	Geometry or Algeb.	Biology	Geo. or Algebra	Biology
3	Geom.or Algebra	Geom.or Algebra	Geom.or Algebra	Geom.or Algebra	Geom.or Algebra
4	English	English	English	English	English
5	Foreign Lang.	Foreign Lang.	Foreign Lang.	Foreign Lang.	Foreign Lang.
6	Social Studies	Social Studies	Social Studies	Social Studies	Social Studies
7	P.E.	P.E.	P.E.	P.E.	P.E.

The above schedule can be changed for second semester to give algebra three days and double periods and provide two days for biology.

For students who do not select biology, a three-day elective such as shop, general science, hygiene, etc., can be substituted to fill in the double period. This also leaves an additional elective period (58:120):

TERMAN JUNIOR HIGH SCHOOL SCHEDULE--9TH GRADE

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	Elective	Elective	Elective	Elective	Elective
2	Study	Algebra	Study	Algebra	Study
3	Geom.or Algebra	Algebra	Algebra	Algebra	Algebra

"The double periods in algebra and biology also provide a good arrangement for team teaching and equipment utilization. By scheduling another algebra class first period, both or several classes fall together in second period. This has been done with excellent results" (58:121).

Some disadvantages in the program developed in homemaking and shop classes. Teachers discovered they were not accomplishing as much in the double period one semester schedule as they did in the single period for the full year. They assumed there would be a great saving in time when assembling and putting away equipment. They had not calculated the amount of time a student put in over the year outside of class, either before or after school or at home (58:121).

The double English period for seventh and eighth grades allowing some students to begin foreign language study produced excellent results. Because of this success Terman is considering more subjects, especially electives,

on a three-two day arrangement for next year. They are hoping to retain a seven-period day for students, and are also desirous of having a five-period day for teachers (58:121).

IV. ROTATING SCHEDULE

Sequence Rotation. A relatively simple change that may add a degree of flexibility to scheduling programs is found in the rotation schedule and its variations. The simplest of these programs is the "sequence rotation" (16:94).

SEQUENCE ROTATION

Period	Monday	Tues.	Wed.	Thurs.	Fri.
1	1	2	3	4	5
2	2	3	4	5	1
3	3	4	5	1	2
4	4	5	1	2	3
5	5	1	2	3	4
6	6	6	6	6	6

The standard pattern is retained in terms of a daily meeting and length of meeting. The only variation is that the rotation of periods changes from day to day.

The advantages of sequence rotation are derived primarily from the sharing by all classes of the interruptions inherent in any one period. It also enables teachers

to share different hours for preparation. The disadvantages cited are the undue complexity of the schedule and the difficulty in being able to keep the schedule clear in terms of what period meets which day at what time. Allen and Bush feel this is more of a disadvantage to the supporting staff than to the teachers and pupils who are continually working with this particular schedule pattern (16:94-95).

Sequence rotation lends itself to other possible variations. The last period of the schedule can be included in a sequence rotation, and, if block scheduling is used in the school program, it would be possible to rotate the sequence in series of twos (16:95).

Displaced rotation. "Displaced rotation" is yet another form of the rotation pattern in scheduling. This variation is a means of scheduling an additional period within the total time allocation of the normal or previous schedule. Under displaced rotation, one period a week of each of the other subjects is replaced by instruction in an additional subject. The advantage is the provision for an additional instructional period; the disadvantage lies in that instruction in all subjects is reduced to four periods a week. The two X periods may be used for special events on Fridays or may be inserted at any point in the schedule

at the discretion of the administrator.

> It must be pointed out that there is very little evidence to suggest that daily instruction in every subject is superior to instruction on a less regular basis. Available evidence suggests that the critical nature of daily instruction varies widely with the subject, and although some teachers involved in non-daily instruction feel very strongly that this is not as successful as daily exposure, the tested results have not borne out their assertions (16:97-8).

DISPLACED ROTATION

Period	Monday	Tues.	Wed.	Thurs.	Fri.
1	1	7A	1	1	1
2	2	2	7B	2	2
3	3	3	3	7C	3
4	4	4	4	4	7D
5	5	5	5	5	X
6	6	6	6	6	X

Compressed rotation. Another variation is known as "Compressed rotation." Under this system five periods are scheduled into the time normally given six periods.

Classes offered each day vary. The chief advantage is an even extension of the length of instruction time; the disadvantage is the daily forfeiture of one instructional period.

COMPRESSED ROTATION

Period	Mon.	Tues.	Wed.	Thurs.	Fri.
1	1	6	5	4	3
2	2	1	6	5	4
3	3	2	1	6	5
4	4	3	2	1	6
5	5	4	3	2	X

Expanded rotation. In "expanded rotation" the amount of time normally allocated to six periods under the standard schedule is divided into seven equal periods.

EXPANDED ROTATION

Period	Mon.	Tues.	Wed.	Thurs.	Fri.
1	1	1	1	1	1
2	1	2	2	2	2
3	2	2	3	3	3
4	3	3	3	4	4
5	4	4	4	4	5
6	5	5	5	5	5
7	6	6	6	6	6

By combining the idea of a displaced period with the added period in the schedule, it is possible to acquire one lengthened period each week (16:98). Except for the double period, other meetings of a particular class are somewhat shortened. Daily meetings are retained with the provision for varied instructional length without extending the school or altering the basic framework (16:98).

In 1956, Claremont, California, separated its then combined junior-senior high school into separate units. The junior high school began operation with a seven-period day. During the first year of experimentation with this schedule, pupils, teachers, and parents expressed some concern about the length of the school day and its effect upon pupil attitudes and achievements. Since the schedule included seven periods of fifty minutes each, plus a ten minute homeroom, all encompassed within a departmentalized framework, teachers in particular expressed concern for the younger students. A careful check of Tabulation of Mark Distribution forms submitted by teachers during the first year supported these assertions, since teachers tended to assign generally lower marks in achievement, work habits, and cooperation during the afternoon classes, particularly where seventh graders were concerned (18:56).

A faculty committee at the junior high school was asked to consider this problem and the issue resolved into seeking a schedule permitting a shorter school day yet retaining the advantages of the functioning school program. The rotating schedule illustrated below appeared to possess the desired qualities and was approved for a one-year trial by the superintendent and the board of trustees (18:56).

CLAREMONT JUNIOR HIGH SCHOOL SCHEDULE

First Week

Per.	M	T	W	T	F
HR	G				
1	A	G			
2		A	G		
3			A	G	
4				A	G
5					A
6					

Second Week

Per.	M	T	W	T	F
HR			G		
1			A	G	
2				A	G
3					A
4					
5	G				
6	A	G			

Third Week

Per.	M	T	W	T	F
HR					G
1					A
2					
3	G				
4	A	G			
5		A	G		
6			A	G	

Fourth Week

Per.	M	T	W	T	F
HR					
1	G				
2	A	G			
3		A	G		
4			A	G	
5				A	G
6					X

The original schedule is shown for a school month. There are seven classes rotating on a six-period schedule. The illustration traces "A", an academic class, and "G", a physical education class, through one monthly cycle. Homeroom was twenty-minutes long, five periods were fifty minutes in length, and one period was of sixty-five-minute duration. X represents an assembly period (18:56-57).

The effects of the rotating schedule for teachers and pupils were evaluated as follows:

1. The sixty-five minute period provided the opportunity for a special activity period every seventh day for each class.

2. Heavier work loads were planned for morning sessions since this was felt to be the optimum period of achievement.

3. To reap the benefits of the sixty-five minute period careful planning on the part of the teacher and sincere application on the part of the pupil were necessary. When properly administered, this period and a half was intended to more than compensate for the occasional loss of one class session.

4. With careful planning the homeroom became a meaningful situation for guidance.

5. Constant evaluation was conducted throughout the school term in order to determine objectively the course to be followed in succeeding year (18:57).

Toward the close of the first year questionnaires were distributed to pupils, parents, and teachers. All were asked to comment on their impressions of the program as compared with the anticipated advantages of the schedule. The emphasis of the questionnaire was placed in an

effort to detect the effects on the achievement level of the students. The conclusions drawn from the responses were summarized as follows:

1. Teachers of academic subjects felt that the occasional loss of instructional time served to the detriment of their particular program.

2. Physical education teachers were unanimous in their opinion that the twenty-minute lecture period every seventh day did not produce the expected benefits.

3. Parents, pupils, and teachers alike endorsed the sixty-five minute period in the morning as beneficial, but felt that a return to the regular schedule wherein all classes met every day would be even more advantageous.

4. The one item on which there was near unanimous approval was the matter of the rotation of classes, which enabled teachers and pupils to work together frequently at their optimum level, and minimized the negative aspects of the routine which required each class to meet at the same time every day. (18:57)

As a direct result of the findings, a faculty committee recommended to the board of trustees that a return be made to the regular schedule of seven periods each day, each period of forty-five minute duration, with classes to be rotated daily (See Appendix B, Chart D).

Clemmer, the principal, speculates that the schedule may look complicated, but that in actuality it presents fewer problems than one might at first think. After prolonged vacations, such as Christmas recess, the first period begins the week to avoid unnecessary confusion (18:58).

> No longer must the administrator attempt to pattern his master program on the 'academic in the A.M. and activities in the P.M.' basis. No longer must the physical education teachers and counselors cope with 'that physical education class so early in the morning'. Since assemblies are traditionally conducted during the last period, no longer does one particular class bear the brunt of such schedule variations. Every teacher has an opportunity to work with every pupil at a time when he and the pupil are presumably most efficient. The teacher's tendency to mark a pupil's work more severely (or the pupil's tendency to achieve less satisfactorily) during a certain period of the day has disappeared (18:59).

