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ABSTRACT

This booklet helps physical educators and administrators organize physical education time allotment, personnel, and student grouping structures under various organizational patterns. Specific articles dealing with ways in which schools have accommodated innovative patterns were included. Some of the programs dealt with organizational patterns in elementary schools, implementation of student needs in junior high school, nongraded curriculum and modular scheduling, coeducational physical education classes, and physical education through electives. The National Association of Secondary School Principals (NASSP) Model Schools Program for Health, Physical Education, and Recreation is also presented. A bibliography of selected readings is included. (BRB)

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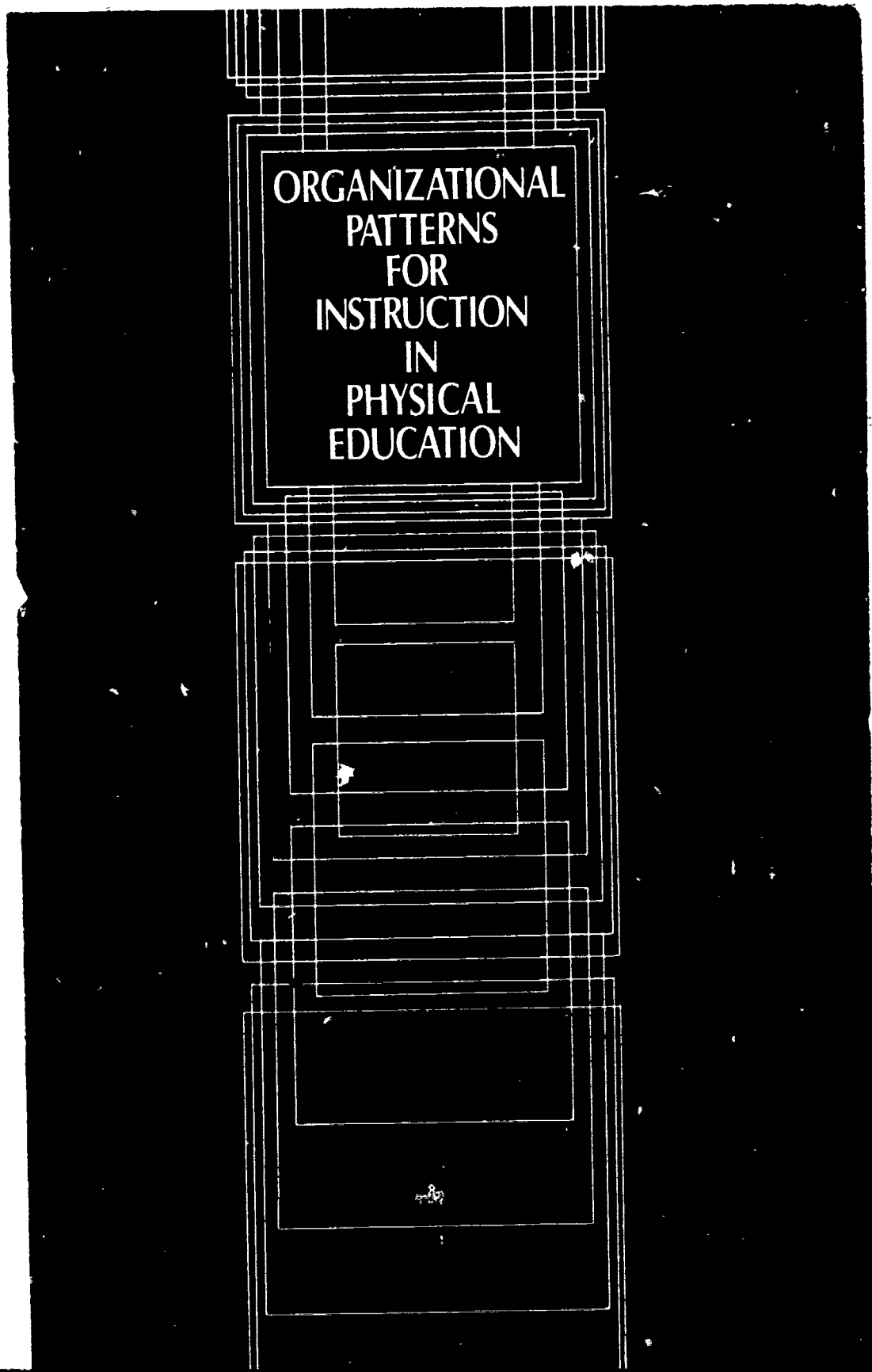

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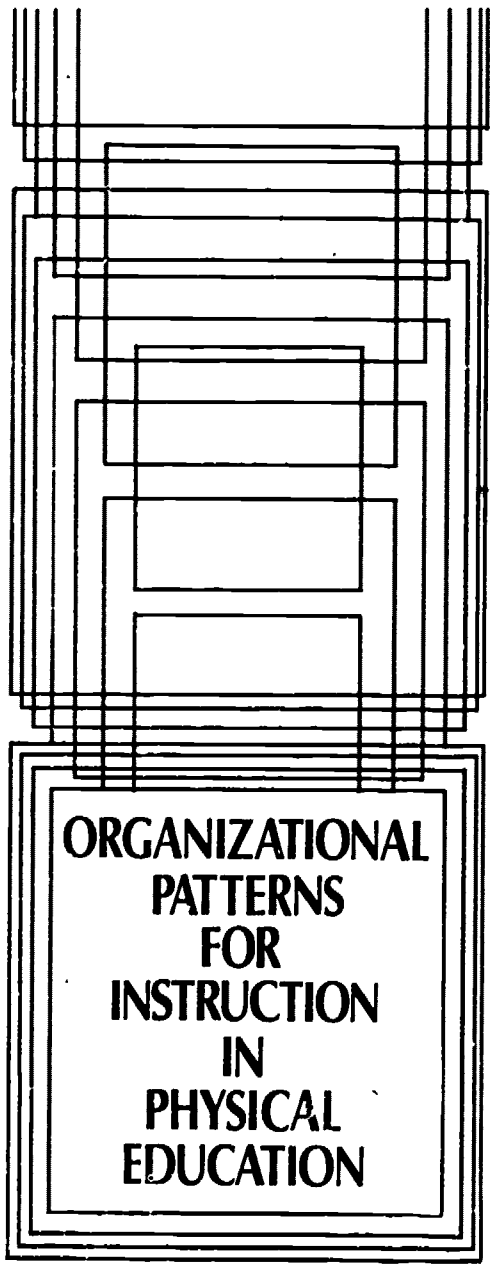

ORGANIZATIONAL PATTERNS FOR INSTRUCTION IN PHYSICAL EDUCATION

AMERICAN ASSOCIATION FOR HEALTH
PHYSICAL EDUCATION AND RECREATION

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ACKNOWLEDGMENTS

The Committee on Organizational Patterns for Physical Education wishes to acknowledge the contributions of the many respondents to the request for innovative program descriptions. The material received is collectively reflected in the body of this booklet.

Special acknowledgment is made to Kent Buikema, Measurement Research Center, Inc., Iowa City, Iowa; David Leslie, Department of Physical Education for Men, University of Iowa, Iowa City; Ronald Peterson, Oak Grove Junior High School, Bloomington, Minnesota; and Barbara J. Ray, Director of Practical Arts, Niles Township High School, East Division, Skokie, Illinois for their additional assistance in providing special information.

This project has been carried out as a function of The American Association for Health, Physical Education, and Recreation, Physical Education Division, Commission for the Improvement of Instruction. The chairmen of this Commission deserve special recognition for their support and counsel to the various committees under its jurisdiction. Virginia Crafts, Department of Physical Education for Women, Illinois State University, Normal, who served as Commission chairman in 1967-1969, and Thomas Evaul, Department of Physical Education, Temple University, Philadelphia, Pennsylvania, who served as Commission chairman in 1969-1970, are to be commended for their leadership roles in assisting the Committee on Organizational Patterns for Physical Education with this project.

A number of physical education teachers who are working with various aspects of the organizational patterns described herein have agreed to act as consultants or resource personnel to assist other interested physical educators to implement innovative programs. It is hoped that more teachers will offer descriptions of their programs and serve in a consultant capacity. Those interested in participating should request a form upon which their program can be explained. These forms and the listing of resource personnel can be obtained by writing to Helen M. Heitmann, School of Physical Education, University of Illinois, Chicago Circle, Chicago.

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INTRODUCTION

Educational innovations are breaking the traditional box surrounding content, time and space allotments, student grouping, and staff utilization. Education in general is calling for more flexibility, relevance, and individuality in the teaching-learning process. A greater emphasis is being placed on the learning characteristics of the students. This recognition of differences among students calls for a more flexible pattern of organization for instruction.

As schools become receptive to reorganization, they must explore the many alternatives available. Each alternative and chosen pattern has implications for the organization of physical education programs.

Scheduling and grouping patterns to which physical education must relate are: large and small group instruction, independent study time, flexibly scheduled graded and nongraded schools, and homogeneous groupings attained on a variety of measures. The use of team teaching, specialists, and paraprofessionals extends the role of the teacher with special implications for physical educators.

To bridge the gap between theory and practice, between the organization of physical education and that of other disciplines, it becomes necessary for the physical educator to explore and establish criteria for effective organization. Administrative decisions may dictate the organizational structure of the school. Teacher decisions will translate the established structure into meaningful utilization of time, personnel, and student grouping.

Physical educators must be ready with patterns of organization which will be compatible with the structure of the school and will contribute effectively to learning in physical education. It is the intent of the Committee on Organizational Patterns to provide information in this booklet that will help physical edu-

cators and administrators organize the physical education time allotment, personnel, and student grouping structure to facilitate the learning process under a variety of organizational patterns.

The scope of this material does not include curriculum content. Although curriculum, time, and student organization are interrelated, only incidental treatment of this interrelationship is given. The subject of effective utilization of time structures, staff, and student groupings is dealt with in terms of process and as mechanical arrangements necessary to improve curriculum and instruction.

Articles explaining ways in which various schools have accommodated innovative patterns are included. Each author has initiated and implemented a physical education program which is compatible with his school's philosophy and structure. These programs utilize scheduling and grouping patterns as a means of implementing relevant and meaningful instruction. The organizational structure of some of the schools described is based on a traditional time pattern. Within this pattern, through grouping procedures, the individual student comes into a more central focus. Other schools have broken from traditional time structures and have implemented programs with differentiated time and grouping arrangements which are compatible with the student's needs in a variety of ways. Not all schools can immediately implement the ideal program utilizing all ideas described herein. However, within the context of the existing school organization, some incorporation of the ideas is possible.

Educators interested in implementing any of the suggested procedures are urged to augment the information contained in this booklet by further readings. A bibliography of selected readings is included to assist in this process.

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CONTENTS

HELEN M. HEITMANN

RATIONALE FOR CHANGE

Young people being educated today will have a life continuing, perhaps, beyond the first quarter of the twenty-first century. What social and individual pressures will be exerted upon them in the years to come? In what ways will each be able to influence the direction of society and his own personal life? What skills and knowledge will he need to assure physical, psychological, and economic security?

The alienation of man from his natural environment and fellow man, the divorcing of his psyche from his physical self, the separation of knowledge from application, and process from procedure all reflect a fragmented education, be it formal or incidental. Education, which should continue for a whole lifetime, has been atomized to the extent that reconstruction of the natural process has become an area of study in itself.

School organization, instructional methods, and curricular offerings have often isolated the student from natural social interaction and thwarted his enthusiasm, inquiry, and creativity. A continuous and self-generating learning process, supported by a foundation of knowledge, should help formal education serve the recipient throughout his life. Teaching for memorization and rote recitation of facts and physical skills, presented in fixed and isolated units, sets the learner up for planned educational obsolescence.

Students, seated in a classroom or being moved in a gymnasium, lose their identity. Teachers often speak of a *class* as being good or bad, bright or dull, disciplined or unruly, without regard for its individual members.

Physical education classes have traditionally absorbed students in great numbers without regard for individual ability, aptitude, interest, or achievement. Time allotments have been insufficient to accommodate the requirements for learning. Teaching methods and learning programs have, usually by necessity, been geared to only a portion of the class and have rarely satisfied the needs of anyone. In many cases, appropriate mechanical functions of the teaching act occurred. Students were given skill demonstration, but they couldn't see it; practice time, but not enough to assure results; correctional instruction, but superficially monitored. Rarely were there the ways and means to provide for individual pursuits of interest. Children's natural urges for movement exploration, play, and skill development were stifled as they waited endlessly for their turn to perform, practice, or receive the teacher's help at that specific teachable moment. Discipline was substituted for creativity, tolerance for enthusiasm.

Skills were rehearsed and games played without regard for the learning process. The teacher thought for the child and ordered every move he made. The knowledge essential for understanding *why* and *how* was kept within the teacher's head. The teacher functioned as a puppeteer pulling strings and the puppet child responded with his mind turned off. When the student graduated, the strings were cut and he found he had insufficient knowledge to continue his physical activity growth. He did not know why he should not put away the play aspect of his childhood life and attend only to his economic and political affairs.

Physical educators can be spared harsh judgment because, given many students and little time, they had to make a choice between providing enough physical activity in class to assure some skill development and reducing activity time to share it with talking time. They usually chose the former. The results are visable now with adults being prey to sedentary living habits and the resultant problems of degenerative aging ailments. Psychological tensions remain debilitating without physical release. Without knowledge of the process for learning motor skills, positive attitude development, and a good movement pattern foundation, one can hardly expect continued interest and participation in physical recreative activities in postschool life.

The plight of physical education in the traditional school, although more serious, was not unique. Students in other subject areas suffered from overcrowding, lack of time, and knowledge explosions. The sixties brought a decade of questioning of the total educative process by scores of educators. Subject matter was reorganized to emphasize structure and process, as well as a relationship to the whole area of human investigation. Of note is the emergence of new math and microchemistry. Physical education has changed its posture from adult oriented and directed activities, to one where the child, with his natural urges for movement, social investigation, and development is in focus. The structural integrity of physical education is being organized in a taxonomy of sequential behavioral goals. Attention is being directed not only to the psychomotor domain, but also to the concomitant cognitive and affective domains which give breadth and wholeness to the instruction.

Recognizing the need for greater student involvement in the learning process, a series of innovative experiments has been undertaken. Early in the

sixties, the rigid schedule which allotted equal time to each subject was seen as restricting individual study, learning patterns, and cohesiveness in the total learning process. The National Association of Secondary School Principals (NASSP) publications, *New Horizons for Secondary School Teachers*[1] and *Images of the Future*[2] were among the early works putting forth new patterns of staff utilization, subject matter organization, and time structures.

The computor has made possible schedules which can accommodate many variables. It can individualize a student's schedule within and among subjects. The criteria for time allotments can be based upon student need and subject matter requirements. Computor generated schedules are costly and complex, but the idea of flexible time and learning designations has clearly made its impact.

A teacher's behavior must take its cue from student needs rather than class needs. Sensitivity to student goals, characteristics, and experiential backgrounds should trigger physical education projects and a learning environment. The physical educator must identify those aspects of the teaching-learning act which will insure student growth, physical, emotional, and intellectual, in all areas of physical education inquiry. Fostering the process of investigation should enhance motivation for learning physical skills. With the process learned, when facts are forgotten, interests and situations changed, the elements of education will remain, and learning need not come to a standstill.

The availability of technology in teaching permits more flexibility in scheduling and organizing procedures. Technology can provide a means of quantifying experience and giving insight into dimensions not realized within the confines of the usual gymnasium walls. As the microscope and laboratory manuals open vistas of comprehension and individualized study in the sciences, the videotape recorder and programmed learning packages can extend the student's awareness of himself in motion. Technological aids and programmed instruction can release the student from the teacher at certain times in the instructional program. However, the teacher adds the human dimension and extends her effectiveness into other learning areas.

On the premise that physical education becomes more relevant and more easily learned when the student can see the process and structure of the subject matter and has the opportunity to be actively involved in the learning environment, it becomes apparent that learning experiences must focus upon the individual student. The administrative means to permit this individualization are available. Planning time allotments around student needs, using appropriate technological and independent study aids, and utilizing trained paraprofessionals as support personnel for the professional staff can eliminate mass instruction directed at a *class*, rather than education given to *individuals*.

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[1] J. Lloyd Trump, *New Horizons for Secondary School Teachers* (Urbana, Commission on the Experimental Study of the Utilization of the Staff in the Secondary School, 1957).

[2] J. Lloyd Trump, "Images of the Future in Improved Staff Utilization," *NASSP Bulletin* 42 (April 1958) pp. 324-29.

However, differentiated scheduling patterns may not be possible or feasible in all schools. Within the traditionally scheduled school, the learning environment can be strengthened by the many ways of individualizing the learning program for each student within a class.

The physical educator must seek all resources and use his imagination constructively to keep pace with the demands of the times. It is within the subject matter of physical education that humanization, socialization, and the understanding of man begin. From initial and continuing movement explorations, an experiential background is developed from which cognitive and affective learning take on meaning. Through physical activity, the psychological tensions of daily living can be released. It is imperative that the physical educator establish organizational patterns of instruction that will facilitate meaningful learning for all and leave no student behind in his total education.

SCHEDULING PATTERNS

Placement of students into classes should reflect more than administrative expedience. Classes should be considered learning groups with students assigned to these groups according to their learning needs. Scheduling students into classes can be accomplished in a variety of ways.

Essentially, there are two types of schedules to be considered. One is the traditional schedule with all classes meeting the same number of minutes each day for the entire semester. The second type is a flexible schedule which can accommodate varying time spans for each subject or learning task each day.

The difference is principally in the method of assigning the allotted time to each subject. Each method can facilitate certain goals. If, for example, a major purpose is to provide each student with more individualized educational opportunities, certain periods of time for small group instruction or individual contact with teachers will be built into student schedules. If a major purpose is to provide more independent study time, certain periods with unassigned locations and varying degrees of contact with teachers will be incorporated into student schedules. If a flexible assignment of time to each subject is not administratively feasible, or the desire to diversify the learning process is not deemed a major educational objective, the school's time schedule can be traditionally constructed. Some individualization of instruction can occur within a traditional schedule through student grouping arrangements and careful organization of the material to be taught.

In the following two sections, traditional and flexible scheduling will be discussed. The writers assume that most physical educators are familiar with

traditional scheduling, thus it is more superficially treated than flexible scheduling. In devoting more space to flexible scheduling, the writers are not necessarily placing a greater value on this method. Whichever method of scheduling is selected, an understanding of the possible consequences it can have on the instruction of physical education should be present.

TRADITIONAL

SCHEDULING. Traditionally, the organization of classes, especially on the secondary level, has been accomplished by assigning a given number of students to a teacher for a fixed period of time in the school day. This scheduling pattern allows each subject an equal amount of time (see Figure 1). Each meeting of a class is allotted the same amount of time regardless of what is to be taught for the lesson. Study time usually occurs during the same hour each day and restricts the study process to the allotted length of the period.

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00 - 8:55	ENGLISH				
9:00 - 9:55	MATHEMATICS				
10:00 - 10:55	STUDY				
11:00 - 11:55	SOCIAL STUDIES				
12:00 - 12:55	LUNCH • HOMEROOM				
1:00 - 1:55	PHYSICAL EDUCATION				
2:00 - 2:55	SCIENCE				
3:00 - 3:55	INDUSTRIAL ARTS				

Figure 1. **STUDENT'S SCHEDULE IN A TRADITIONAL TIME SCHEDULE**

The teacher-pupil ratio is constant for all classes within a subject and is commensurate with the personnel resources of the school. To accommodate the individual learning needs of each student at least two conditions must be present. First, the teacher-pupil ratio must be low enough to allow the teacher to interact with each student, and/or the class members must possess similar learning requirements. Second, the class must meet often enough to allow each student time to practice and master the subject matter.

> The President's Council on Youth Fitness recommends:
>
> Maximum class size not to exceed 35 pupils unless special organization and leadership makes possible the effective handling of larger groups.
>
> Teaching load not to exceed 200 pupils per day, with adjusted work load for those who direct extra-class and complimentary programs.[3]

The size of more heterogeneous classes, or those including students with special learning problems, should be less than the recommended maximum.

Grouping students within a class according to their needs and differentiating the learning tasks with adequate teacher supervision will help to insure a more meaningful learning outcome. Patterns of grouping and organizing instruction described in succeeding pages can be incorporated into traditionally scheduled classes.

Adequate time in the school schedule should be provided for physical education. The President's Council on Youth Fitness suggests:

> For grades 1-6, one period per day, 5 days each week, minimum 30 minutes exclusive of recess and time spent in dressing and showering...for grades 7-12, one standard class period per day, 5 days per week.[4]

Traditional scheduling of classes can provide an effective tool for instruction only if the teacher-pupil ratio, time allowed, and grouping practices permit each student to receive maximum instructional opportunities. If the resources of the school district prohibit the preconditions necessary for individualizing instruction, alternative scheduling patterns should be considered.

FLEXIBLE

SCHEDULING. Currently, instructional objectives are being met in many schools by liberating the traditional time block schedule. Rather than dividing the school day and week into equal time segments and organizing the student body into standard class sizes, the time periods and the composition of classes are being based on the learning requirements of the students, the subject matter to be undertaken, and the method of teaching most appropriate to the learning task.

A flexible schedule permits greater variation in the learning and teaching acts than a traditional time schedule. Degrees of flexibility can be varied in establishing time and grouping patterns. These patterns can range from complicated assignments of students to fixed, but varying, time segments and groups, to

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[3]President's Council on Youth Fitness, *Youth Fitness* (Washington, D C : U.S. Government Printing Office, July 1961), p. 11

[4]*Ibid.*

schedules where student choice and nonassigned time prevail with a minimum of structured class meetings. The degree of flexibility in the time schedule depends upon the basic purposes expressed in the educational goals of the school and the amount of administrative effort that can be expended.

Flexible schedules vary considerably from school to school, but are usually based on short time segments, commonly called modules, varying from 10 to 30 minutes. Various numbers of modules are placed together to provide appropriate lengths of time for instructional purposes. Thus, the total length of time a class would meet could vary from day to day and from subject to subject. The time and organizational pattern established would repeat on a five or six day cycle.

The adoption of flexible scheduling does not guarantee improvement in the educational process. Subjects can be taught traditionally in a fixed time and grouping arrangement within a flexibly scheduled school. However, flexible scheduling can permit the establishment of varying grouping arrangements and a more efficient use of time for different learning situations.

BENEFITS OF FLEXIBLE SCHEDULING. The goal of instruction is to assure that all students learn. Flexible scheduling can provide the means by which individualization of the learning process can occur more easily.

1. Student groups of varying sizes can be scheduled within the same subject or unit.

Students can be grouped according to needs, interests, or method of presentation. When the material to be presented does not require individual interaction, the group may be large. When group or student-teacher interaction is desired, groups small enough to assure adequate interaction are necessary. Also, students may desire to pursue their learning goals independently of other students.

Beginning students, or those with special learning needs, can be assigned to groups small enough to assure teacher guidance and presentation methods compatible with their needs. The distraction factor seems to affect advanced students less at certain times in their practice than it does beginners learning the initial tasks. Thus, class sizes for advanced students could be increased at certain times in the learning process with a diversity of tasks being performed within each class. Beginners, or those learning new skills, would need smaller class sizes with less diversity in the tasks occurring around them. Student motivation and stress would also be factors in determining class size.

2. A system may be developed in which classes vary in length and number of meetings each week.

The length of time for each class meeting may vary among instructional groups, learning tasks, and methods of presentation. The assignment of time to each learning group should be based on research findings which identify factors affecting motor learning. For example, during the initial phases of learning, fatigue sets in earlier than after the task has been learned. If progress toward learning is slow, the student's attention span is reduced. The more advanced student has a better understanding of the movements and a clearer idea of the skill framework

than the beginner. Thus the age and ability of the student and the complexity of the skill could affect the time allotment of each class session. Beginners could be allotted shorter, more distributed sessions, while advanced students could be allotted fewer, but longer and massed learning sessions.

3. Time can be rearranged to make maximum usage of facilities.

Instructional classes can be scheduled back to back. One class may leave the gymnasium as another enters. No facilities need be left vacant while students are dressing. By utilizing the same time allotment per class, about ten classes can be taught each day in the time that seven classes are taught in the traditional schedule.

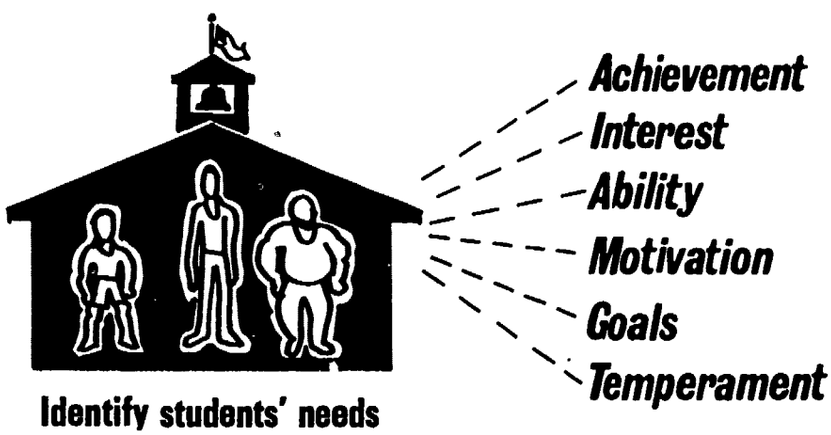
4. Team teaching, and/or differentiated staffing, can be more easily scheduled.

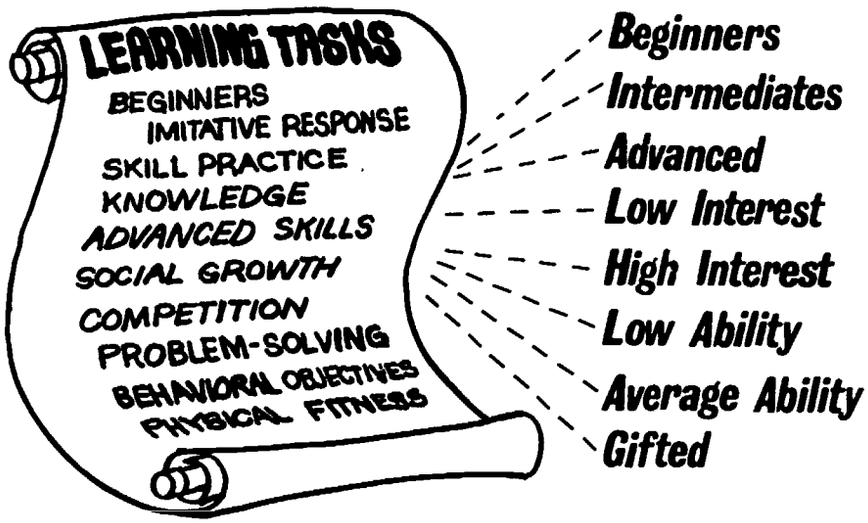
Teachers' schedules may be flexibly arranged to permit them to teach certain groups or segments of a course in which they excel. Time can be provided in the school day to allow for teacher's planning physical education lessons, and conferring or counseling with students.

PROCESS FOR EFFECTIVE UTILIZATION OF FLEXIBLE SCHEDULING. Flexible scheduling can facilitate the individualization of instruction only if the teacher engages in the following preliminary steps.