Bellevue Junior High School in Bellevue, Washington, has a noteworthy variation to the rotating schedule. (See Appendix B, Chart E)

This was an attempt on Bellevue's part to work toward more flexibility with the possibility of an eventual move to modular scheduling. Mr. George DeBell, principal, explains their schedule this way:

> Our class periods vary in length because of a rotating schedule and because we spend less time generally in our elective classes than in our regular classes. Generally, all our classes, except the elective classes, will have the same amount of education time in the classroom during a given week, but the amount of time will vary on a day by day basis. Our regular classes will run for sixty-minute period meetings, four days a week, except for our last period of the day which meets for forty-seven minutes, five days a week. We have a block-of-time of three periods for the seventh and eighth grades and two periods for the ninth grade. This also functions as our homeroom. We have no activity period as such. Basically, our schedule is adapted around an eight period day for our three grade levels. This includes lunch period and dropping one period each day. Also, we are not using bells. The responsibility of students being to class on time and moving to classes belongs to the teachers and students (21:1).

The Woodruff Junior High School in Downey, California, diverted from the conventional schedule to a weekly rotating class schedule. (See Appendix B, Chart F) The change was made due to the concern with attitudes and performance of students toward the end of the school day. In order to reduce unnecessary confusion, the periods were kept in sequence, shifting downward one hour each week, and a letter of the alphabet was used to denote each week of the term. Therefore, in order to complete the rotational cycle, the weeks were labeled "A" through "F" and the cycle took six weeks to complete (35:160-161). Woodruff's principal, Donald G. Hunt, states:

> The rotational plan has many advantages, but it is questionable to have period shifts each week as the continual change creates a state of flux among the teachers and students. We have returned to the traditional schedule, but we may modify our experimental plan at a future date for the sake of alternating the monotony of the stereotyped class schedule (35:162).

A variation of the seven-period day is practiced at O'Farrell Junior High School in San Diego, California. Each of the six periods was shortened a few minutes to provide for a seventh enrichment period for interested students. Eighth and ninth grade enrichment activities were scheduled for seventh period. It includes co-curricular and enrichment activities, remedial instruction, and conferences. Since the regular school day for seventh

grade pupils is scheduled from second to seventh period, their enrichment activities take place during first period (59:122).

> It is not necessary that a master schedule be entirely different from the conventional secondary school schedule in order to be flexible. Many of the aspects of the O'Farrell organization make it possible to obtain a considerable degree of flexibility within the existing schedule. (59:122-123)

Some ways in which flexibility has been introduced at O'Farrell include:

1. Block-Time scheduling

2. Departmental Team: Departmental teams provide opportunity for cooperative planning among teachers of the same subjects. When several sections of a particular class meet simultaneously, considerable flexibility is possible. Classes can be combined for presentations by guest speakers and student reports can be shared with other classes. In addition, the ability range of two class sections can be considerably reduced if small groups of students, representing the extremes of each class, are transferred from one group to the other.

3. Flexibility of Grouping within Teaching Teams: The team organization makes for considerable flexibility of grouping. For example, in teaching English grammar, students may be grouped into three sections according to achievement level. It is easy to reassign sections for individuals. The entire group structure can be reviewed and realigned after any major test. Individual study may be assigned to either extreme of the groups, high or low.

4. Summer School

5. Seventh Period: Use of the library, remedial help with the teacher, or use for academic activities of an enrichment nature such as Spanish Club or History Club may be scheduled here.

6. Seminars: Academically talented students have been offered seminars in areas of special interest to them such as creative writing. These seminars meet weekly during regular hours and are conducted by staff members who have special qualifications in the particular area.

7. Credit by Examination: In exceptional cases academically talented students who can pass standardized tests in the field may be allowed to skip introductory courses and enter advanced sections (59:123:131).

V. BACK-TO-BACK SCHEDULING

In laboratory and activity subjects, the conventional time arrangement often hinders the program because considerable class time is lost in preparation, dressing, or clean-up. Back-to-back scheduling has proven especially advantageous in such subjects as home economics and girls' physical education.

Back-to-back scheduling implies that specific groups of students are programmed to certain teachers for consecutive periods. An illustration of this type of scheduling is evident in O'Farrell Junior High School's seventh grade home economics and physical education classes.

A group of seventh grade girls is programmed to the home economics teacher during period three and this group of girls is programmed to the physical education teacher for period four. During period three a second group of

girls is programmed to the same physical education teacher and to the same home economics teacher in period four. The chart below may illustrate this process more clearly:

O'FARRELL JUNIOR HIGH SCHOOL
BACK-TO-BACK SCHEDULING

	Period 3	Period 4
Home-Ec Teacher	Group #1	Group #2
Physical Ed Teacher	Group #2	Group #1

If the home economics and physical education teachers plan together, the possibilities for a varied instructional program are numerous. On specified days group #1 could have home economics for two consecutive periods while group #2 would have physical education for the same two periods or vice versa. Increased instructional time in a two-hour block is derived from time saved when the mechanics of preparation, roll call, clean up, and showers are eliminated (46:1).

VI. SEVENTY-MINUTE PERIOD

Another experimental schedule variation incorporates the seventy-minute period. (See Appendix B, Chart G) A number of Michigan and Indiana schools have converted to five seventy-minute periods a day with six classes for each

student. Each class meets four periods per week with one period each week reserved for activities. Such a schedule is intended to provide more supervised study, eliminate study halls, permit longer periods for labs, and provide an extended activity period. A report by teachers, parents, and students with regard to an experiment with this schedule in Griffith, Indiana, strongly endorsed the program. The advantages listed included fewer discipline problems and the opportunity to offer more courses. Some disadvantages noted were additional scheduling problems, difficulties for slow students in carrying five subjects, and criticism from some parents that teachers did not allow enough study time (32:17).

The seventy-minute period has been initiated primarily in high schools, but can and is being used in some junior high schools. Cobre High School in Bayard, New Mexico, is one school which feels the purposes, manifestations, and operation of this type of schedule were beneficial.

At Cobre the school day consists of five seventy-minute periods. The sixth period is a floating period and replaces one period each day beginning with first period Monday and rotating down through the schedule. Sixth period Friday is used as an activity period. Therefore, each class meets four times each week, thus allowing 280 minutes of class time per week in each subject (31:51).

The schedule was designed to better facilitate the instructional program and to meet individual differences. Also, Cobre is primarily a bussing school; therefore, activities needed to be given school time for the most part (31:51).

Cobre defined their advantages as follows:

1. Seventy minutes allows the teacher to present the material, hold class discussion, and to supervise study or conduct a laboratory exercise.

2. The schedule provides for an activity period each week during school hours; it does not in any way deplete time allowed for regularly scheduled classes.

3. The schedule allows for in-service, education time, again 'during regular school hours'. Once a month a faculty meeting is scheduled during the activity period. The students are dismissed--not having missed any classes--and the meeting is finished by the time school is regularly dismissed.

4. The schedule allows for better use of staff than did the schedule it replaced.

5. The schedule allows for additional activities within the same allotted time as did its predecessor. That is, the students do not leave home earlier, nor do they arrive home later in the evening, and yet they receive more schooling than before.

6. Teachers observed fewer discipline problems and interruptions.

7. More efficient and effective use of the library was noted.

8. A more compact individual program was provided.

9. Students were permitted to carry courses formerly available to them only during summer school (31:52-53).

The following disadvantages were realized:

1. Student schedules are more difficult to arrange because the new program lacks the flexibility of the study hall program. However, although the schedule is more complex, it does offer the advantages of individual planning as opposed to group planning.

2. Slow students who had trouble managing four or five subjects are more frustrated than ever with six courses. However, there have been fewer failures among students carrying an extra subject.

3. Some parents have complained that certain teachers do not allow enough study time during the seventy-minute class period (31:54).

VII. SPLIT-WEEK SCHEDULE

Some of the schedules previously mentioned have operated with split-week courses in conjunction with a rotating schedule. Verdugo Hills High School initiated split-week courses on an experimental basis in an attempt to make their program more flexible, to allow for more electives, and to see if some courses could be taught effectively if scheduled only two or three days a week (55:434).

Some of the advantages and disadvantages appeared to be common for most of the experimental classes but were not specifically related to the subject involved.

First, the disadvantages were:

1. Split-week programs sometimes mean an increased work load for the teacher.

2. Non-achievers and discipline cases tend to take advantage of the alternate day schedule by cutting classes, "forgetting" to bring materials, or what transpired at last session which was "so long ago," failing to do homework because the teacher isn't breathing down their necks every day, and playing one teacher against another.

3. In those classes which normally meet five days a week, the teachers sometimes had trouble streamlining content to fit the shortened schedule.

4. Homework loads are sometimes not balanced, and students get a double dose.

5. If partner courses are too closely related, students become too confused and teachers may infringe on each other's territory.

6. The present plan of set partner courses which requires the student to take subject "B" if he wants "A", etc., created some feelings of resentment and discontent.

7. Most split-weeks are ungraded and this creates problems in establishing performance norms and subsequently in marking standards. (55:434-435)

The advantages were cited as follows:

1. In a smaller school more electives can be offered.

2. Students with heavy majors and many requirements can include more elective experiences.

3. Student interest is more easily sustained. Students enjoy variety which the schedule provides; change of subjects, change of teachers, change of pace. This proved a good antidote for restlessness.