1. The school population must be analyzed to identify the students' needs. These needs may be categorized by academic and/or physical achievement, ability, interest, motivation, goals, temperament, and learning characteristics.

The physical education department would identify the most desirable factor of commonality for class assignments. This factor may differ for each age group, or activity, or for individual students. It may differ for one student at various times during the year depending upon the improvement and/or goals of the





Identify learning tasks for each group

student. Once the criterion has been established, methods of identifying the students who are to be assigned to these groups must be determined.

For example, using achievement as the criterion, the following process could be employed. The student's past achievement could be used, or pretests could be given in a specific skill or game. This could be arranged for entering students a week prior to the opening of school when many schools engage in student assessment projects in other subjects. Records concerning achievement patterns could be submitted from the elementary school to the secondary school to eliminate extensive testing at this level. Assessments could be made after each skill unit to give guidance for future placement.

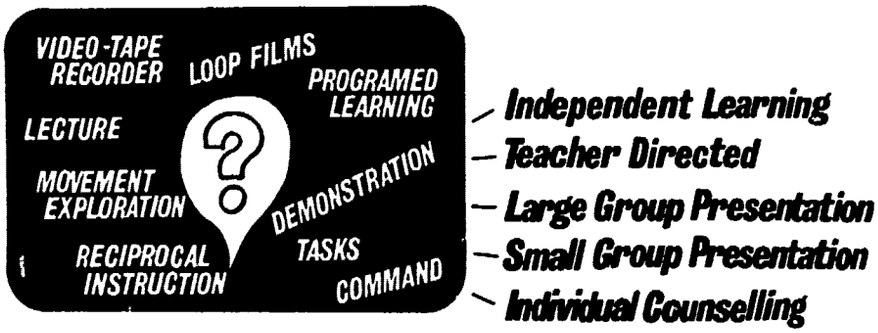
The physical education teacher could then indicate the course level of instruction to which each student should be assigned.

2. The learning tasks that would lead to the desired goal must be determined for each group identified.

Each student possesses certain learning needs which would differentiate the learning program to be designed for him from that designed for others. These learning tasks would involve the depth of subject matter and skill attainment appropriate for the student's level of achievement. He may need certain levels of competition within the class to stimulate interest and continued improvement. Problem-solving may be a task which would stimulate the student. However, the degree and depth may vary among students. Some may need a great deal of skill rehearsal while others may catch on quickly and need a constant flow of new material.

3. The most effective methods of presentation for each specific learning task and group must be determined.

The teacher's presentation of material should be related to the specific learning tasks. Also, students' learning characteristics must be taken into consideration. Some students benefit from demonstration alone, while others need several types of demonstration combined with manual assistance and a variety of audio and visual aids. Some students need skills presented as a whole, while others need attention called to specific parts. The teacher must determine if the student needs a great deal of teacher assistance or if he can, with certain technological aids, tasks cards, or programed learning packages, attain the desired learning goals independently. Other methods of presentation may involve movement exploration with guiding learning cues, command or imitative response methods, or reciprocal learning with a peer. The teacher must decide if the material will be better presented in large groups, or in smaller groups with greater interaction.



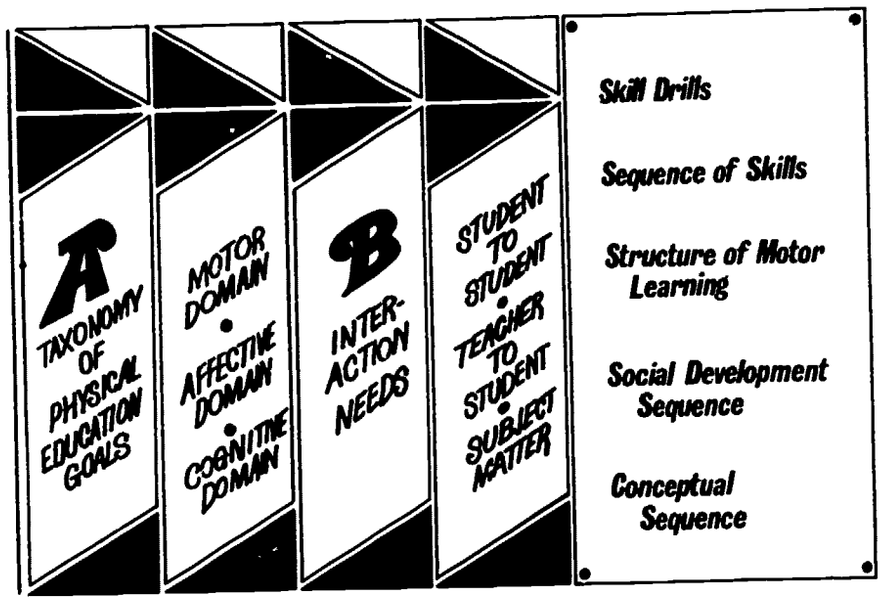
Identify presentation methods

4. Determine effective ways to organize instruction.

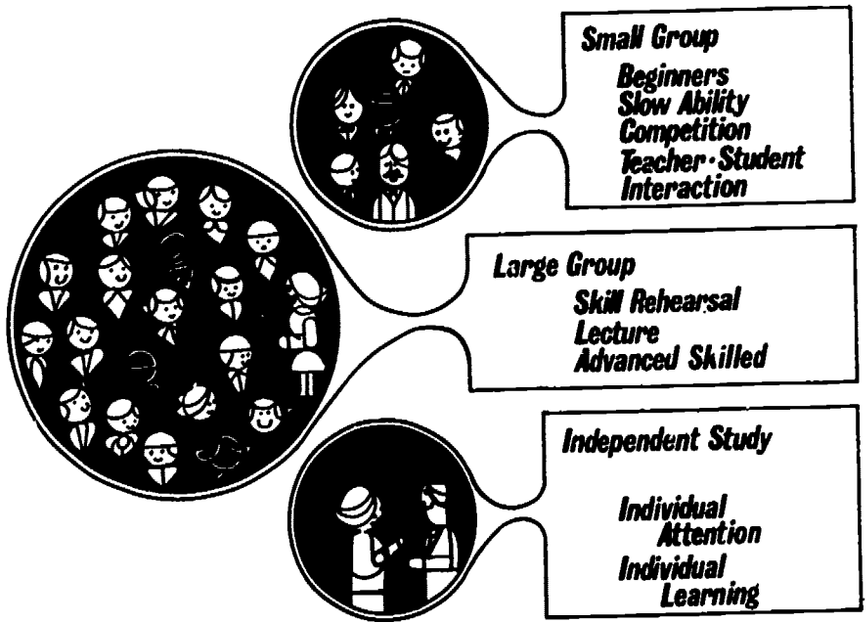
Subject matter can be categorized according to the need for interaction. Each skill unit or area of knowledge should be explored and arranged so that the elements of instruction which are adaptable to a large group presentation can be presented to many students at once. Other elements, which involve individual adjustment, should be identified and presented in small group settings. Students' needs for interaction to attain subject mastery must be identified and judgments made concerning when this should occur in the learning sequence.

5. Class sizes appropriate for each learning group must be decided.

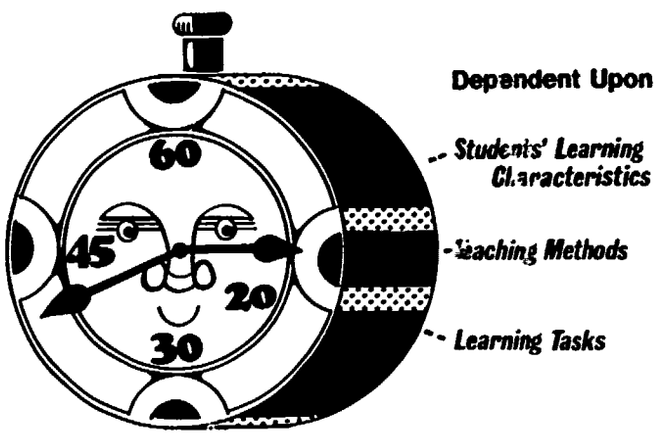
Once grouping patterns, learning tasks, methods of presentation, and the organization of instructional material are determined, the number of students which can best profit from the learning program should be set. The size of the class should assure that the student is the recipient of adequate teacher help, practice, and independent study opportunities. Class size may range from very large to only one student, depending upon the aim of the instruction.



Organization of subject matter



Identify Class Size For Each Learning Group

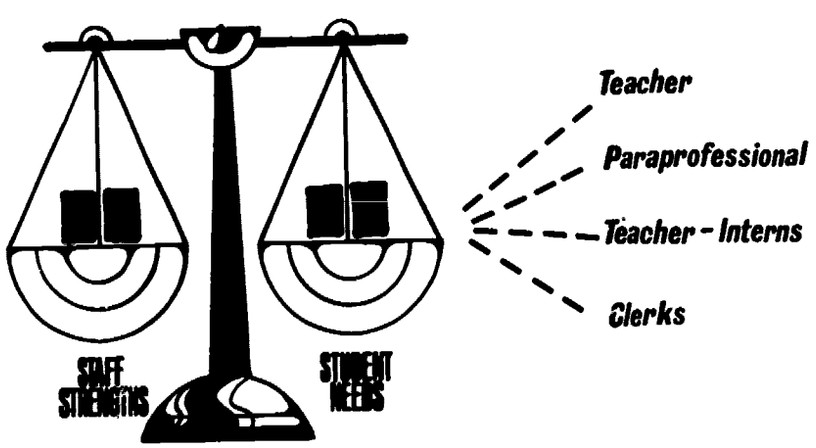


Time Allotments

6. Designation of time allotments compatible with the student's learning characteristics, planned teaching methods, and learning tasks must be made.

When all the preceding variables are assessed for the groups, time commitments can be assigned. The amount of time given to physical education can be arranged so students feel comfortable about the pacing of their learning program. Certain presentations and learning tasks may require longer periods of time than others. Beginners may need shorter periods of time, distributed daily, while advanced students may need longer periods occurring less often.

7. Analyze staffing requirements and existing staff strengths.



Staff Utilization

Teachers vary in their ability to work with students at various skill levels. A teacher's interests and talents may dictate his suitability for teaching particular sports or phases of the instructional program. Certain aspects of the physical education program may be ably handled by technicians and paraprofessionals. These areas should be identified, and total staffing requirements determined.

EXAMPLES OF FLEXIBLE SCHEDULING. Figure 2 represents an example of a flexible modular schedule for a secondary school student where varying amounts of time are needed for different experiences. It also has built-in independent study periods, and periods when the student could be scheduled for remedial work in a small group situation. This schedule is representative of the computor generated type and could vary from one week to the next.

Figure 3 (page 14) shows an overview of class scheduling in a junior high school. This schedule is, of course, hypothetical and does not imply that the time allotments for each grade or class are necessarily ideal for all schools. In each of the grade groups, all students could be scheduled for large group instruction at one time, thus allowing an extra period for small group or special study help.

TIME	M	T	W	Th	F
8:00	English	Indep. Study	English	Social Studies	English
8:30				Indep. Study	
9:00	Indep. Study	Math	Guidance	Math	Social Studies
9:30			Social Studies		
10:00	Math	English	Math	English	
10:30	Indust. Arts	Typing	Indust. Arts	Typing	Math
11:00	Boys' Chorus		Boys' Chorus	Physical Education	
11:30	Indep. Study		English		
12:00	L	U	N	C	H
12:30	Social Studies	Social Studies	Indep. Study	Indep. Study	Guidance
1:00	Physical Education				
1:30		Indust. Arts		Indust. Arts	Physical Education
2:00			Physical Education		
2:30					English
3:00					Boys' Chorus

Figure 2. **A SAMPLE STUDENT MODULAR SCHEDULE FOR ONE WEEK WITH 30 MINUTE MODULES AND MANY VARIABLES (SECONDARY)**

TIME	MOD	M	T	W	Th	F
8:30- 8:50	1	7th L.G. Sec. A-B	7th Sec. A-B Small Groups	7th Sec. A-B Small Groups	7th Sec. A-B Small Groups	7th Sec. A-B Small Groups
8:50- 9:10	2	7th L.G. Sec. C-D				
9:10- 9:30	3	Open	7th Sec. C-D Small Groups	7th Sec. C-D	7th Sec. C Indep. Study	7th Sec. D Indep. Study
9:30- 9:50	4	Lab.				
9:50-10:10	5				Open Lab	Open Lab
10:10-10:30	6	6th L.G. Sec. A-B	6th Sec. A-B Small Groups	6th Sec. A-B Small Groups	6th Sec. A-B Small Groups	6th Sec. A-B Sm. Grs.
10:30-10:50	7	6th L.G. Sec. C-D				
10:50-11:10	8	Open Sec. C-D Lab.	6th Sec. C-D Small Groups	6th Sec. C-D Small Groups	6th Sec. C-D Small Groups	6th Small Groups
11:10-11:30	9					
11:30-11:50	10	Adapted P.E.L.G.	Adapted P.E. Small Groups	Adapted Ind. St.	Adapted P.E. Small Groups	Adapted P.E. Small Groups
11:50-12:10	11					
12:10-12:30	12	OPEN LABORATORY				
12:30-12:50	13	8th Sec. A-B Large Group	8th Sec. A-B Indep. Study	8th Sec. A-B Small Groups	8th Sec. A-B Small Groups	8th Sec. A-B Small Groups
12:50- 1:10	14					
1:10- 1:30	15	8th Sec. C-D Large Group	8th Sec. C-D Indep. Study	8th Sec. C-D Small Group	8th Sec. C-D Small Group	8th Sec. C-D Indep. Study
1:30- 1:50	16					
1:50- 2:10	17					
2:10- 2:30	18					
2:30- 2:50	19	OPEN LABORATORY (Conferences, remedial help, practice)				
2:50- 3:10	20					

Figure 3. **SAMPLE JUNIOR HIGH SCHOOL PHYSICAL EDUCATION MODULAR SCHEDULE**

6th grade Sections A,B,C,D ***Grouped according to needs***

7th grade Sections A,B ***Average ability***
Sections C,D ***High interest and ability; self-motivated; beginning independent study.***

8th grade Sections A,B ***Average ability; beginning independent study***
Sections C,D ***More highly skilled and motivated***

PROBLEMS OF FLEXIBLE SCHEDULING. Problems which inhibit the effective use of flexible scheduling are neither unique to physical education, nor are they necessarily disadvantages.

1. Some teachers are neither educated in, nor experienced with, this concept, and others have been uncomfortable in the situation or unwilling to participate.

2. Some state laws and local regulations require a daily period of physical education.

3. Locker rooms and gymnasiums which have been designed and outfitted for a traditional peak student load may require revisions before the program can be completely operative.

4. If the student's schedule calls for longer, less frequent meetings, absences cause more detriment to the learning process.

5. Staffing requirements may be more than those traditionally allotted to physical education.

6. A period of acclimation, organization, and public relations must be undertaken before the program can be implemented successfully. This period should extend for at least two years before the program is inaugurated. Teachers, students, and parents must be fully ready for the transition.

7. Identification of various learning groups and the establishment of a differentiated learning process can take more time and effort than grouping students traditionally by year in school.

8. Not all students feel secure in, or can profit from, unscheduled class time. Special counseling and supervision of these students is needed.

ORGANIZATION FOR INSTRUCTION

The material to be learned can be organized into various presentation categories depending upon the nature of the material. Some phases of instruction can be adapted to large or small groups, independent study, or laboratory practice. Organizing instruction into these phases should make more efficient use of scheduled time. By merely reorganizing content and presentation methods, more time is allowed for individualizing the instruction.

These four phases, large group instruction, small group instruction, independent study, and laboratory practice, may use differing proportions of time and class size depending on the nature of the material to be learned, and the needs and capabilities of the students. For instance, the less skilled could spend more time in small groups where direct teacher assistance can be received. The more highly skilled, and those with more self-motivation, could spend less time in small groups and more time in independent study. Although the allotment of time may vary for each instructional phase, each student should experience all phases according to his needs and capabilities.

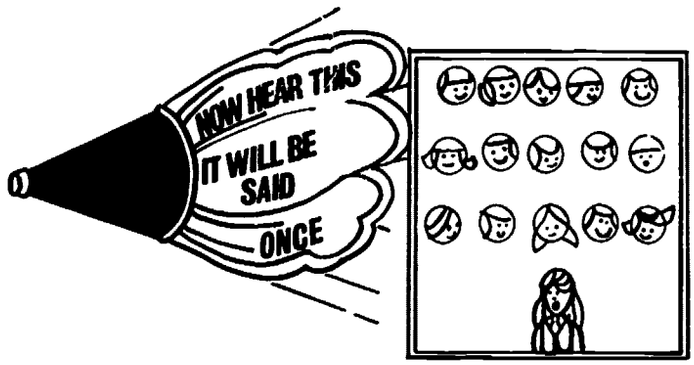
The following sections include the advantages, purposes, suggested activities, and operational considerations for establishing large group instruction, small group instruction, independent study, and laboratory practice.

LARGE GROUP INSTRUCTION

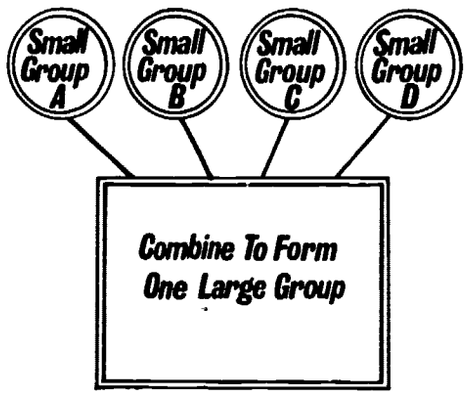
ADVANTAGES. 1. Material which does not require individual time for interaction can be presented to a large class (several small classes combined) at one time.

2. It releases time for both students and teachers within the schedule. By presenting certain material once, many hours can be saved in the week which can be used for more direct student-teacher relationships.

3. It releases other teachers to prepare for succeeding lessons while one teacher is teaching several classes.



Material which does not require individual student time for learning can be presented to many students in large group instruction



4 teachers x 40 min. each = 160 min. of instructional time

1 teacher x 40 min. = gains of 120 min. of instructional time

This large group arrangement "buys" time for other techniques and student-teacher interaction.

PURPOSES[5]	SUGGESTED ACTIVITIES
To introduce knowledge and ideas	*Skill demonstration, exercises, mimetic practice* *Orientation; history, prevalence of the activity, values, rules, strategy* *Analysis of movement* *Health or physiology of exercise*
To broaden awareness of the field of physical education	*Sports and activities not in the activity curriculum (boating, angling, skiing, camping)*
To motivate students	*Material designed to arouse the student's interest in the unit*
To interweave knowledge with other disciplines	*Physics: Trajectory, force, direction, leverage involved in propelling objects* *Social Studies: Sports of other cultures and countries, economic effects on sport participation, community values enhanced through sport and recreation programs* *Biological Sciences. Effects of exercise on the body, maturation influences on movement learning* *Art, Music, Humanities: Expression of art forms through movement, influence of sports and dance in art, rhythmic analysis of movement, stylized movement patterns in various cultures*
To evaluate learning and interest development	*Written tests, opinionnaires, inventories, skill tests*

OPERATIONAL CONSIDERATIONS. 1. If students are to be inactive, 10 to 30 minutes are all that should be spent in lecturing. The time length should be determined by the students' attention span and the nature of the material.

2. Reinforcement and technical aids should augment lecture sessions.

3. Concepts should be presented in accordance with the group's maturation and past experience.

4. Evaluation of the lesson's pace, content, and effectiveness should be made periodically.

[5]Purposes adapted from Donald Manlove, and David Beggs III, *Flexible Scheduling Using Indiana-S-Model* (Bloomington: Indiana University Press, 1965).

RESOURCE

MATERIAL. 1. Audio and visual material should be effectively prepared and presented to enhance the learning process.

2. Specialists and resource personnel can be utilized for improving demonstrations or augmenting the teacher's knowledge.

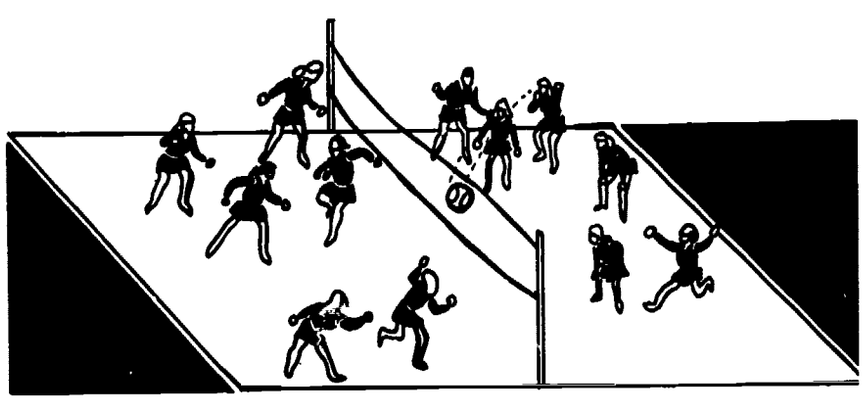
SMALL GROUP INSTRUCTION

ADVANTAGES. 1. A small group situation provides greater opportunities for students to actively participate in learning.

2. It provides small groups with similar learning characteristics or interests to which the teacher can more easily relate learning tasks and teaching styles.

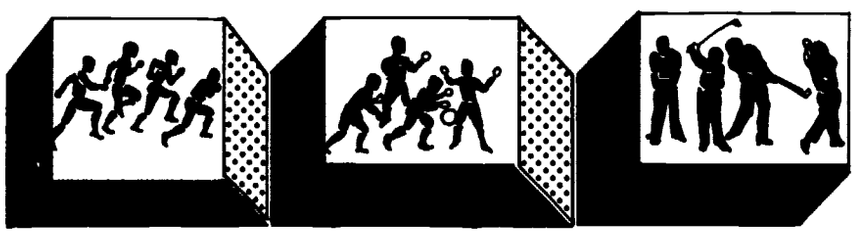
3. It allows for student interaction with the teacher or with classmates.

PURPOSES	SUGGESTED ACTIVITIES
To provide for human interaction	*Team play, skill drills, reciprocal learning*
To investigate problem areas	*Analysis of winning and losing* *Team and individual strategy development* *Movement tasks*



Small Group Instruction

Allows for student participation in learning, student interaction with other classmates, and teacher assistance in the class setting.



Small Group Instruction

Provides small groups with similar learning characteristics or interests to which the teacher can more easily relate learning tasks and teaching styles.

PURPOSES	SUGGESTED ACTIVITIES
To evaluate ideas and skills	*Variation of playing roles and techniques* *Skill and physical fitness tests* *Tournaments*
To clarify content and understandings	*Discussion interaction between teachers and students* *Rules, strategy, techniques practice and analysis*
To share experiences	*Appreciation of skill and strategy* *Team membership*
To receive specific help in learning	*Teacher diagnosis and assistance in the learning process*
To assume leadership roles	*Utilization of captains, officials, and leaders* *Student follow-through on assigned tasks*

OPERATIONAL CONSIDERATIONS. 1. The size of the group should be small enough to allow adequate student and student-teacher interaction.

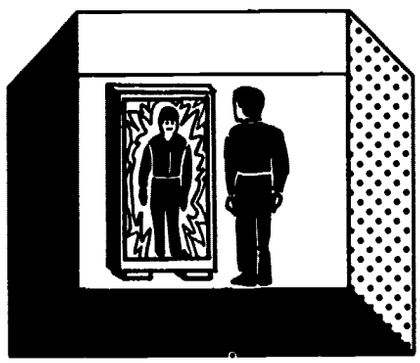
2. Group size should be dependent upon the nature of the learners and the task to be accomplished.

3. Groups should be equated for effective competition.

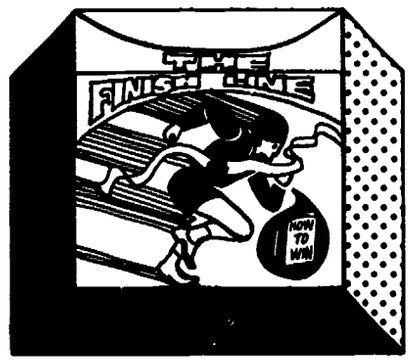
4. Time devoted to small group instruction should be commensurate with the attention span of the group and nature of the subject matter.

INDEPENDENT STUDY

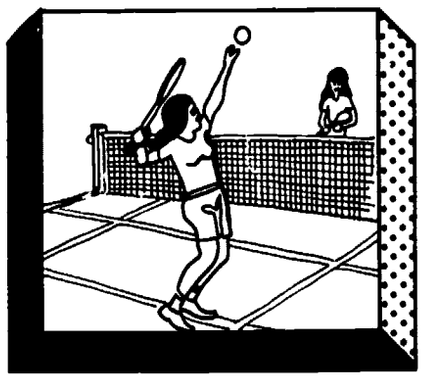
Helps student accept responsibility for his own learning



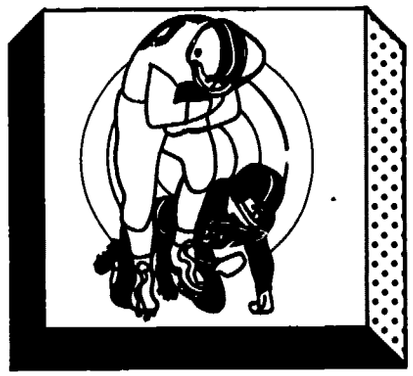
Allows for self-evaluation



Improves research skills



Contributes to self-motivation



Learns process to carry on motor learning in post school years

INDEPENDENT STUDY

ADVANTAGES. 1. This instills appreciation for, and interest in, self-evaluation.

2. It develops self-motivation.

3. It assists students in accepting the responsibility for their own learning.

4. It helps to improve research techniques.

5. It provides the process and skills to carry on motor learning in post school life.

PURPOSES	SUGGESTED ACTIVITIES
To develop skill and physical fitness	*Independent practice of sport, dance, recreational, or physical fitness activities*
To assimilate theory	*Academic research into desired units*
To reinforce learning	*Skill practice, analysis and correction of movement errors* *Self-evaluation* *Attitude development*
To broaden awareness and understanding of human movement	*Movement exploration tasks*

OPERATIONAL CONSIDERATIONS. 1. Time allotments are dependent upon the difficulty of the task, the ability of the student, and facilities needed for the independent study project. The more motivated and able students are capable of longer and more complex units.

2. Facilities such as the resource learning laboratory, gymnasium, and playing fields should be available for independent study. Also, community resources such as bowling alleys, golf courses, and ski slopes should not be overlooked.

3. The student undertaking an independent study project often signs a contract which outlines the process of study, objectives, desired outcomes, time involved, and evaluation techniques.

RESOURCES. Resource materials may include books, learning activity packages (programmed learning materials), resource personnel, and audio-visual aids (8mm cartridge films, movies, slides, loop films, pictures, videotape recorders and transparencies).

TEACHER'S RESPONSIBILITIES. (Projects should evolve out of the student's interest and inquiry desires.) It is the teacher's responsibility to:

1. Identify learning sequences or structures of activity appropriate for the student's age and ability
2. Provide resource material
3. Provide for safety in participation
4. Establish liaison between community and school if community facilities are to be used
5. Construct goals and objectives with paraprofessionals if such supportive staff are to be utilized
6. Be available for student conferences on a regular and frequent basis
7. Establish communications with students' homes concerning goals and desired outcomes if the projects are to be carried on outside the school's facilities and/or immediate supervision.