4. Adaptability of schedule and mobility of program provide opportunity for non-achievers to find themselves and fill in voids.

5. Drill and remedial subjects are more digestible than in usual doses.

6. Attendance records are improved in many cases.

7. Report card marking tends to be more objective when two teachers enter and judge on the basis of two observations.

8. Class preparation is actually less in some cases since the teacher meets each class half as often and can prepare once for two classes.

9. More responsibility is placed on the students; less spoonfeeding in matters of assignments, due dates, etc., is provided by teachers.

10. In comparison with ten-week classes, split-week schedules provide time span for more secure learning and the development of depth in appreciation.

11. The schedule provides orientation for students who will be meeting college routines and schedules. (55:435)

The staff at Verdugo Hills suggested the following recommendations after one year of experimentation:

1. Many split-week courses have value, particularly in a small school, and should be offered in the program.

2. To provide for greater opportunity of choice, several split-week courses should be offered the same period, and students should be allowed to select the partner courses he prefers.

3. Although it is not possible to eliminate from split-week courses all discipline problems, the distribution should be checked to avoid enrolling too many students in one class.

4. Attendance procedures must be meticulously followed to prevent cutting.

5. Where possible, split-week classes should be restricted to certain grade levels or at least scheduled for "upper division" or "lower division." (55:436)

VIII. MULTIPLE SCHEDULE

In an effort to provide a greater opportunity for certain students to broaden their education through additional experiences, particularly in the humanities, a multiple schedule plan of classes was initiated at Nathan Eckstein Junior High School in Seattle, Washington, in 1964. It involved approximately one-fourth of the seventh grade students who had shown by previous efforts in elementary school work they had average or above ability to study and achieve effectively. These prerequisites for inclusions in the program were used since it meant that those involved in the scheduling program would, in most cases, not meet as frequently with the regular subject matter classes as they would have in a normal schedule (44:1).

The schedule of additional subjects provided in the Eckstein Multiple Plan includes:

1. Advanced instrumental and vocal experiences not previously available to talented seventh grade youngsters.
2. Art appreciation (art history) tracing the development of art from primitive times to the present.
3. Reading enrichment.
4. Foreign language laboratory experience which was previously limited.

5. Supervised study where students may receive additional help or study time as needed. The latter was designed to be flexible to some degree when it was found that some students required extra study time during the week. (44:1)

Students involved in this program omitted mathematics, language arts, social studies, and foreign language classes once a week.

> No appreciable loss in accomplishment by these students was noted by the end of the first semester and students and teachers were almost unanimously in favor of continuing the experiment. Unsolicited comments from parents and pupils add to the feeling that the program should be expanded to include the eighth grade class next year (44:1).

Eckstein, like many Seattle junior high schools, has long been committed to a six-period day with teachers meeting five classes during the day and using one period for preparation. The Multiple Schedule does not infringe on the teaching time nor does it deprive teachers of their preparation period. Additionally, it does not bring about a greater teaching load even though several classes average about sixty-five students per period. This is due to the flexibility of this type of program which enables a teacher to be released to assist with the large groups (44:1).

The rearrangement of classes is made possible by designating certain class periods on various days during the week as ones which will be affected. (See Appendix B, Chart H) The only day not used is Tuesday and the only

periods left the same throughout the day are second and fourth periods. The periods throughout the week are third period Monday, first period Wednesday, fifth period Thursday, and sixth period Friday (44:2).

The main advantage of the plan lies in its flexibility. Eckstein has long felt the rigidity of the conventional type schedule. Adding to this, the recent emphasis on mathematics, science, and foreign language has tended to accentuate the problem even more.

> Schools throughout the United States are departing from long-used, established procedures of school organization to achieve flexibility in their curricula (44:2).

Another advantage of the Multiple Plan is that it becomes possible to operate two or more 'schools' within a school, operating on different schedules, but yet on the same time allotment. For example, at Eckstein 150 students participate in the multiple program while the remainder of the seventh grade class follows the conventional schedule (44:2).

It was Eckstein's hope that by this variation more classes, primarily in the humanities, which were not previously available, could be offered.

> We feel that schools should reflect to some degree the needs of their communities. The residents of the Eckstein area are largely professional people with strong educational and cultural backgrounds. Our total program stresses these needs expressed by our community and we as a school attempt to include them in their proper balance within our school curriculum. This

objective has been well stated in a recent publication which says, "We should seek ways to establish an interplay between the sciences and humanities so that they mutually compliment and fortify each other; from such a relationship we may hope for citizens who are educated in the full sense of the term--interested, informed, inquiring, tolerant" (44:2-3).

IX. VARIABLE PERIOD LENGTH

With variable period lengths it is possible to vary the amount of time designated for each period. In the following illustration, periods one and two meet for thirty minutes, periods three and four for fifty minutes, and periods five and six for seventy minutes (16:98).

VARIABLE PERIOD SCHEDULE

Period	Minutes	Mon.	Tues.	Wed.	Thurs.	Fri.
1	30					
2	30					
3	50					
4	50					
5	70					
6	70					

The specific length of time in the periods can be varied to suit the individual school. However, by itself, this modification may not be too feasible, for it permits no variation in time for different phases of a particular course. It combines rigidity with small gains in flexi-

bility for unique courses (16:98)

Combining the variable period length with a sequence rotation makes this difficulty unnecessary. Each class then has some short, some medium, and some long periods, adaptable to the varying time requirements of different phases of the course. It should be pointed out that only one or two periods may meet for a non-standard length of time each week, either shorter or longer. All periods need not vary. The lengthened or shortened periods may be rotated to provide for optimal adaptation to instructional purposes and methods (16:99-100).

> The various scheduling patterns described so far illustrate well the kinds of alternatives available within rigorous limits of habitual time schedules regardless of whether or not any one of them, followed by inquiry as to their possible value, should be part of initial efforts to introduce flexibility. As faculties become interested in these kinds of change and, through experience, lose uncritical independence on and blind allegience to the standard school day of six fifty-five minute periods, doors open for many more complex possibilities inherent in the new design for secondary education (16:100).

X. MODULAR SCHEDULING

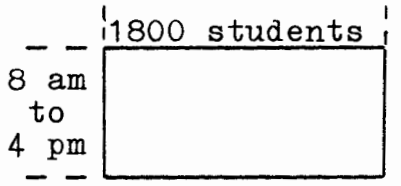
The most recent innovation in scheduling practice is the modular approach as designed by Dwight Allen at Stanford University. His original idea was to provide for better student learning situations through effective staff utilization. The tool by which he sees this possibility

become a reality is his modular scheduling technique.

> A modular concept of course structure is predicted on the premise that those involved with curriculum planning can determine explicitly what kinds of specific learning activities students need to have. The modular concept is then adapted in such a manner that the facilitation of those elements (namely: organization of course structure, number of students involved in specific groups, teacher-pupil ratio and specific time allocations) associated with the learning activities becomes managable (3:1).

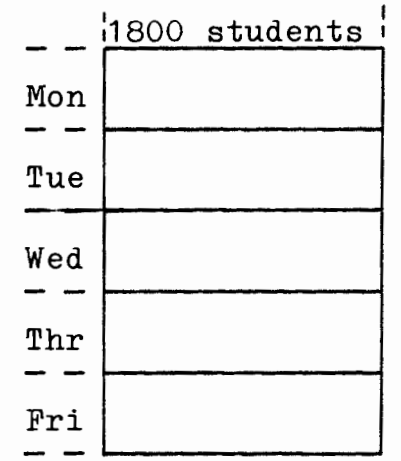
Allen feels that the entire curriculum should be thought of as an area to be scheduled. When charting, the horizontal dimension may represent the number of students while the vertical dimension represents the length of time. Thus, if a school has eighteen hundred students and the school day involves the hours between 8 a.m. and 4 p.m., the curriculum area could be shows as follows (3:1-2):

Figure 1: The area of the curriculum when a daily schedule is used.



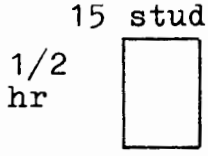
If a weekly schedule is used, the curriculum area becomes that area shown in Figure 2.

Figure 2: The area of the curriculum when a weekly schedule is used.

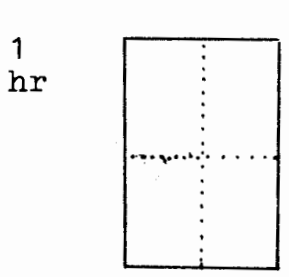


Thr curriculum can then be divided into sub-parts called modular units which are derived from units of time and numbers of student schedules. The modular unit chosen for time should be chosen according to the smallest amount of time that is desired for any instructional purpose. If forty-minute, sixty-minute, or one hundred twenty-minute classes are desired, a twenty-minute module would be appropriate. The number of students selected should also be stated in terms of desired class sizes. A ten-student module would accomodate classes of ten, twenty, thirty, forty, etc. Though any modular unit can be selected for either period length or class size, it is desirable to select as large a modular unit as appropriate to reduce the complexity of scheduling. The following diagrams help describe the modular concept (3:3):

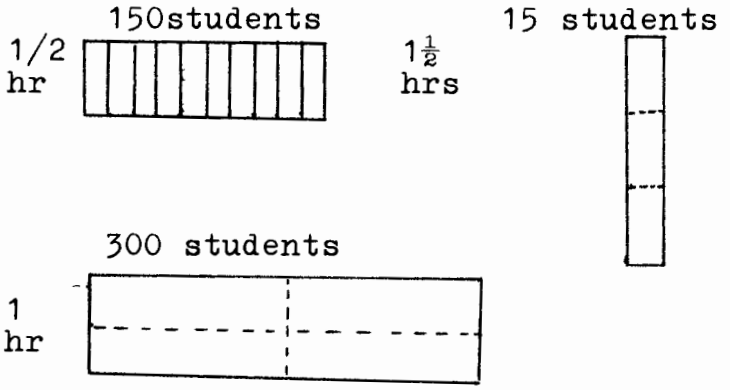
One possible modular unit is that of 15 students meeting for a single half-hour period:



Thus, a "class of 30 students meeting for an hour (a conventional class unit) would appear as a multiple of the modular unit:



A wide variety of structures is possible, all multiples of the basic modular unit:



Note that many other basic modular units are possible:

5 students for 10 minutes; 10 students for 15 minutes
15 students for 20 minutes; 30 students for 30 minutes
50 students for 60 minutes; etc.