STUDENT'S RESPONSIBILITIES. It is the student's responsibility to:

1. Confer with the teacher at regular and frequent intervals
2. Proportion time for regular and sequential practice
3. Follow instructions agreed upon in the contract for sequence, duration of activity, safety factors, and evaluation.

OPEN LABORATORY PRACTICE

ADVANTAGES. 1. Open laboratory practice allows students to practice skills or to participate in dual or small team activities beyond the structured learning experiences.

2. It allows a time for students to receive individual help beyond what can be offered in the group situation.

3. It supplements learning opportunities.

SUGGESTED ACTIVITIES. 1. Additional learning projects designed to enrich the learning process should be used.

2. Informal practice or recreational opportunities should be available at various times.

OPERATIONAL CONSIDERATIONS. 1. Certain stations should be set aside at given periods so that students can come to the gymnasium during their free, independent, or unstructured learning time.

2. Attendance in open laboratory periods should be voluntary and need not be on a regular basis.

3. The student should identify the activity in which he desires to engage.

4. If a number of students wish to engage in a variety of activities in one station, provisions must be made to provide maximum safety and supervision and a minimum of confusion.

5. Assistance should be available to the student should he desire it.

6. Controls on the use of equipment, its distribution, and collection must be arranged.

7. Occasional free play opportunities can be provided for the enjoyment of the activities.

8. This period should not be viewed as an extra practice period for varsity athletes. All students should have an equal opportunity to utilize this laboratory experience.

EXAMPLES OF SCHEDULING

GROUPS FOR INSTRUCTION. Figure 4 (page 24) shows some basic criteria that can be used in establishing time allotments for learning groups. Each group has an equal amount of time for physical education, but the allotment of it, and the types of instruction each group would receive, depend upon the students' age, maturity, ability, motivation, and interest. All groups would have the four types of instruction; however, the amount of time spent in each type could vary according to the needs of each group. Each phase of instruction can accommodate physical as well as verbal presentations or interactions.

Using the same student's schedule which is represented in Figure 2 (page 13) Figure 5 (page 25) suggests what the student might do in his assigned periods of physical education and one of his independent study periods.

GROUPING STUDENTS FOR INSTRUCTION

The quest for teachable groups is not new. For over a century it has taken many directions based on many theories and resulting in diverse practices. These have ranged from informal groupings within the heterogeneous classroom, to formal homogeneous groupings resulting in the formation of classes respecting students' needs and interests.

A statement prepared by the Committee on Exercise and Physical Fitness of the American Medical Association indicates the reasons for classification of students for physical education as:

1. To safeguard the health of the participant
2. To group pupils for effective learning
3. To equalize competitive conditions
4. To facilitate progress and achievement[6]

It should be recognized that:

1. Environments are structured on specific, but flexible numbers.
2. Interaction between teachers and students can influence learning.
3. Pupils have individual styles of learning.
4. Groupings can respect special purposes of instruction.

Placing children into specific operating bodies can improve the learning environment, but can be a complex process.

Group	No. of 20 min. mods.	M	T	W	Th	F
A	1	Large-Group	Dress (10 min.)	Dress	Dress	Dress 40 min.
	2		40 min. Small Gr.	40 min Small Gr.	40 min. Small Gr	Indep Study
	3		Dress	Dress	Dress	Dress
B	1	Large-Group	Dress (10 min.)	Dress	Dress	
	2		60 min. Small-Group	60 min. Small-Group	60 min. Indep. Study	Free
	3		Dress (10 min)	Dress	Dress	
	4					
C	1		Dress (10 min.)	Dress	Dress	
	2	Large-Group	60 min Small-Group	60 min. Indep. Study	60 min. Indep Study	Free
	3		Dress (10 min.)	Dress	Dress	
	4					

Figure 4. **DIFFERENTIATED TIME ALLOTMENTS FOR VARIOUS GROUPS**

***Group A** = Freshmen or beginning students*
***Group B** = Sophomores or average ability students*
***Group C** = Juniors and seniors or highly skilled students*
Students can supplement the assig[illegible] physical education periods with additional practice during their unstructured time.

[6] "Classification of Students for Physical Education," *JOHPER* 38 (Feb. 1967), pp 16-18.

Time		T	W	Th	F
8:00					
8:30					
9:00					
9:30					
10:00					
10:30					
11:00				Small group skill tests. instruction, play	
11:30					
12:00					
12:30				Indep. Study Work on Tennis Serve	
1:00	Large-Gr. Tennis demon. film. Condition-in activ.				
1:30					Small group instruction, Tournaments conditioning
2:00					
2:30			Small group instruction, Tennis drill		
3:00					

Figure 5. **A SAMPLE STUDENT PHYSICAL EDUCATION ACTIVITY SCHEDULE UNDER A 30 MINUTE MODULAR SCHEDULE**

METHODS OF GROUPING

IN PHYSICAL EDUCATION. Assignment of students to groups for learning purposes should be flexible. One phase of learning may be facilitated in one group environment, while another learning task may be learned more efficiently in another group, based on a different criterion. A list of grouping criteria could be as extensive as a list of learning goals. Once the teacher has identified the elements of commonality which would facilitate the learning process, group assignments can be made.

The following grouping criteria are offered as possible ways of identifying similarities among students which may facilitate the learning process. Each is only an administrative means to individualize instruction within a class or between classes. Each grouping has implications for the style of teaching employed and the design of the learning program.

Most common among grouping practices is the assignment of students to classes according to their grade in school.

GRADE LEVEL GROUPINGS. This type can be effective if the students are helped to learn the subject matter each year so a great diversity in achievement does not occur. General age characteristics are usually similar within each grade level. This

can allow for sequence and continuity in curricular offerings. The following methods of grouping can occur within the grade level grouping arrangement, or be independent of grade placement.

ANTHROPOMETRIC-CHRONOLOGICAL GROUPINGS. Height, age, and weight exponent systems can be useful in junior and senior high schools in establishing an anthropometric-chronological group. In some cases this is done within an age or grade range, while at other times it may stretch across grade or age lines.

SOCIAL GROUPINGS. Coeducational classes can accommodate specific student needs. At other times, groupings based on sex might be more appropriate. Friendship groupings might lessen personal conflicts within a learning group.

ABILITY GROUPINGS. These can be arranged using a variety of measures. Motor ability tests can be used to form ability groups for certain types of activities. Ability groups can also be formed by a track system whereby a student would be evaluated in various areas and then placed in a vertical or horizontal track of activities designed to accommodate his level of ability. As the student improves in ability areas, he could finish one level of performance and move to another.

INTEREST GROUPINGS. The student can be placed in an activity in which he has expressed a specific interest. Election of activities can help to increase motivation for learning the specific activity.

ACHIEVEMENT GROUPINGS. Skill tests and previous experience can establish a basis for grouping. Interest is growing in developing specific behavioral objectives that can be used as tools to measure psychomotor performance. When a student's performance is measured against a continuum of skills in an area, a performance grid can be created and the student placed in a specific group according to his achievement.

PHYSICAL CAPACITY GROUPINGS. Groupings based on physical limitations are beneficial for those with reduced capacity due to physical ailments and/or handicaps. Within the range of physiological normalcy, students differ in their tolerance for activity. Some students exhibit a greater vital capacity than do others. Grouping students according to physical capacity could facilitate differentiating needs for duration and type of activity.

TEMPERAMENT GROUPINGS. The variance in innate styles of temperament can be respected. Some students respond more favorably to vigorous activity and teaching styles that accommodate a fast pace. Students who innately move slowly can become frustrated when required to move at a constant vigorous pace of activity. The duration of activity and inactivity, and the pace of the learning program should be congruent with the temperamentally determined activity pattern.

LEARNING CHARACTERISTIC GROUPINGS. Some students may learn more effectively by visual stimuli, others by kinesiological or cognitive stimulation. Those with motor learning problems could be placed in remedial classes. Students whose motor aptitude is highly developed could profit from being in groups where presentation methods and subject matter content could move them rapidly to high levels of skill.

NONGRADED SCHOOL

PATTERN OF GROUPING. The most flexibility in grouping is occurring in the nongraded school. This allows for maximum individualization of instructional opportunities for each student. These schools take as their fundamental thesis the need for continuity in individual pupil progress. Each student operates within an age level range and can proceed through school at his own rate. Within each age level, great variations in needs and abilities will occur. Without grade labels, learning can be structured in a vertical, dynamic fashion for each student from entrance in school to graduation.

The nongraded school diagnoses each student initially on the basis of terminal behavioral objectives in major areas of movement. Also, the affective area is evaluated for each student. After a careful study of the diagnostic results, the teachers prescribe the learning program for each student. Groups are formed not only for the student's subject matter mastery, but also for his social and emotional growth. The student begins to study a continuum of skills deemed appropriate for his specific learning group. Usually, a student is assigned to several different groups and to several teachers.

The students are generally involved in units of study which may last several weeks. Some students may progress through a unit more rapidly than others. In this case, those who succeed in completing the learning tasks could move to another group for work in a different area of need. Those who experience difficulty in mastering one task may remain with it longer or leave that area of study and return to it at another time. The educational pattern is readjusted as the need occurs.

Behavioral objectives, and specific evaluative criteria, can be used to mark the student's progress in several areas of motor performance. These areas were defined by the University Laboratory School in Los Angeles, California, as locomotion, body coordination, sensory-motor, balance, eye-hand skills, eye-foot skills, and rhythm or dance.

Examples of terminal behavioral objectives used by the University Laboratory School for eleven and twelve-year-olds in the area of balance could include the ability to walk in a variety of ways on a two inch balance beam, perform a 360 and a 180 degree turn successfully on the beam, perform these skills while the beam is inclined 3 feet; and on stilts, walk 50 yards in 1½ minutes. A roller skating unit could have the ability to skate backwards for 50 feet in less than 12 seconds as a terminal objective for the middle elementary school student.

A developmental hierarchy of behavioral objectives could be illustrated in the following manner. For children three to six years of age, who are

tested during their fifth or sixth year, a continuum of objectives ranging from a low level, to a minimal level, to a high level could be as illustrated below.

AREA OF VISUAL TRACKING[7]

Level	*Behavioral Objective*
Low	Can stop a moving 8" ball that is rolled toward him
Minimal	Can catch an 8" ball thrown on one bounce from a distance of 15 feet
High	Can catch an 8" ball when thrown from a distance of 15 feet with no bounce

AREA OF BALANCE[8]

Level	*Behavioral Objective*
Low	Can balance on one foot of own choice for a count of 10
Minimal	Can stand on a balance board with a 4" x 4" base on one foot for a count of 5
High	Can walk forward on a 2" balance beam 12 feet long without falling off

As students are tested, they may be placed in groups where attention can be paid to their level of accomplishment. At some times they may be in a high group for one skill and in a low group for another skill.

Each area of study must be carefully structured, both vertically and horizontally, to allow for progress. The steps between terminal behavioral objectives should be attainable so successful feedback can be felt by the child to assure continued interest. If the steps are too large, and progression to the next level is slow, the child will experience frustration and turn away from the task.

ADVANTAGES OF NONGRADED LEARNING PATTERNS. The advantages of a nongraded program can be numerous if the program is well planned.

1. A student may work at three or four levels in several subjects, or areas within a subject.

[7]Developed and used by the University Laboratory School, Los Angeles, California

[8]*Ibid.*

Children with similar abilities can work toward similar objectives, thus peer stimulation and social interaction can contribute to the total development of the child. With grouping based on ability and achievement, children of varying ages can work side by side. Thus, in some cases an opportunity is present for peer teaching. Rarely will a child be at the same level of accomplishment in all areas of study, and even within an area of study, divergent progress can be noted.

2. Content areas are viewed as appropriate over a long period of time.

If progress toward the next goal is slow, the child could remain with the task, or if readiness is detering the learning process, he may return to the subject matter later on. There is no compulsion to move on with the class and miss a portion of the foundation skills. The pressure of "keeping up with the class" is reduced so each step in the learning process can be mastered without the stigma of failing to do so by a certain time.

3. A student's progress is determined by comparing his accomplishment to his ability.

Evaluation for each child is done on a unit basis whereby the teacher pretests and posttests the children on observable behavior assessing accomplishment and progress toward the specific behavioral objective being taught. The child is, therefore, assessed according to his own progress rather than the progress and accomplishments of other students.

4. The more gifted student can move ahead without detriment to the slower student.

Those children who can quickly accomplish their behavioral objectives begin the next set of objectives. Rather than setting the learning pace to accommodate the average child, the gifted can relate to the subject matter at their own pace.

5. There is flexibility in the movement of children from one level to another.

The pace of progress may be in spurts. Thus the child may move from one level group to another. This mobility may be to more advanced groups or to less advanced ones as the child's progress dictates. If a child can not progress properly in his assigned group, he can be placed in one in which he can succeed.

6. Economy of teaching time can be gained when a group can be formed in which the individual difference range has a tendency to be small.

When attention can be paid to the specific needs of the individual, the learning program becomes more relevant. The teacher can direct more concentrated effort on the group's common learning problems.

7. The reporting of student progress is usually in narrative form, rather than a single grade.

Since the progress of a child is viewed as multidimensional, a single average grade becomes inappropriate. Parent-teacher conferences allow for the reporting of progress in a multitude of growth areas. As the strengths and weaknesses of the child are reported, the parent can assist in strengthening the home environment to parallel school effort.

PROBLEMS OF THE NONGRADED LEARNING PATTERNS. If time and facilities are unavailable, a nongraded program can present problems.

1. For appropriate placement of each student, complete diagnostic procedures must be undertaken. This can be time consuming if resources are scarce.
2. Record keeping is a time consuming task.
3. Evaluation of each child in written form at the conclusion of a unit takes more time than assessing progress with only a letter grade.
4. Coordination planning and team teacher conferences occur more often than when one teacher is responsible for a unit. This places more demands on teacher time.

STAFF UTILIZATION

Proper staff utilization is a key to quality education. The duties and responsibilities of teachers today are more complex than those of a relatively short time ago. The increased number of students, the greater diversity in educational goals, and the growing body of knowledge necessitates a more effective staffing pattern. Rarely can one teacher fulfill all the needs of her students and assure maximum learning in her classes.

Teachers need time in the school schedule to develop sound instructional programs, and use the multitude of technical aids which can augment the learning process. Not all teachers can effectively function, nor should they need to function, in all the roles traditionally demanded of them. The physical education teacher should view himself as the diagnoser of student needs and prescriber of learning experiences. He establishes evaluation procedures and methods which will give meaningful feedback to the student and thus be the beginning point for new learning. His effectiveness can be extended by lay personnel who have been instructed in support roles which will relieve the teacher of the noninstructional duties, or duties of a monitoring nature. By carefully assessing the guidance roles in the learning process, and deploying staff according to needs and capabilities, more individualization of instruction can occur.

PRIMARY GRADES

STAFFING PATTERNS. There are generally four methods used in assigning the responsibility of teaching physical education to the primary grades, with variations within each method. The one preferred by most authors on the subject is the employment of a physical education specialist to handle virtually

all phases of the physical education program. The second preference is the employment of a rotating specialist, sometimes called a curriculum associate, to assist classroom teachers by team teaching with them at least once a week, and by providing leadership in program development, equipment and facility planning, and in-service assistance. A third approach is through the exchanging of assignments, whereby one teacher will teach physical education for another teacher, who in turn, will instruct in another subject. A different form of this pattern, called "team teaching" by some, requires one teacher to learn and teach dance, for example, another tumbling, and a third ball skills. The extent of team teaching may vary from two teachers exchanging classrooms for one period to a pooling of all teachers into a single unified effort. This pattern may have the effect of fragmenting learning areas in physical education, and result in a recreational experience instead of physical education. The fourth and least effective approach is the self-contained classroom where the teacher assumes the complete responsibility without assistance from other teachers. This teacher must be well versed in the roles, functions, goals, and methods of physical education as well as the many other subjects he teaches.

The advantages of the services of the physical education specialist in elementary school are numerous. He has knowledge of the subject matter in-depth, and is skilled in the methods of teaching physical education. He is cognizant of motor learning characteristics. He can see students' progress in motor skills over several years. In conference with other teachers, he can add an in-depth picture of the child in motor skill and peer play development.

The use of the classroom teacher in the physical education instruction program has the advantage of helping the teacher to see his students in a variety of dimensions—verbal, cognitive, affective, and psychomotor. The classroom teacher who has adequate knowledge in physical education can interweave the classroom knowledge into the gymnasium activity. The child need not adapt concurrently to two teachers who may have different personalities or teaching styles. Yet, experience in adaptation of this sort may not be detrimental. The advantages of the classroom teacher teaching physical education are negated if this teacher has minimal professional preparation in physical education. Diagnosing student needs, developing teaching and learning programs, and establishing a curriculum require in-depth knowledge in areas such as motor development, physiology of exercise, analysis of motor skills, achievement standards, and evaluative processes. Minimal knowledge of, or lack of dedication to the physical and motor growth of students can be most detrimental to normal development of the students in the most formative years.

Primary grade physical education is deemed crucial by most authorities in helping the child gain movement skills, develop appropriate social patterns, establish a positive self-image, and providing the foundational motor development for cognitive and affective growth. Adequate daily time assignments, and excellent teachers for the physical education program are imperative in the primary grades. A combination of the specialist and the classroom teacher may result in several beneficial elements.

Physical education specialists could be rotated among schools within

a district. The specialist would develop the learning program, conduct in-service workshops for the classroom teacher, and teach master lessons to be followed by the other teachers. Enough specialists must be available so their work can be of high quality, with time allowed for curriculum development, establishment of meaningful learning and teaching programs, assessment of progress, and leadership for in-service programs. The student/teacher ratio for specialists should be low enough for him to know all the students in his charge in a meaningful dimension.

JUNIOR HIGH SCHOOL OR MIDDLE SCHOOL

STAFFING PATTERNS. As the student advances in age and skill, the advantages of the classroom teacher's role as physical educator lessen and the advantages of a specialist in constant interaction with the student become more important. As the student matures, there is a resultant change in characteristics and an increased differentiation in the sex role of physical education activities. As a result, a greater need occurs for separating the roles of the male and female physical education teachers. In some areas of physical education study this distinction is not necessary. Cooperative teaching of coeducational classes remains desirable in rhythm and corecreational activities.

SENIOR HIGH SCHOOL

STAFFING PATTERNS. It is usually desirable that male and female physical education teachers be employed in the same ratio established for other subjects in the school. The place of the physical education generalist, who is skilled in most of the curricular offerings; and that of the specialist, who has depth of knowledge in one or two areas and cursory knowledge in others, is a matter to be resolved by the philosophy of the school and physical education department. It is further affected by the number of physical education teachers the school can employ.

In small schools where only one or two physical education teachers can be employed, generalists are perhaps desired. These teachers can give at least minimal learning opportunities to the entire curriculum program, and in-depth instruction in a few areas. Where more teachers can be employed, differentiated teaching roles can be established. Physical education teachers would be hired for the unique strengths they possess, and fill out an entire team which could give in-depth instructional opportunities to all students.

The physical education generalist has the advantage of seeing the student in a variety of activities. Learning problems inherent in one activity may exist for the same student in another activity. The teacher could anticipate the problems and provide for them early in the unit. The specialist, however, can see the student in a longitudinal fashion within the unit of study. He would have more knowledge of the way each student performs along a continuum of experi-

ence. He may be skilled in identifying and correcting learning problems in his area of competency, and assisting students to higher levels of achievement.

TEAM TEACHING. Team teaching occurs when two or more teachers share the responsibility for an instructional unit or exchange student groups for particular units. Team teaching respects the best individual characteristics of each teacher. These characteristics may make one teacher more suitable for a specific phase of development than another.

The development of a teaching team necessitates identifying the curricular offerings, learning tasks, and methods of presentation appropriate for various situations. The staff would be analyzed according to its teaching strengths, and various roles would be identified which, collectively, would make the team complete.

The team may be a permanent structure with an experienced teacher with a master's degree designated as the team leader. The team leader's role would be complimented by a variety of teachers with less experience working cooperatively, each according to his own specialties and interests. Supplementary functions could be performed by paraprofessionals.

TIME	*M*	*T*	*W*	*Th*	*F*
8:00	P.E 10 Sec. 4.5.6 With other Staff	P.E. 10 Sec. 4	P E. 10 Sec. 4	P.E. 10 Sec. 2	P.E. 10 Sec. 3
9:00		P E 10 Sec. 5	P E 10 Sec. 5	P.E. 10 Sec. 4.5.6 With other Staff	Plan
9:30	Open Mod. P.E. Counselling				P E. 10 Sec. 6
10.00		P E. 10 Sec. 6	P.E. 11 Sec. 1		
10.30	P.E. 11 Sec. 1			P.E. 10 Sec. 1	Plan
11:00		Plan	Plan		
11:30 12·00	L	U	N	C	H
12:30	P.E. 10 Sec. 1,2,3 With other Staff	P.E. 10 Sec. 2	Plan	Open mod. P.E. Counselling	P.E. 10 Sec. 2
1:00					
1·30		P.E. 10 Sec. 3		Plan	P.E. 10 Sec. 1
2.00			P.E. 10 Sec. 1,2,3 With other Staff		
2:30 3·00	Plan	Plan			P.E. 10 Sec. 3

Figure 6. **SAMPLE TEACHER SCHEDULE UNDER A MODULAR SCHEDULE FOR ONE WEEK WITH 30 MINUTE MODULES**

Teaching teams could be formed for specific activities or learning situations. The role of team leader would be assigned to the teacher with the most ability in the particular activity at hand.

For example, Teacher A may be designated as the master teacher and team leader for a basketball unit because he is the best basketball teacher on the team. His responsibilities would be the identification of learning tasks, objectives, effective evaluation techniques, learning processes, resources, and technical materials. Teacher A would also have the primary responsibility for directing and teaching the students in that unit. This teacher would work cooperatively with the support teachers or teacher-aides, instructing them in their function and the necessary techniques to supplement the instruction.

Teacher B may serve as a support member of the team, assisting Teacher A and providing the material necessary to prepare the room, establish discipline and help explain and clarify concepts and movements to the students. This teacher may supervise open laboratory practice or conduct small group instruction in those phases of the unit at which he is most competent. Teachers A and B may exchange roles when the activities change.

Figure 6 (page 33) is an example of a schedule for a teacher whose primary responsibility is working with the student whose schedule is represented in Figure 2 (page 13). This teacher will have periods assigned when he is not the primary teacher, but has a supporting role. The student should also come in contact with other staff members.

PARAPROFESSIONALS. Many schools are seeking to extend teacher effectiveness by utilizing paraprofessionals. The paraprofessional performs a support role with duties both inside and outside the instructional program. The addition of a paraprofessional staff should not be viewed as a substitute for certified teachers. Also, student/teacher ratios must be maintained, because it is the physical education *teacher* who will provide the learning experiences for the students.

If paraprofessionals are employed and the number of physical education teachers is reduced, nothing is gained. Each teacher can interact effectively with only a limited number of students. It is the degree of interaction which is crucial. If noninstructional duties are taken from the teacher only to have many more students placed in his charge he will still not have adequate time to get to know the students and help them reach acceptable physical education goals.

In schools where paraprofessionals can be employed, the role assigned to them must be commensurate with their ability and training. The physical education teacher must define the functions which can be performed by lay personnel and control their performance.

State laws and local regulations must be examined to determine what roles lay personnel can perform in the school. Restrictions and responsibilities placed on a nonteacher certified staff must be in accordance with legal liability regulations. Laws, plus the identification of those teaching acts which must be under the supervision and governance of a certified teacher would be the basis

for defining the extent of responsibility each paraprofessional would be allowed to perform.

The following is an example of the education and duties of a differentiated staff.

EXAMPLE OF DIFFERENTIATION OF STAFF UTILIZATION

Personnel	*Education*	*Responsibilities*
Teacher	B.S. or M S. Degree in physical education	Design: Instructional programs, learning tasks, behavioral objectives, evaluative criteria and process, technical material Diagnose learning problems and teach Supervise support members of the team
Paraprofessional or Specialist	Recreation degree Special talent or certificate in area of specialty, i.e life guard sports professional	Teach or assist, under the supervision of the teacher, certain phases of instruction in his area of specialty Supervise safety and conduct of students Assist with testing Demonstrate skills
Teacher-Interns (Employed by school, not student teachers)	In process of earning a degree in physical education	Assist with instruction Tutorial assistance Prepare materials designed by the teacher
Teacher-Aides	Special terminal instruction in duties to be performed	Grade papers Keep records Supervise noninstructional activity Prepare materials Proctor tests Supervise playground Assist with skill and physical fitness testing
Clerks Custodians Equipment and Facility Managers	Special training or ability to perform duties involved in the job	Work in office Maintenance Distribute and care for equipment and facilities

AREAS OF RESEARCH AND MATERIALS NEEDED FOR FULL UTILIZATION OF INNOVATIVE ORGANIZATIONAL PATTERNS

As patterns of organization, instruction, grouping, and staff utilization are being implemented, certain areas of investigation are necessary to assure proper follow-through. Some of these areas are:

1. Determination of optimal lengths of time for students of differing ages and learning characteristics to spend in large and small group instruction, independent study, and laboratory practice
2. Determination of time lengths compatible with attention span, fatigue factors, and motivation for each learning session
3. Determination of ideal class sizes for the various learning groups and tasks
4. Determination of facility design and the establishment of standards for gymnasiums, physical education learning centers, and auxillary areas to accommodate large groups, small groups, open laboratory, and independent study
5. Determination of procedures for identifying students' needs which would consume a minimum amount of time
6. Identification of teacher presentation methods which would be most compatible with the various levels of ability and learning characteristics of the students
7. Establishment of guidelines at the national level for duties, responsibilities, and qualifications of physical education paraprofessionals
8. Establishment of certification qualifications for paraprofessionals at local and state levels
9. Preparation of audio-visual aids to supplement the traditional material available
10. Development of independent study project material such as programmed learning packages and project designs.

CRAIG CUNNINGHAM

MOVEMENT EDUCATION AT THE UNIVERSITY ELEMENTARY SCHOOL

PURPOSE OF THE SCHOOL. The University Elementary School is a laboratory of the Department of Education at the University of California, Los Angeles. The primary functions of this elementary school are research, experimentation, and inquiry in education. Adapted to these major functions are programs of demonstration, teacher education, and publication.

As a center of inquiry, the University Elementary School has the responsibility of exploring and evaluating promising ideas related to educational theory and practice. This school, therefore, provides a setting in which researchers may study aspects of the learning process, early childhood and elementary curriculum and instruction, school administration, teaching, supervision, counseling, health services, and home-school relations.

The University Elementary School serves not only as a center for educational research, but also as a center from which its research interests, practices, and findings are communicated and disseminated. Communication is pro-

moted through demonstrations, conferences, and seminars as well as through publications, television, films, and other appropriate media.

As a research facility, the University Elementary School is available to all departments of the university. More than 20 departments are currently involved in research projects being conducted at the University Elementary School.

NONGRADED EDUCATIONAL PROGRAM. A school maintained as a university laboratory shares with all schools the basic responsibility for the education of the children enrolled. It must provide for its pupils a learning environment and a program of activities conducive to their wholesome development as citizens of a democratic society. Therefore, this school gives careful consideration to the educational welfare of its pupils.