"The smaller the modular units, the greater the flexibility--but also the greater the complexity" (3:4).

Several relatively new concepts of teaching are an integral part of the modular design. Team teaching, well-defined departmental organization, resource centers, and seminar-group, large-group, and individual study are a few. However, areas must be provided within the physical structure of the building to facilitate these concepts.

Justification for team teaching has long been recognized by school authorities. The advent of different sized classes, however, along with individual study time, has received less acclaim. Lloyd Trump has pointed out the following advantages of individual study (3:11):

1. Independent study provides for individual differences in interests and abilities.

2. It permits study in depth.

3. It is practical for the student in that he is studying something importand and useful to him.

4. Study in one area will usually lead to a search for information in other areas.

5. Independent study will help the student to develop ability to go it alone.

6. It sill lead to greater creativity and critical thought on the part of the student.

Dwight Allen has identified the benefits of large-group instruction as (3:15):

1. Other teachers of the team are free to prepare their own large class presentation, correct papers, or to perform other professional tasks that the traditional school arrangement seldom permits.

2. The use of technological equipment becomes more economically feasible.

3. More resource people in the community may make presentations to all students interested.

4. The staff may utilize their special talents to a much better degree.

5. Research has proved that it benefits both the student with low ability and the student with high ability.

6. It challenges teachers to become even better teachers.

Further, Allen defines the advantages of seminar instruction (3:18):

1. A student increases his independence in the responsibility of learning.

2. The student develops greater creativity and better habits of intellectual inquiry.

3. The student develops greater effectiveness in the ability to make decisions.

4. The student develops greater competence in communicating with other members of a group.

5. The student derives more motivation and satisfaction in learning.

6. The student develops better effectiveness in human relations.

Four schools have been selected to exemplify the modular scheduling technique.

Euclid Central Junior High School in Euclid, Ohio, developed a modular program that is based on a twenty-two minute module, giving the program sixteen modules during the regular school day. The primary objective was to provide individualized instruction on an ungraded basis (50:66).

First, single modules were assigned to all activities and to classes including lunch period, foreign language classes in the seventh and eighth grades, and to certain remedial sections. Then other classes were scheduled on the recommendations of the teacher, the needs of the students, and the requirements of the local board of education (50:66).

For seventh grade "core" classes, five modules daily were assigned, with an additional module per week, during

which time teachers and students were free for conferences, library work or small-group conferences (50:66).

All regular classes of ninth grade English were assigned three modules each day; remedial classes, two modules; and advanced classes, three modules to be used for classwork, small-group conferences, or individual library work (50:66).

Teachers of industrial arts, home arts, and physical education classes in the seventh grade requested extended periods of time for laboratory classes, and so were assigned three modules daily. Industrial arts and home arts classes in the ninth grade were assigned four modules to meet the basic state requirement (50:66-67).

Because classes overlap due to differing lengths, the bells were eliminated from the program and two minutes were dropped from the time allowed between classes. Since only one-third to one-half of the student body moves at any one time, most classes begin within a minute or two after the preceding class closes. All classes have gained approximately thirty-five minutes per week and English classes have gained up to one hundred and sixty minutes per week. English teachers have been instructed to use the additional time for supervised composition, individual and group conferences with students, group and individual instruction, developmental reading, and other suitable

activities. The elimination of a bell system has not created a problem (50:67).

Euclid Central's administration and staff have discovered the following advantages in the modular plan:

1. Because only one-third of the students are in the halls at one time, less time is used between classes. Since there is no definite starting time, students seem compelled to arrive early so as not to be considered late.

2. Fewer "late-to-class" discipline problems are created when teachers may use their own judgment for legitimate tardy excuses. Before, the teacher had no recourse except to reprimand students and send them to the office.

3. Fewer discipline problems are created in hallways, lavatories, etc. Students have no reason or opportunity to congregate in small groups.

4. Because half of the lunch period was eliminated, teachers spend less time in non-teaching, supervisory duties. This has resulted in the reduction of staff by one full-time teacher.

5. Under the modular plan, a teacher may choose to have extended class periods instead of study halls. Teachers actually have the same number of students they would normally have in study hall except that they now have their own students, in their own classes, immediately after having assigned them work. This does not eliminate teachers, it merely reorganizes time for more efficient instruction.

6. Because department chairmen were formerly scheduled to teach their own classes, they had little opportunity for supervision. With the modular schedule, it is now possible to "overlap" assignments so that all teachers may be supervised.

7. More opportunity for experimentation is provided. Ninth grade students who previously had one or two study periods can now schedule an additional period in English or extended periods in other subjects (50:68-69).

After operating with the schedule for one year, Euclid felt definite conclusions could not be justified. However, the following generalizations were regarded to be of value in preliminary planning for the next year:

1. The size of the school is directly related to the need for such a program; large schools would have more problems which this type of schedule could relieve.

2. A large number of sections in a given subject makes modular scheduling less difficult as classes of the same modular size can be programmed side by side. This is not always possible with a small enrollment.

3. It is not necessary to operate with sixteen modules. With two additional teachers, fifteen modules would be adequate, and ample opportunity for "double" laboratory periods would be provided. This would also involve students selecting five or more major subjects and give time for additional activities.

4. The attitudes of the entire student body, staff and building personnel seem to have improved.

5. New students adjust quickly to flexible scheduling, although teachers have more difficulty.

6. Teachers have better control over classes since bells have been eliminated. An experiment in "sliding" classes may be initiated. This would allow a teacher to hold a class a little longer when an important point has been reached either in discussion or laboratory work. This time, taken from another class, could be made up at a later date by closing the class before the scheduled time (50:69).

Another example of modular scheduling is employed at Glenbrook South High School in Glenbrook, Illinois, where the program involves twenty-one twenty-minute modules each day (54:34).

All non-laboratory classes are scheduled for forty minutes daily, preceded or followed in most cases by a third twenty-minute module. Of the third module, fifteen minutes is used for supervised study and the last five minutes for moving to the next class. Laboratory classes are normally three modules in length, fifty-five minutes for class and five minutes for passing (54:34).

Sydney Salt, principal at Glenbrook, feels that flexible scheduling plans often fail because of teacher resistance. Consequently, Glenbrook's plan was designed as a gradual change that teachers could understand. The schedule fits into the framework of a fifty-five minute seven-period day. Gradually, more flexibility will be achieved by scheduling twenty-, forty-, sixty-, eighty-, and one hundred-minute class periods. It was considered important, however, to begin with a plan that could be "sold." (54:34)

These are the advantages that Glenbrook feels have been achieved with a twenty-minute modular scheduling program (54:34):

1. The district requirements of 275 minutes a week for laboratory classes can be met easily by scheduling a 55 minute period at the same time each day.

2. Requirements of 200 minutes a week for non-laboratory classes can be met without interfering with the schedule of longer lab classes.

3. Since some special classes do not need a full 40 minutes, students are available for more specialization in classes for speech correction, guidance and social work, remedial reading, driver education, and individual music instruction.

4. Since 40 minutes is considered too long for effective use of language labs, the facility is available for use by more students.

5. The modular system creates more occasions during the day when students can use the library.

6. The 15 minute study periods following the 40 minute classes permits individual and small group instruction.

7. Bussing time for special swim classes is accommodated in the schedule without adding to the length of the school day.

Meridian Junior High School in Kent, Washington, initiated a modular schedule of classes in September, 1964. They had four primary reasons for changing from the previous six-period schedule (23:1-2):

1. A six-period day allowed for the scheduling of eighteen class periods during a student's three years. It took seventeen of these to cover required courses for all pupils.

2. Seventh graders in 1965 will enter Meridian with two years of elementary school Spanish. This will mean an additional crowding of language courses.

3. It was believed that a change in the schedule might permit more flexible use of available time and the scheduling of some classes for other than the fifty-five minute, five days per week plan. A change might also provide periods of time and personnel to assist pupils with learning problems not limited to those scheduled in a daily "developmental" or "remedial" class.

4. In the development of any schedule, consideration would need be given to the following situation: Ninety-five per cent of the students are transported by bus so that much of the activity program, club meetings, and intramural sports activities must be carried on during the "noon break." To this end, it was desirable to continue the break, although separating students by grade during this time.

The Meridian administration and staff gave serious thought to a seven-period schedule. However, they did not want to increase the length of the school day and further, felt that all students were not capable of carrying a seventh subject successfully. It was recognized that some individuals needed special or remedial assistance in those classes in which they were already involved. In discussing these problems, the faculty concluded that the required academic courses were the heart of the program and should not be given less emphasis in time as might be the case if the school day were divided into seven equal class periods. The instigation of a seven-period day would also mean that teachers, then holding five classes with one class period for preparation and conference, would of necessity teach six class periods and be required to find time for additional preparation. Experience with team teaching over a period of three years had convinced them a better job of teaching and improvement of the instructional program was aided by more preparation and team planning, not less. Mainly, for these reasons, then, the scheduling solution should allow

students to have a reasonable elective program, receive additional help where needed, and permit teachers additional planning time (23:2).

Consequently, Meridian adopted a modular plan consisting of fifteen modules, each 26 minutes in length, with some flexibility and providing for longer laboratory sessions for science, homemaking, shop, and foreign language. Two of the fifteen modules were scheduled for lunch and noon break and were of shorter duration. Five of the students' classes were assigned two modules each or 56 minutes in length. In addition to these five classes totaling 10 modules, there is a three modular block-of-time of 83 minutes which can be divided between two classes assigned to this block in any manner to accommodate shop, science, homemaking, foreign language, or supervised study. Required courses for all grades remained the same (23:2-3).

A three modular block in the ninth grade included general laboratory science and either advanced shop, homemaking, or a foreign language scheduled back-to-back. Eighth graders have Earth Science and either shop for boys or homemaking for girls scheduled in the same manner during the three-module or 83 minute period. Students, therefore, are either in one or the other laboratories on alternate days for long sessions or are splitting the period between two classes.

Seventh grade students have a reading-study period as an extension of their English block. During this extended module one-half of the students are scheduled for Spanish and French classes every other day. Students who request additional help or who have been referred by classroom teachers are taken from the reading-study period for the necessary assistance. Students in the eighth and ninth grades who felt they needed help or could not successfully handle an additional seventh subject could also request additional study time (23:3).

Seventh, eighth and ninth graders were scheduled with separate noon breaks and a new facility was opened on December 9, 1964, consisting of three classrooms especially designed for team teaching. All ninth grade English classes were scheduled in groups of three to make use of this facility. An attempt was also made to schedule other like classes together so that the facility could also be used for large group instruction if desired (23:3).

Under the modular schedule all teachers continue to teach five classes with additional planning time. In addition, teachers have study-classroom supervision duties, responsibility for noon intramurals (physical education teachers only), attendance, athletic-coordinator responsibilities, or remedial reading duties for one module each semester. The second semester is the converted to additional

planning and preparation time. By assigning physical education teachers the supervision as well as planning of the noon gym activities, the faculty as a whole no longer has to take a turn at noon supervisory duty (23:3).

The former bell system presented a problem since classes were now staggered and the noon break modules were of different duration. A basic schedule was put on the hall bells and, where possible, the variations of this basic schedule were rung in individual rooms. Where a choice had to be made, bells were omitted in preference to having bells ring when they were not required (23:3).

Near the end of the school year the staff at Meridian evaluated the schedule in an attempt to identify noticeable defects and need for refinement. The conclusions reached were (23:4):

1. Seventh grade reading-study classes, averaging 45 students per class, and arranged so that one-half of the teaching staff might be released for planning, were felt to be too large.

2. One module of foreign language in the seventh grade every other day may prove to be too short a time.

3. The modules devoted to the noon lunch and break time are shorter than the other thirteen modules, amounting to 38 minutes plus the 5 minutes allowed for passing to class. Because of the time difference there are times when classrooms are unavailable for use because a class runs five minutes into another module block. Utilization of classrooms especially through noon modules (7, 8, 9,

and 10 is less than it need be. Games and assembly schedules are difficult to arrange under the modular schedule because of the staggered starting times in the classrooms. A special schedule may need to be arranged for assembly days.

4. Planning periods for many teachers have been split throughout the day rather than scheduled all at once in one block of time.

5. Class utilization is not as good as had been anticipated. This was especially noticeable this year because enrollment went beyond the desirable capacity of the junior high school.

6. The range of class enrollments in various sections of classes was greater this year because of more than usual difficulties in scheduling pupils in properly grouped class sections and permitting them the electives of their choice.

The Glendale Study is a proposal to schedule the Glendale Junior High School, Highline, Washington, on a modular schedule using vertical teaching teams for the 1965-66 school year. A special feature of the program will be the use of "cohesive units" for scheduling purposes and group identity (26:1).

The cohesive units are groups of students containing approximately six boys and six girls. These students will be together as a group of twelve in co-educational classes amd as a group of six in such classes as physical education. In different phases of instruction, each cohesive unit will be scheduled with various other ones, but it is expected that a student will develop a strong identification with his own group (26:1).

The overall program will consist of ten teaching teams organized vertically by subject matter areas. The teaching day will be divided into twenty-six modules of fifteen minutes each and will be programmed on a weekly basis of 130 modules. A study and activity period will be provided by extending the school day one hour on a voluntary basis (26:1).

The instructional program is to be organized in four different phases (26:1):

1. Large group instruction involving all students taking the subject for teacher controlled motivation, information, orientation, and testing.

2. Laboratory groups (24-36 students) for teacher-oriented skill building and directed instruction. Discussion groups (12 students) for student-oriented group exploration, evaluation, and articulation of learnings.

4. Independent study for individual responsibility in learning activities such as study, reading, listening, and writing.

Within the above framework Glendale has proposed several other features that seem to closely fit with the interests and needs of junior high school age students.

Among the features is the stress on exploratory learning experience rather than electives in the seventh and eighth grades. The goal is to provide exploration for almost all students in the ten major subject areas. It is hoped that the elective choice in the ninth grades and in senior high school will then be based upon this exploratory experience (26:2).

Individual contracts are being arranged for those students not interested in the regular elective offerings. A contract can cover any activity approved by the student's counselor and his parents. Included will be such activities as office help, library assistant, special work with a teacher, and independent study. The student will work on his individual contract while the other members of his cohesive unit are assigned to an elective or to independent study.

The program will also be divided into three "tracks"; standard, intermediate, and basic. Track "A" will be for those students who can manage the standard curriculum in mathematics. These students will be able to read at or above grade level and have a four year college program as a general goal. Spanish or French will be required of students in Track "A".

Track "B" students will use the introductory series in mathematics. These students read at or below grade level. Life goals for this group would include direct employment, trade apprenticeships, technical training, or attendance in junior colleges. Additional laboratory sessions in these academic subjects will be offered for Track "B".

Track "C" is reserved for those students needing special material and methods to adjust the regular

curriculum to their needs. The cohesive units will be filled by selection of students from the same tracks (26:2).

Seventh grade students assigned to Track "A" will elect either French or Spanish. The seventh and eighth grade program emphasizes the aural-oral approach. Ninth graders starting a language will be programmed with the seventh grade but will use four additional modules emphasizing writing (36:3).

Specialized study in reading and study skills will be provided for every student for all three years. General instruction in reading will be a part of the regular English program and specialized instruction in reading, vocabulary, and study skills will be included in each subject area. Reading laboratory instruction will be offered each student by a reading specialist (26:2).

Every morning two cohesive units will report to the same homeroom teacher at 8:22 for attendance and announcements The modular schedule begins at 8:30. One three-module period per week will be scheduled for each grade level for guidance. The counselors will organize the guidance program and be assisted by the grade level homeroom teachers (26:3).

One three-module period per week will be programmed for the entire student body for school-wide activities such

as assemblies, student council meetings, and special activities. Students not scheduled to a meeting will have additional homeroom activities. If an extension of time is needed, succeeding modules will be shortened by five minutes till the school is back on schedule (26:3).

The school day will also be extended one hour on a voluntary basis with special bus service provided. This period will be used for independent study in the resource centers, teacher conferences, intramural sports, and special interest activities.

All seventh graders will have three modules for music appreciation from the entire music staff. Most seventh graders are expected to elect nine additional modules of orchestra, band, beginning instrument, boys' or girls' glee club. Independent contracts will be arranged for the few who do not wish to participate in these classes. Band, concert choir, and orchestra will be offered as music electives to eighth graders. Ninth graders who elect a music specialty will have twelve modules combined with eighth graders plus six modules of specialities such as pep band, orchestra, small ensembles, etc. (26:3).

XI. SUMMARY

Many variations to the foregoing scheduling patterns exist, but these few basic practices were selected for illustration to indicate the wide range of possibilities that exist. Each schedule has certain advantages and disadvantages which are uniquely relevant to the desires of the individual schools that are considering schedule atoption or conversion.

CHAPTER V

PRESENT AND DESIRED SCHEDULING PRACTICES

One of the purposes of this study was to identify present scheduling procedures in the junior high schools of Washington and to determine attitudes about present scheduling techniques. To fulfill this purpose a questionnaire was designed (See Appendix A) and sent to 106 junior high school principals in schools with enrollments between 500 and 1000. The selection of the 106 principals was based on the available Annual Junior High School Reports 64-65 that were in the office of the Supervisor of Junior High Schools in the State Department of Education in Olympia, Washington, in November, 1964. Only those schools including grades seven, eight, and nine were used. Ninety-five questionnaires were returned (90%).

The questionnaire was designed to serve two distinct functions: one, to determine what scheduling practices the principals would prefer if there were no prohibitive obstacles; and two, to discover the obstacles that prevent them from employing the desired practices, assuming that discrepancies would exist.

The questionnaire centered around four main areas: homeroom, activity period, block-of-time, and the number, nature, and length of class periods. Each principal

could check as many blanks as he wished in each category. The results were as follows:

Homeroom

The homeroom is defined as a short period of time (30 minutes or less).