At present, the University Elementary School is completely nongraded. Each child is placed in an instructional group on the basis of an individual diagnosis. His educational activities within the group are the result of a prescription created specifically for him. In some groups, team teaching is being explored as a way of facilitating this custom-tailored learning. Other groups are examining the most effective ways to use supplementary staff personnel to help each teacher achieve this same custom-tailoring. Also under investigation is the role of the specialist in each area, and how his work may most productively complement the general program.

As the foundation of its curriculum, the school emphasizes learning the basis concepts and generalizations of the humanities and the sciences. Learning how to learn and developing a zest for learning, are very important University Elementary School objectives.

SELECTION PROCEDURE. The selection of children for the school is made by an admissions committee which is chaired by the principal. A research population of approximately 50 to 150 is maintained at each instructional level. Each September about 50 nursery school children are enrolled at the three year old level. The only other openings occur infrequently when a child leaves. In this case a child of the same age and sex is admitted from an extensive waiting list.

SELECTION CRITERIA. The chief policy guides in enrolling children are related to the major functions of the school, i.e., the promotion of research, experimentation, and inquiry in education. It is believed that these functions are best served when the school, student, and parent bodies possess certain characteristics. The following characteristics of pupils and parents are regarded as warranting consideration for admission.

VARIED BACKGROUNDS. There is an effort to enroll children in the school who represent varied economic, social, racial, and ability backgrounds. The school does not seek an enrollment population with exclusive or unique characteristics. For example, a population of "gifted" pupils is not sought by the school.

PERMANENCE OF RESIDENCE. Because of the expense of collecting research data and the necessity for continuous records for longitudinal research, probable permanence of a child's attendance is an important factor. Therefore, preference is given to applicants who anticipate permanent residence within the prescribed geographic area of the school. Occasionally, unusual circumstances permit the enrollment of some out-of-state pupils who will have a short-term residency within the school.

SIBLINGS. It is believed to be important that children of a family attend the same elementary school. Therefore, preference is given to applicants who have brothers or sisters already enrolled in the school. However, because of the limited enrollment in each class, there can be no guarantee of placement for each sibling applicant.

PARENT PARTICIPATION. The education of the child is most effective when school and home cooperate in all matters of mutual concern. Consequently, the interest and participation of the family is viewed as being requisite to enrollment of children in the school. Parents of children in this school have the responsibility to be informed about education in general and particularly about their children's education at this school. Parent group meetings and conferences provide the means for this communication. Children's progress is reported in a parent-teacher conference two or more times a year.

GROUPING. At present there are four major levels of instruction in the school. These include the age range from three to twelve years. Early childhood ranges from three to six, lower elementary from five to seven, middle elementary from eight to ten, and upper elementary from nine to twelve. Ages often overlap because of the maturity of some children who are able to work with older groups.

The various groups attend school on a regular university calendar basis, and daily for a six week block of time. Planning weeks for staff personnel are spaced approximately every six weeks when the children are not in school attendance. Daily school time also varies, with the early childhood children attending school each day from 8:30 to 11:30, lower elementary from 8:30 to 1:45, and middle and upper elementary children from 8:30 to 2:45.

Children at each level of instruction have a daily scheduled physical education block of time which varies with the maturity of the children. Early childhood pupils, working in small groups of 7 to 10 children, have 20 minutes with the

master teachers responsible for the direct teaching of that level. The lower and middle elementary level children receive 30 minutes daily, while the upper elementary children receive 40 minutes daily.

Keep in mind, too, that children from each level will represent a wide age and skill range and there are anywhere from 100 to 150 children in a physical education period at one time. The children are being taught during this time by the three to five master teachers of each team. These are the classroom teachers who are responsible for the teaching-learning act throughout the school day.

PLACEMENT OF STUDENTS. The first three weeks of each school year are used as a diagnostic period when children undergo a number of specific tests which will indicate their present skill level. These tests are designed by the physical education specialist working with the individual teaching teams. Appropriate items are designed and selected during the first work week prior to school opening in September. Each is a behavioral objective that asks the child to perform a specific act in a specific manner. The following examples from a middle elementary unit illustrate:

1. The child will demonstrate a correct overhand throw using a softball and throwing the ball to or past a distance of 30 feet.
2. Given a 2-inch balance beam, 12 feet in length, the child will walk the beam backwards in 10 seconds or less.
3. Given a 16-foot rope, hanging vertically, the child will climb to the top in less than 12 seconds.

The children are checked in seven major areas of movement, at each level using behavioral objectives of an appropriate level of difficulty. These seven areas are: locomotor skills, eye-hand skills, eye-foot skills, body coordination skills, balance skills, sensory motor skills, and rhythm and dance skills. When completed, each child has a profile card showing his strengths and weaknesses. The child is then confronted with his performance so that he may be aware of the destinations set for him.

Taking this information, the individual teams, along with the physical education specialist, group the students into appropriate learning activities. If, for instance, there were 125 children in the teaching team, and it was found through testing that 30 children were in need of balance skills, 40 were in need of eye-hand skills, 20 had poor laterality skills, and 35 needed folk dance, instructional groups would then be designed for the teaching of these areas. Members of the teaching team would decide which teacher would be assigned to each area. In some cases a new teacher or student teacher would work directly with the physical education specialist for a specific period of time. During this time the teacher would have a chance to observe the specialist working in the specific area, doing the actual teaching. Gradually the new teacher or student teacher would move into the teaching act while the specialist worked into an observing, criticizing role to help the team teacher become more knowledgeable.

Generally, teaching units last from four to six weeks. In some cases they are longer, depending on the unit. If a child shows that he is having difficulty he may be kept longer in a unit. Some children for example, in unicycle riding, take the entire block of time just to pedal a few times. With a time extension, however, some child might get a chance to extend his experience and become a good novice rider.

After a four to six week period, children are reevaluated as to areas of need. This is done by referring to the profile cards. Team meetings are held again with all teaching team members and the physical education specialist. Children are again assigned units in various areas of need. In some cases, social groupings are checked when some children display an inability to get along with certain classmates. Another variable in the placement process occurs when a model is needed. In this case a child, or specific children, might be used within a group to help demonstrate skills, or to act as strong leaders.

During the school year, each child in each team will move into weaker skill areas and then into areas of more strength. Team sports and major units such as football, basketball, softball, wrestling, track and field, swimming, and others are then integrated into the program as part of the seven major areas of interest framework.

In addition to the regular physical education block, certain children who need additional help are given practice time within the week to work on skill improvement. This is done with the physical education specialist on a one to one basis, or in some cases, an older student will work with a younger student. If additional training is needed, a remedial program in the vicinity of the school or home might be recommended.

PARENT CONFERENCES. The parent conference is the means used to report progress. Usually, both parents are required to attend two, and sometimes three, times a year. In some cases, too, the child will be present to further communication about his needs. The master teacher in each physical education unit uses certain behavioral objectives as a means of measurement. The teacher, in a parent conference, can let the parent know where the child is in relation to the unit objective. He can also recommend additional practice outside of school such as apparatus work, throwing, catching, roller skating, swimming, or any other kind of skill. The teacher might also comment on the social behavior of the child with peers and with the teacher. In some cases he might suggest that the child invite school peers to his home so that more play through socialization could occur.

In addition to the regularly scheduled parent conference, any number of meetings may be scheduled throughout the year. Conferences may also be held directly with the physical education specialist.

PARENT EDUCATION. During the start of each school year, each instructional team has a parent night meeting where all phases of the curriculum are explained

to the parents of the students in that team. In this way communication avenues are open and the parents have an opportunity to question the teachers about plans for the year. In physical education, major units of instruction are explained and sometimes shown via slides, videotapes, or Super 8 movies. Invitations too, are made at this time to encourage parents to see the curriculum in action on parent visitation days.

Parents are also used to help build small pieces of equipment such as balance beams, stilts, fleece balls, and other equipment.

STYLES OF TEACHING. Various styles of teaching are used in physical education at the University Elementary School. The continuum of teaching techniques from command to discovery is flexibly used. At the early childhood level a discovery style is used almost exclusively. At other levels, the use of reciprocal teaching with partners is used a great deal. In addition, task cards are used at the middle and upper levels, where children work independently or in small groups to accomplish specific skills.

Homework in physical education is given in written form. Examples might be to design an obstacle course for roller skating given an overhead view of the instructional area, or to design ten ways to move a basketball down the court using three players, or to design a one minute free exercise routine listing all moves. The emphasis is on the various cognitive levels of thinking to help children understand the structure of an activity.

SCHEDULE OF PHYSICAL EDUCATION SPECIALIST. An example of a typical day in the role of a physical education specialist might be helpful to show the varying involvements throughout the teaching day.

8:00- 8:30 — Preparation for daily teaching - Distribute audio-visual equipment, get trampoline and tumbling equipment set up, and master ball room open for team teachers.

8:30- 9:15 — Early childhood - Rotate among three teaching stations, observing children, criticizing teachers, using videotape recorder, or possibly shoot Super 8 movies.

9:30-10:00 — Middle elementary unit - Demonstrate trampoline skills with children in gymnastics; master teacher observes.

10:00-10:30 — Student teacher meeting - Discuss techniques to be used on trampoline.

10:30-11:00 – Student teachers practice on trampoline.

11:00-12:00 – Teach a Physical Education Activity Class for UCLA students.

12:00-12:30 – Lunch break

12:30- 1:00 – Lower elementary class - Work with one master teacher in rope jumping with his class of 30 students. Other children work with master teachers of team.

1:00- 1:45 – Upper elementary - Rotate between two teaching stations to observe the behavior of two children for parent conference.

1:45- 2:30 – Team planning for early childhood level - Discuss sequence of sensory motor activities in visual motor area.

2:30- 3:15 – Meet with master teacher from lower elementary level to discuss the lesson taught that day.

3:15- 4:00 – Meet with student teachers to view past videotapes of their instruction.

Physical education at the University Elementary School will continue to strive toward new horizons; for it is only through a continued inquiry that progress can be made for all involved in the teaching-learning act.

DELORES M. CURTIS

BRINGING ABOUT CHANGE IN ORGANIZATIONAL PATTERNS IN ELEMENTARY SCHOOLS

The University Elementary School of the University of Hawaii is always looking for ways to more effectively fulfill its function as a research department of the College of Education. In 1965-66, the faculty began studying organizational patterns that use teaching positions more efficiently while better serving the needs of the children enrolled in grades one through six.

BACKGROUND. The University Laboratory School is located on the Manoa campus of the University of Hawaii in Honolulu. The approximately 600 pupils, ranging from 3 to 18 years of age, typify the racial mixture of the state and are reasonably representative of the variations in socio-economic status, particularly in younger age groups. In recent years, the incoming student population has been selected on the basis of the school's specific curriculum evaluation and development project needs.

INITIAL GROUPING EXPERIMENTS. The first organizational change was made in the fall of 1966. Nine classroom teachers were assigned groups of children of one grade level, or a combination of two grades that were homogeneous in terms of language, arts, and mathematics achievement. Specialists in four subjects, art, Japanese, music, and physical education, taught the children as they were grouped for the classroom: grades one and two, two, two and three, three and four, four and five, five, five and six.

Dissatisfied with the restrictions of small groups and the children's varied abilities in different subjects, the teachers grouped the children in grades one to four according to five levels of reading ability for the second semester. Then each of the six classroom teachers declared his subject of specialization: language, literature, mathematics, science, or social studies. The Japanese language specialist instructed the children during the language arts blocks of time. For art, music, social studies, and physical education instruction, the children were regrouped primarily according to their abilities in music and physical education, as mutually determined by the specialists in these two areas. Due to the reluctance of classroom teachers to regroup completely, three teachers of grades five and six planned their own intragrouping and cooperative teaching. Consequently, the specialist teachers maintained the grade level grouping arrangement for the older children. Children in grades one through six received the same amount of physical education instruction, 30 minutes four times a week, all year. Class size averaged 25 pupils (see Figure 1).

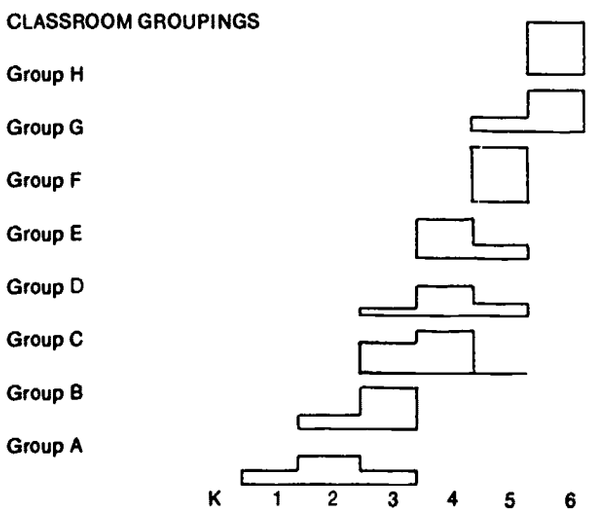


Figure 1. **GRADE LEVEL DISTRIBUTION OF PUPILS ACCORDING TO READING ABILITY FOR CLASSROOM AND PHYSICAL EDUCATION INSTRUCTION, SPRING SEMESTER, 1967.**

K-12 FACULTIES. In the 1967-68 school year the University Pre-School, the University Elementary School, and the University High School were reorganized into a single unit, the University Laboratory School. This is a division of the Hawaii Curriculum Center, a joint agency of the Hawaii State Department of Education and the University of Hawaii. As a part of the reorganization and emphasis on curriculum evaluation and development function, the teachers were assigned in K-12 faculties according to disciplines, each with a chairman appointed by the director of the school. The preschool teachers and pupils were grouped separately, as they were involved in other research.