A. Purpose of the homeroom should be to provide time for:

1. Teacher-pupil guidance	66%
2. Planning and discussing student activities	57
3. Administrative routine	57
4. No valid purpose	14

B. Reasons for not providing homeroom:

1. Schools that do provide	40%
2. Incorporate purpose into block-of-time	38
3. Purposes do not justify time	7
4. Teacher resistance	3
5. Lack of time in school day	3
6. Financially not feasible	2
7. District policy	2
8. Will have in new program	1
9. Transportation problem	1
10. Purposes accomplished without homeroom	1
11. Teachers untrained in group guidance	1

C. In regard to providing homeroom:

1. Desirable	77%
2. Not needed	23

D. Best length for homeroom would be

1. 10-14 minutes	26%
2. 5-9 minutes	11
3. 15-19 minutes	11
4. 20-24 minutes	9
5. 25-29 minutes	5
6. 45-60 minutes	5
7. 10-14 minutes plus one 25-30 minute period once a week	2
8. 0-4 minutes	1

E. Frequency of homeroom:

1. Every day	38%
2. Once a week	16
3. Twice a week	5
4. As needed	7
5. Four times weekly	2
6. Three times weekly	1

F. Homeroom can best be placed:

1. Prior to first period within regular hours	27%
2. As lenghthened first period	18
3. An extended period--considering entire period as homeroom	14
4. As separate period immediately following first period	2

An analysis of the above data revealed the following:

1. The purpose of the homeroom is well defined and generally agreed upon by a majority of the principals.

2. A substantial majority of the schools provide for a homeroom to meet the stated purposes. Approximately the same majority feel that this should continue.

3. While a majority of the principals could not agree upon the length, frequency, and placing of the homeroom, the most popular proposal is for a homeroom that meets from 10-14 minutes every day and is placed either prior to or as an extended first period.

4. What is desired by the reporting principals seems to be in close accord with actual practice.

Activity Period

An activity period is defined as a period of time

during regular school hours for students to participate in extra-curricular activities.

A.	Purpose of activity period should be:	
1.	Student Council meetings	57%
2.	Club meetings	49
3.	Assemblies	47
4.	Classes in leisure time activities and hobbies	35
5.	No valid purpose	32
6.	School publications	21
7.	Intramural sports	16
8.	Inter-scholastic athletic practice	2
9.	Some social activities	14
10.	Study hall three days weekly per student	1
B.	Reasons for not providing activity period:	
1.	Schools that do provide	33%
2.	Not enough time in regular school day	27
3.	Does not justify school time	24
4.	Teacher resistance	6
5.	Should be after school	4
6.	Have gone too long without--would be difficult to change	4
7.	District policy	3
8.	Broad elective program offered instead	3
9.	Dropped due to public pressure	2
10.	Dropped due to lack of success	2
11.	New program will provide	1
12.	Investigating	1
13.	Unsound premise (not everyone is interested in activities)	1
14.	No reason	1
C.	In regard to providing activity period:	
1.	Desirable	54%
2.	Not desirable	38
3.	Not needed in our particular case	5
D.	Best length of activity period:	
1.	41-45 minutes	12%
2.	31-35 minutes	9
3.	Under 25 minutes	7
4.	36-40 minutes	7

5.	26-30 minutes	5
6.	46-50 minutes	5
7.	Variable	3
8.	51-55 minutes	2

E. Frequency of activity period:

1.	One a week	18%
2.	As needed	11
3.	Every day	9
4.	Twice weekly	6
5.	Three times weekly	5
6.	Four times weekly	4

F. Activity period can best be placed:

1.	During the lunch hour	15%
2.	On an alternate schedule as needed	14
3.	Following last period	13
4.	Variable	9
5.	Alternating homeroom & activity period	1
6.	Before noon	1
7.	Alternating in morning and afternoon	1
8.	Extended day once a week	1
9.	Lengthened first period	1

The results of this portion revealed the following:

1. A majority of the principals feel that the activity period is desirable for the purposes indicated, which are primarily student council meetings, club meetings, assemblies and classes in leisure time activities and hobbies.

2. Although a majority of the principals favor an activity period, only about one-third of the schools do provide them. This discrepancy is explained in a variety of reasons, but the two most prevalent are not enough time in the regular school day and that it does not justify the use of regular school hours.

3. No concensus can be derived as to the best length, frequency, or placing of the activity period.

4. A discrepancy does exist between what is desired and what is practiced.

Block-of-Time

Block-of-time is defined as a long period, usually two or more back-to-back "regular" periods in length, taught by the same teacher.

A. Purpose of the block-of-time should be:

1. Provide each student a longer period of time with one teacher to enhance the guidance program	74%
2. Provide each student a longer period of time with one teacher so that matriculation is made easier.	72
3. Some subjects can best be taught together by one teacher.	42
4. Provide time for discussion of student activities	18
5. No valid purpose	3
6. Team teaching	1
7. Economy of time	1

B. Reasons for <u>not</u> providing block-of-time:

1. Schools that do provide	78%
2. Lack of special training for staff	17
3. Difficult to schedule into total program	11
4. Does not warrant use	4
5. Teacher resistance	4
6. District policy	2
7. Not consistent with specialization in subject matter area	1
8. Has been dropped with no detrimental effects	1
9. Have gone too long without--would be difficult to change	1

C.	In regard to providing block-of-time:	
	1. It is needed in some or all junior high grades	92%
	2. Not needed anywhere in junior high	7
	3. Other considerations first	1
D.	Block-of-time program is <u>needed</u> in:	
	1. Seventh grade	92%
	2. Eighth grade	59
	3. Ninth grade	20
E.	Best <u>length</u> for <u>seventh</u> grade:	
	1. Three periods	57%
	2. Two periods	36
	3. Four periods	3
F.	Best <u>length</u> for <u>eighth</u> grade:	
	1. Two periods	47%
	2. Three periods	11
G.	Best <u>length</u> for <u>ninth</u> grade:	
	1. Two periods	20%

Attitudes concerning the block-of-time revealed the following:

1. An overwhelming majority of the principals feel a need for a block-of-time program in at least one of the junior high grades.

2. The purposes center primarily around a better guidance program and making articulation from one grade to another easier, especially from the sixth to the seventh grade. A third purpose, some subjects can best be taught together by one teacher, had the approval of almost half of the principals (47%).

3. A majority of the schools provide for a block-of-time program in at least one grade. Reasons for not

providing the block-of-time program, even though the need is felt, are varied but center primarily around the lack of special training by staff and difficulty in scheduling the block into the total school program.

5. As to the length of the block-of-time, three periods are favored in the seventh grade while two periods are deemed sufficient in the eighth and ninth grades.

6. A slight discrepancy exists between those who feel the block-of-time is needed (92%) and schools that do provide for this type of program (78%).

Number, Nature, and Length of Class Periods

The number of periods refers only to instructional classes; lunch periods, activity periods, and homerooms are not to be included as separate periods.

A. Courses can best be offered in a:	
1. Seven period day	55%
2. Indefinite number of modules (more than 8)	24
3. Six period day	22
4. Five period day	1
5. No best--depends on staff	1
B. Obstacles preventing this organization:	
1. Schools that do have this organization	56%
2. Financially not feasible	18
3. Teacher resistance	9
4. Investigating	7
5. District policy	6
6. Not enough data supporting validity	6
7. Bus schedules conflict	5
8. Not enough time in school day	1
9. Needs to be coordinated with high school	1

10. Master schedule too difficult to make up 1
11. Inadequate facilities 1
12. Many factors 1

C. The sequence of periods is best organized by:
1. Using same every day 57%
2. Revolving periods keeping lunch period constant 14
3. Revolving periods back one each day 2
4. Released time 4
5. Revolving periods keeping first period constant 1
6. Revolving periods keeping last period constant 1
7. No best--each has advantages 1
8. Ramsey plan 1

D. Some schools have offered for each student more subjects than meet during the course of any one day. The best organization for this plan is:
1. For each student to meet all classes every day 39%
2. Top % of class meet all but one class each day 13
3. For each student to meet all but one class each day 8
4. Meet some every day, other two or three times per week 7
5. For each student to meet half the classes on alternate days in double periods 6
6. Drop two or three classes per day 2
7. Team teaching in blocks-of-time 1
8. Staff preference 1
9. Ramsey plan 1

E. Regarding study time, it would be best to provide:
1. Long enough periods for study time under each teacher 76%
2. Individual study time for selected students outside regular classroom situation 35
3. Individual study time for all students outside regular classroom situation 14

4.	Separate supervised study halls	6
5.	Elective study room for ninth grade	1
6.	Schedule should provide some supervision time under each teacher each week	1

F. Regarding the size of classes, the best is to:

1.	Provide for smaller groups	79%
2.	Provide for larger lecture classes	76
3.	Provide for approximately equal sized classes	15

G. Obstacles preventing class organization of the above nature:

1.	Construction of building	60%
2.	Not enough evidence to support validity	19
3.	Teacher resistance	15
4.	Schools which have this organization	15
5.	Would take too long to schedule	11
6.	Possible conflicts created would outweigh benefits	5
7.	Investigating	5
8.	District policy	5
9.	Financially not feasible	5
10.	Change from present system too great	2
11.	Planned for next year	1

H. Best length of individual class period:

1.	Depends on particular subject	49%
2.	50-54 minutes	25
3.	45-49 minutes	15
4.	55-59 minutes	8
5.	40-44 minutes	2
6.	60-64 minutes	1

I. Obstacles preventing this length:

1.	Schools which do have	42%
2.	Financially not feasible	14
3.	Bus schedule too inflexible	14
4.	Teacher resistance	7
5.	District policy	6
6.	Investigating	4
7.	School day would be too long	3
8.	Would need computer to schedule	3
9.	Haven't tried	3
10.	Student body too small	2
11.	School day would be too short	1

12.	Crowded conditions	1
13.	Must follow high school plan	1
14.	Not convinced of validity	1
15.	Planned for next year	1
16.	Too difficult to change now	1
17.	Have converted partially	1

The results of this portion of the questionnaire revealed the following:

1. A majority of the principals feel that course offerings can best be provided in a seven-period day. The remainder were about evenly divided between favoring a six-period day and an indefinite number of modules.

2. Many of the principals in schools presently using a six-period day express a preference for a seven-period day. This partially explains why less than half of the schools are employing what the principal prefers. Also, some of the principals want a modular schedule while only two of the surveyed schools presently use a modular plan.

3. Obstacles that prevent employing the preferred organization are many and varied but the biggest single reason is lack of money.

4. The questionnaire reveals that a majority of the principals favor the use of the same sequence of classes each day. About one-fifth feel a revolving plan has enough advantages not available in the traditional sequence to make it desirous.

5. In regard to the shuffling of classes, the principals are about evenly divided between having each

student meet all his classes every day, and employing some organization whereby students might schedule more classes than meet during any one day. One of the most popular forms of organization is to have the top scholastic per cent of a class meet more classes than the rest of the students. It is interesting to not that approximately twenty per cent of the principals failed to respond to this question.

6. The principals (76%) feel that the best use of study time can be provided by having the students meet with with each teacher long enough during the day for supervised study in each class. The only other proposal that has much support is to schedule selected students for individual study outside of a regular classroom situation.

7. The area that meets with the greatest desire for flexibility is the chance to schedule students in large lecture classes and small discussion groups. Only a few (15%) wanted to retain the class size at about the same for all classes.

8. Only a small percentage of the principals are able to report that they now have the organization they desire in regard to sequence, study time and class size. Obstacles preventing their preferences are again varied. The largest obstacle is the construction of buildings available for use. Lack of evidence supporting the validity of the organization

and teacher resistance are the other two obstacles most frequently cited.

9. A desire for flexibility in the length of the period is indicated. About half feel that the length of the period should depend on the particular subject taught. Many principals indicated that it depends on the individual subject, but then listed a best length for most classes. The 50-54 minute period has the most support with one-fourth indicating this as their preference.

10. Almost one-half (42%) indicate operation with the preferred length of class period, but other obstacles stated reflect why different length classes are not scheduled. Many obstacles are listed but the two most prevalent are the lack of finances and the inflexibility of bus schedules.

The following general conclusions seem justified on the basis of responses to the entire questionnaire:

1. The general comments at the close of the questionnaire reveal considerable interest in discovering ways to make the schedule more flexible.

2. Most principals feel a definite need exists for a homeroom and a majority of the schools surveyed include a homeroom in their schedule.

3. A majority of the principals feel a need for an activity period but many are unable to provide it during the regular school day.

4. An almost unanimous desire is noted for a block-of-time program in the junior high school. This is especially true for a three-period block at the seventh grade level. A declining interest is indicated at the eighth and ninth grade level for a two-period block.

5. The primary interest for flexibility in scheduling centers around being able to provide for large and small group instruction.

6. Reactions are divided and no definite conclusion can be stated concerning the shuffling of classes and whether or not students should be allowed to schedule more classes than meet during the course of any one day.

7. Study time can best be provided by allowing long enough periods for study under each teacher.

8. A moderate desire is indicated for flexibility in the length of classes depending on the particular subject.

9. Although many principals indicate a desire for learning more about flexible type scheduling, there does not seem to be an overwhelming interest in radical departure from established procedures at the present time.

CHAPTER VI

SUMMARY AND CONCLUSIONS

I. SUMMARY

The scheduling of classes has received considerable attention in recent years. Primarily this has been an attempt by educators to provide more than just "lip-service" to the increasingly important concept of meeting individual differences. Administrators are attempting to best meet the interests and needs of junior high school age students through one of the administrative tools at their disposal, the schedule.

This paper has traced the historical development, research, and more recent experimentation in scheduling practices. By investigating the possibilities of a wide range of scheduling patterns along with the advantages, disadvantages, recommendations, and attitudes toward these patterns, the author has established some criteria and guidelines for future scheduling practice.

II. CONCLUSIONS

The following conclusions regarding guidelines for effective scheduling seem consistent with the foregoing research in terms of junior high school scheduling practice.

1. The schedule must meet the needs of the individual school. No "best" schedule exists in general, but rather the best schedule for a particular school is determined by how well it meets the needs of the community, district, administration, staff, and students of that school.

2. A continuous method of evaluation needs to be included in any program that is initiated. An objective analysis of the success of the schedule depends on first establishing the desired results and then having a carefully planned method by which to evaluate its success in relationship to the actual results.

3. A block-of-time program should be included in any type of schedule used. Junior high school age students need to spend an extended period of time under the supervision of one teacher who preferably is trained in individual and group guidance. The block-of-time is especially needed at the seventh grade level and becomes proportionately less important at the eighth and ninth grade level.

4. A homeroom should be provided at each grade level. This may be best incorporated as a lengthened period or incorporated into the block-of-time program. Teacher-pupil guidance, administrative routines, and discussion of student activities are important school matters that require other than regular class time for completion.

5. Adequate provision for exploration needs to be required in junior high school in order that students may make wise decisions in their later choice of elective courses. Further, all youth should have a variety of experiences at the influential early adolescent period.

6. Provision for individual supervised study should be provided between teacher and student during the course of each week, especially in the basic subjects.

7. It is best if each student meets each of his classes every day even though the amount of time in class may vary. Too many students may take advantage of the inherent disadvantages of not meeting each class every day. An exception could be made here for the high scholastic achievers.

8. A plan for individual contracts should be provided to meet the individual needs of all students who for one reason or another do not "fit" into the regular schedule. Such provisions as allowing the student to work as librarian assistant, physical education leader, office worker, or in independent study may better meet the needs of some pupils.

9. One hour per week should be provided for the bulk of the activities program. This allows all students to participate if they desire, but does not disrupt class sessions. All activities that cannot be scheduled in the one hour should remain outside of the regular school day.

An exception may be made when the school has a great percentage of bussing students.

10. Teachers should be scheduled to classes they feel qualified and interested in teaching. Most of us have a better chance of excelling at those things we feel both qualified and interested in doing.

11. In determining the type of schedule to be used, the entire staff should be able to express their views. Involvement by those who are working in a particular environment strengthens the quality of their performance.

12. An opportunity to schedule large-group instruction should be made available for those interested. There are certain advantages to large-group instruction but the schedule is stifled by requiring classes to meet in large-group situations when it is not needed. Thus, the facilities and opportunity to schedule large-group instruction would be beneficial.

13. Class size and length of class meeting should vary according to the nature of the subject. Some classes have different time needs; consequently, the schedule should provide for these varying needs as best possible.

14. The schedule should provide the opportunity for small seminar-type discussion. Again, the opportunity to schedule smaller-group instruction provides a unique opportunity in certain situations without tying the class

to a rigid schedule when the need does not exist.

15. The schedule should meet appropriate minimum standards as designated by state regulations, providing they are updated from time to time.

16. Provisions for ability groups should be made. Some instruction can best be provided by ability grouping. This is true especially when the slower learners would require that the other students go slower or when it would be impossible for the slower group to keep pace.

17. The schedule should make provision for some form of organized physical activity every day.

18. The cost of the scheduling technique must fit into the financial restrictions of the school district.

19. The schedule should allow sufficient time for both individual and group guidance. Guidance is an especially important function of the junior high school. Consequently, any schedule that does not provide for effective guidance situations would not be adequate.

20. Many preparations need initiation prior to adopting much flexibility into the schedule. Such things as team teaching, adapting physical facilities to meet requirements, and experimenting with increasingly flexible schedules need employment.

21. Split-week courses should be used only with other than basic subject areas. This scheduling of courses

allows more time for exploratory experiences but they could inhibit the quality of learning in basic subject matter areas deemed essential for all students.

22. The schedule should be viewed as an instrument which allows students a higher quality of learning and teachers to teach more effectively.

23. Pupils should be scheduled with a variety of students throughout the day as opposed to one exclusive group of students. Interaction with a variety of peers seems more beneficial than grouping the same set of students together all day.

24. The schedule should provide for the equivalent of at least seven periods. With the expanse of knowledge and the variety of experiences that are beneficial to junior high school students, less than a seven-period day does not allow for adequate scheduling.

25. The length of most class periods should be at least fifty minutes. Although research bears the fact that there is little relationship between length of time in class and learning, it would seem best to provide time for study within the normal time allotted to a class.

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APPENDIX A

APPENDIX A

QUESTIONNAIRE

Homeroom

Definition: A short period of time (30 minutes or less)

A. I feel the broad purpose(s) of the homeroom should be to provide time for:

___1. teacher-pupil guidance (individual guidance, parent conference, citizenship discussions, etc.)
___2. planning and discussing student activities
___3. administrative routines (school banking, attendance, etc.)
___4. no valid purpose
___5. other _____

B. Reason(s) we do not provide for homeroom:

___1. does not apply as we do provide for one
___2. its purpose(s) does not justify school time
___3. teacher resistance
___4. financially not feasible
___5. district policy
___6. have incorporated its purpose(s) into the block-of-time program
___7. other_____

C. I feel in regard to the homeroom that:

___1. it is desirable for the purpose(s) that I have indicated
___2. it is not desirable
___3. other _____

If you feel that homeroom is desirable, complete the following

D. I feel that the best length of the homeroom would be:

___1. 0-4 minutes
___2. 5-9 minutes
___3. 10-14 minutes
___4. 15-19 minutes
___5. 20-24 minutes
___6. 25-29 minutes
___7. Other_____

E. I feel the frequency of the homeroom meeting should be:

___1. every day
___2. 4 times a week
___3. 3 times a week
___4. 2 times a week
___5. Once a week
___6. other_____

F. I feel the homeroom can best be placed:

___1. prior to first period but within regular school hours
___2. as lengthened first period
___3. as a separate period immediately following first period
___4. after the last period of the day but within regular school hours
___5. encompassed in the block-of-time program
___6. as an extended period, but considering entire period as homeroom.
___7. other_____

Activity Period

Definition: Provide time during regular school hours for Students to participate in extra-curricular activities.

A. I feel that the purpose(s) of the activity period should be to provide time for:

___1. club meetings
___2. student council meetings
___3. assemblies
___4. some social activities
___5. intramural sports
___6. school publications
___7. offering classes in hobby and leisure time activities.
___8. has no valid purpose
___9. interscholastic athletic practice
___10. other_____

B. Reason(s) we do not provide an activity period:

___1. does not apply as we do provide for one
___2. its purpose(s) does not justify school time
___3. teacher resistance
___4. financially not feasible
___5. not enough time in regular school day
___6. district policy
___7. have gone so long without one it would be difficult to change
___8. other_____

C. I feel in regard to the activity period that:

___1. it is needed for the purpose(s) I have indicated
___2. it is not desirable
___3. other_____

**If you feel that an activity period is needed, complete the following: **

D. I feel the best <u>length</u> of the activity period would be:

___1. under 25 minutes
___2. 26-30 minutes
___3. 31-35 minutes
___4. 36-40 minutes
___5. 41-45 minutes
___6. 46-50 minutes
___7. 51-55 minutes
___8. other_____

E. I feel that the <u>frequency</u> of the activity period should be:

___1. every day
___2. 4 times a week
___3. 3 times a week
___4. 2 times a week
___5. once a week
___6. other_____

F. I feel the activity period would best be placed:

___1. before first period
___2. during the lunch hour
___3. following the last period of the day
___4. variable--arbitrarily set each day or week
___5. on an alternate schedule as needed
___6. other_____

<u>Block-of-Time</u>

Definition: A long period, usually two or more back-to-back "regular" periods in length and taught by the same teacher.

A. I feel the <u>purpose</u> of the block-of-time should be:

___1. to provide each student a longer period of time with one teacher to enhance the guidance program

___2. to provide each student a longer period of time with one teacher so that articulation is made easier for the student
___3. some subjects can best be taught together by one teacher
___4. to provide time for discussion of student's activities
___5. no valid purpose
___6. other_____

B. Reasons we do <u>not</u> provide a block-of-time program:

___1. does not apply as we do provide for one.
___2. its purpose(s) does not warrant the use
___3. teacher resistance
___4. lack of special training for it by staff
___5. difficulty in scheduling it into the total program
___6. have gone so long without it, would be difficult to begin now
___7. district policy
___8. other_____

C. I feel in regard to the block-of-time program that:

___1. it is needed in some or all the junior high grades
___2. it is not needed in any of the junior high grades
___3. other_____

**If you feel that a block-of-time program is needed in some or all of the junior high school grades, please complete the following: **

D. I feel the block-of-time program is needed in the:

___1. seventh grade
___2. eighth grade
___3. ninth grade

E. Keeping in mind what you considered to be the best length for a period, the best length for the block-of-time in the <u>seventh</u> grade would be:

___1. two periods
___2. three periods
___3. four periods
___4. other_____

F. The best length for block-of-time program in the eighth grade would be:

___1. two periods
___2. three periods
___3. four periods
___4. other_____

G. The best length for the block-of-time program in the ninth grade is:

___1. two periods
___2. three periods
___3. four periods
___4. other_____

Number, Nature, and Length of Class Periods

Definition: the number of periods refers only to instructional classes; lunch periods, activity periods, and homeroom should not be included as a separate period.

A. I feel course offerings can best be presented to students in a:

___1. 5 period day
___2. 6 period day
___3. 7 period day
___4. 8 period day
___5. indefinite number of modules (more than eight)
___6. other_____

B. Obstacle(s) that prevent our school from having this organization:

___1. does not apply as we do have this organization
___2. financially not feasible at this time
___3. teacher resistance
___4. district policy
___5. community would not accept
___6. not enough data supporting its validity
___7. our bus schedules would not permit it
___8. other_____

C. Some experimenting has been done with the sequence of periods. I feel that the sequence of periods can best be organized by:

___1. using the same sequence every day
___2. revolving the periods back one every day (123456--234561--345612)
___3. revolving the periods keeping first period constant (123456--134562--145623)
___4. revolving the periods keeping lunch period constant (123456--235461--356412)
___5. revolving the periods keeping last period constant (123456--234516--345126)
___6. other_____

D. Some schools have offered for each student more subjects than meet during the course of any one day. I feel that the best organization would be:

___1. for each student to meet all of his classes every day
___2. for each student to meet all but one of his classes each day
___3. to meet half of his classes on alternating days in a double length period
___4. the top per cent of a class scholastically to meet all but one class each day enabling the best student to take an extra class
___5. other_____

E. Regarding study time in course offerings, I would like to provide:

___1. separate supervised study halls
___2. independent study time for all students outside regular classrom situation but with qualified subject matter teacher as supervisor
___3. independent study time for selected students outside regular classroom situation but with qualified subject matter teacher as supervisor
___4. long enough periods for study time with each teacher that students have during regular school day
___5. other_____

F. Regarding the make-up of class organization, I would like to be able to:

___1. provide for large lecture classes so that the same teacher would not have to go over the same material many times each day
___2. provide for smaller groups of students (10-15) for discussion purposes
___3. provide for about the same size of classes
___4. other_____

G. Obstacle(s) that prevent our school from having class organization of the above nature:

___1. does not apply as we do have this organization
___2. the possible confusion created would outweigh its desired benefits
___3. construction of building would not permit
___4. teacher resistance
___5. district policy
___6. would take too long to schedule
___7. not enough evidence supporting its validity
___8. the change from our present organization would be too great
___9. other_____

H. I feel the length of the individual class period would best be set at:

___1. less than 40 minutes
___2. 40-44 minutes
___3. 45-49 minutes
___4. 50-54 minutes
___5. 55-59 minutes
___6. 60-64 minutes
___7. more than 64 minutes
___8. depends on the particular subject
___9. other_____

I. Obstacle(s) that do not permit us to have this:

___1. does not apply as we do have this length
___2. financially not feasible
___3. would make the school day too long
___4. would make the school day too short
___5. teacher resistance
___6. community would not accept
___7. district policy
___8. bus schedule too inflexible to allow it.
___9. other

Please add below any comments that you feel are pertinent to your thinking with regard to scheduling in general. Thank you.

APPENDIX B

CHART A

Six-Period Day

PERIODS	Monday	Tuesday	Wednesday	Thursday	Friday
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6

CHART B

Even Period Exchange

	Monday	Tuesday	Wednesday	Thursday	Friday
P E R I O D S	1	1	1	1	?
	1	2	2	2	2
	3	3	3	4	3
	4	3	4	4	4
	5	5	6	5	5
	6	6	6	6	5

CHART C

Seven-Period Day

PERIODS	Monday	Tuesday	Wednesday	Thursday	Friday
	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
	4	4	4	4	4
	5	5	5	5	5
	6	6	6	6	6
	7	7	7	7	7

CHART D

Seven-Period Rotation

PERIODS	Monday	Tuesday	Wednesday	Thursday	Friday
	1	2	3	4	5
	2	3	4	5	6
	3	4	5	6	7
	4	5	6	7	1
	5	6	7	1	2
	6	7	1	2	3
	7	1	2	3	4

CHART E

Bellevue Junior High School Schedule

PERIODS	Monday	Tuesday	Wednesday	Thursday	Friday
9:37	1	1	1	1	2
10:41	2	2	2	3	3
11:45	3	3	6	6	6
12:25	4	4	4	4	4
1:05	5	5	5	5	5
2:09	6	7	7	7	7
3:00	8	8	8	8	8

CHART F

Woodruff Junior High School's Schedule

A

M	T	W	Th	F
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6

B

M	T	W	Th	F
6	6	6	6	6
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5

C

M	T	W	Th	F
5	5	5	5	5
6	6	6	6	6
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4

D

M	T	W	Th	F
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3

E

M	T	W	Th	F
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
1	1	1	1	1
2	2	2	2	2

F

M	T	W	Th	F
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
1	1	1	1	1

CHART G

70-Minute Period

Monday	Tuesday	Wednesday	Thursday	Friday
1	6	5	4	3
2	1	6	5	4
3	2	1	6	5
4	3	2	1	6
5	4	3	2	Activity Period

CHART H

Eckstein Junior High School

PERIODS	Monday	Tuesday	Wednesday	Thursday	Friday
	L	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
	4	4	4	4	4
	5	5	5	5	5
	6	6	6	6	6