The advent of the K-12 discipline faculties in 1967-68 allowed better vertical articulation of curriculum. For horizontal articulation of instruction and teacher-pupil matters, the students in grades K-6 were grouped in three teams determined by language arts achievement. Team I included children in kindergarten, first, second, and third grades; Team II, second, third, and fourth grades; and Team III, fourth, fifth, and sixth grades. Each team had three ungraded subgroups. Teachers of all disciplines functions as an administrative group concerned with the welfare of the children constituting each team. One teacher served as team leader for each team, and regular meetings were held to discuss the conduct of affairs pertinent to the functioning of each team.

For music and physical education instruction, children within each team were regrouped for back-to-back periods by the music and physical education specialists. Physical education classes met for 30 minutes, four days a week, in all three teams.

MODULAR SCHEDULING AND FLEXIBLE GROUPING.

University Laboratory School's elementary level continues to be most organizationally malleable. Each year one finds new schedules and new groupings being tried. However, from the viewpoint of physical education instruction, the most satisfactory pattern was in effect in 1968-69, when efforts were made to group children for physical education instead of for, or in combination with, some other subject area. The three team arrangement continued, however, with the addition of modular scheduling for kindergarten through grade twelve, a greater degree of flexibility in the grouping of elementary children was possible. During the previous spring, members of each discipline faculty were asked to classify children according to their abilities and achievements in the subject area, and the team teachers were asked to classify children according to social and emotional maturity. Grade level classifications were put aside except for one or two disciplines in which the curriculum evaluation projects required grouping by grade level.

INDIVIDUAL SCHEDULING. The combination of classifications for each child was the basis for determining his individual schedule. The schedule of courses in each discipline was developed to best suit the majority of children. Of course every

child was not placed according to his achievement in every discipline, but the number of misplacements was minimal. (To appreciate the intricacy of this process, keep in mind that at the same time there were plans made to share the faculty and facilities of the entire K-12 complex.) The language arts teachers, or English faculty as it is now known, served as home base for the children. These teachers supervised independent study and juggled children constantly. With the aid of color-coded schedules posted prominently, even the youngest children were generally able to follow an irregular pattern of classes. The less responsible children needed monitoring by the teachers to get them to classes on time, and a few wiley ones, including second graders, took advantage of the initial confusion to skip class and play surreptitiously. Throughout the year, as teachers' judgments about children's capabilities in given levels changed, their schedules were shifted by mutual agreement among the teachers of the various disciplines involved. This typified the cooperation of the teachers on each team. Because of the hand-tailoring of the schedule of courses for K-12, it was not possible to interchange any courses; so the overall schedule was not flexible.

IMPLEMENTATION

FOR PHYSICAL EDUCATION. What did this system mean for physical education in particular? First of all, a general statement of broad objectives for each of the six levels was developed. Based upon a thorough record-keeping procedure and intimate knowledge of all the children from previous years, the physical education teacher ranked each child and designated which levels of physical education were appropriate. During the summer, by working with the administrative assistants who were programming individual schedules, the instructor could recommend adjustments in the children's groupings.

In the first year, children in Level I physical education were subdivided according to kindergarten (16 children), first grade (19), and second and third grade (25 children), who had not had any previous physical education instruction. Children in Level II were second graders who were more advanced in achievement and third graders who had not had any previous instruction but evidenced greater ability (27 children). Children in these two levels were from Teams I and II. These four classes met daily for twenty minutes each. But for these young children to move from class to class almost a block away with no passing time between classes, 20 minutes was not sufficient time for instruction (see Figure 2 on page 48).

Level III pupils were subdivided into two groups—one of average third graders and low fourth graders, who were fairly homogeneous in achievement (27 children) and the other was composed of average fourth graders and advanced third graders (22 children). However, one advanced second grade boy in the first group was still below his capabilities. Level IV was a mixture of one talented third grade boy, strong average fourth graders, and a few low-skilled fifth graders (24 children). These children were from Teams II and III. Their classes met

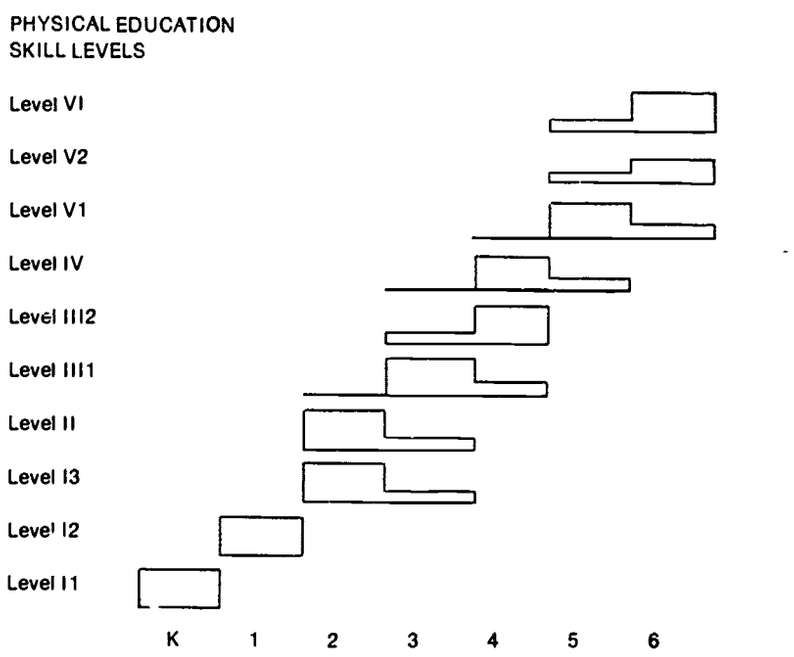


Figure 2 **GRADE LEVEL DISTRIBUTION OF PUPILS ACCORDING TO MOTOR ABILITY FOR PHYSICAL EDUCATION INSTRUCTION, 1968-69.**

for 40 minutes three times a week. A similar time allotment was followed for children in Levels V and VI, who were all from Team III. Level V included two sections, each with one skillful fourth grader, average fifth graders, and less skillful or immature sixth graders (21 and 27 children). Level VI included the more skillful fifth and sixth graders (26 children) with some who could have functioned capably in the seventh grade except for the traditional barrier between sixth and seventh grades.

ADVANTAGES AND DISADVANTAGES. Children participating in this novel organizational pattern seemed to adjust readily enough but the teachers had more difficulty, possibly because several new people were introducing radical changes for which they had not prepared. Teachers were more comfortable by the second semester as familiarity with the schedule and experience increased. For the few children lacking self-direction, this pattern was not helpful, and a self-contained classroom was considered a more appropriate learning environment.

Several adjustments in organization and program were necessary as the K-12 physical education faculty worked toward an integrated curriculum for the first time in 1967-68. Secondary teachers joined in teaching elementary child-

ren. All equipment and facilities were shared, which increased the variety available to all and also required more cooperative planning.

HIGH SCHOOL TUTORS. There was one highly successful innovation permitted by the combination of modular scheduling, independent study, and K-12 staffing—high school seniors were offered an elective course in physical education for elementary children which was taught by the school psychologist and the elementary physical education specialist. The psychologist discussed learning and behavior modification, and the specialist discussed the physical education program in weekly one hour seminars. With the advice of Team II and III teachers, children with behavior problems and/or low motor skills were identified. Each senior was scheduled to meet with a very small group of these elementary children for one or two modules (20 to 40 minutes) during their independent study time each week. Personalized efforts with individual children resulted in noticeable gains for the youngsters as well as satisfaction and experience for the senior students.

RECOMMENDATIONS. From the perspective of a five year involvement in scheduling and grouping, two key guidelines seem especially important to offer those who would profit from our experience. First, it takes *time*—to clarify objectives, develop organizational ideas, try organizational schemes, evaluate, and change teachers' behavior patterns. Second, it is the *process* rather than the pattern which should be adopted. The University Laboratory School organizational patterns were tailor-made to particular situations and have been modified according to changing needs. Very likely other schools can adapt the organizational pattern described previously, but more profitably they should adopt the *process* of *group* planning, contributing input, evaluating, and modifying. This group process seems most effective in bringing about organizational change in a school.

RON PETERSON

DESIGN, DEDICATION, AND DIRECTION

The Minnesota Vikings, the Minnesota Northstars, and outstanding high school athletic programs help make Bloomington, Minnesota one of the outstanding sports capitals of the United States. Bloomington, a suburb of Minneapolis, has a population of approximately 90,000. The community's interest in education is demonstrated by the 3 senior high schools, 4 junior high schools, and 25 elementary schools.

Each junior high school has an enrollment of approximately 1,300 to 1,700 students. The students who attend Oak Grove Junior High School are primarily from upper-middle class families with some exceptions at both ends of the spectrum.

PROGRAM

RATIONALE. The prime objective is to help students learn how to learn and accept full responsibility for their own learning.

More specific objectives are:

1. To develop a continuous progress design
2. To implement individualized instruction
3. To help students work independently in an individualized program

4. To utilize a behavioral objective approach
5 To differentiate staff
6. To individualize evaluation.

PROGRAM DESIGN. There are five basic parts to the program design. The first part of the design is called the scheduled, or regular program. This contains those units familiar to most schools—team sports, wrestling, tumbling, gymnastics, rhythms, and so on.

The second part of the design is called the independently scheduled, or student scheduled time. This is determined by the individual schedules of the students themselves. Perhaps a boy or girl in the seventh grade is tightly scheduled in the morning, but has time available in the afternoon to come to the physical education department. At this time activities such as indoor archery, weight lifting, tennis, indoor golf, baseball hitting, and snorkeling are offered.

The third part of the program design is the elective program. During the elective time, a student may choose from a large number of activities. These include such things as bowling, table tennis, shuffleboard, and all the activities previously mentioned.

The fourth part of the design is the adapted physical education program. This part of the program is for those students who have problems of a physical or emotional nature. A special program is developed individually for these students based upon their particular needs.

The swimming program constitutes the fifth part of the program design. Each student must take one of the seven levels of swimming instruction offered each year.

GROUPING AND SCHEDULING PATTERNS. Students at Oak Grove are grouped according to skill or interest in nearly every activity. This is done mainly by pretesting skills. Knowledge is not pretested. Certain objectives are set for each student. These objectives have been put together in what is called Raider Aids (learning packages) and all objectives are behaviorally designed.

The school presently has a total student attendance of about 1,700 students. Class sizes vary depending upon the part of the program in which the students are participating. An elective, I.S. (independently scheduled), swimming, or adapted activity might have anywhere from 1 to 50 students. An individual I.S. golf lesson may be given, or an underwater hockey elective that involves so many players that a tournament type organization would have to be instituted. A regular class usually has a 22 to 1 student-teacher ratio.

Seventh and eighth graders have physical education scheduled three times a week. One of the days is optional as to attendance and type of activity. Ninth graders are scheduled four days per week having the same option as the seventh and eighth graders. Total time in minutes per week for each class

is as follows: seventh grade, 225 minutes; eighth grade, 150 minutes; and ninth grade, 200 minutes.

A block method of scheduling is used. There are nine blocks or groups of students, three blocks in each grade, with approximately 180 students per block. Each department schedules the block according to its own program.

STAFF

UTILIZATION. Implementation of the extensive and diversified physical education program at Oak Grove require a sizeable staff with many talents and many levels of competencies. The staff includes five certified physical education teachers, eight half-year certified interns, one certified intern on a full year basis, and one paraprofessional who teaches the majority of the swimming classes. Supplementing the staff are several practice teachers from colleges within the state of Minnesota. One typist is assigned to physical education and to two other departments. Teacher aides are available and utilized at certain times of the year. Two resource specialists in the Main Resource Center do the testing and recording for the evaluation of the students.

The Learning Disability Center in the school provides the service of adapting the knowledge testing for physical education. The Learning Center administers the tests and also evaluates the student while taking into consideration his learning disability.

In the Resource Center many instructional materials are provided for each student. There are movies, video mini courses, and film loops, as well as ample numbers of textbooks, magazines, informative materials, taped lectures, and a dial access system.

Scheduling is done through team planning for each unit. A unit coordinator is responsible for staffing the unit, writing the Raider Aid (learning package), or altering the learning package already available. The scheduling is done approximately once every four or five weeks depending upon the length of the unit in the regularly scheduled program.

Figure 1 (page 54) shows a scheme for differentiated staff utilization. The following is the designation of responsibilities of each person:

AREA LEADER. (Responsible to the principal)
Major Responsibilities:

1. Instructional program design
2. Instructional program in physical education, health, and swimming
3. Academic cabinet
4. Evaluation of instruction in physical education, health, and swimming
5. Evaluation of school objectives
6. Inservice planning
7. Budget planning and implementation

Illustration of Key Duties:

1. Instructional programming
2. Physical education instruction improvement
   a. Staff development
   b. Organizational technique design
   c. To work with teachers to accomplish objectives
   d. To develop curriculum with other area leaders
3. Evaluation of instruction
   a. To carry on research regarding the implementation of physical education and health programs
   b. To influence teachers' in-service development to improve efficiency
   c. Curriculum articulation with supervisors and team leaders
   d. Articulation of achievement from grades nine to ten
4. Evaluation of school objectives
   a. To plan and implement the area budget
   b. To contribute evaluated data for research purposes relating to the total school program
5. Liaison responsibilities
   a. Coordination of outside resources
   b. Program articulation with school specialists
   c. Supervision

TEAM LEADERS. Health: Responsible to the principal
Girls' Physical Education: Responsible to area leader
Major Responsibilities:

1. Supervision of team members
2. Coordination of team specialists
3. Instructional leadership and planning
4. Budget planning for team
5. Supervision of team evaluation
6. To accept all responsibilities of staff duties as a staff member

STAFF. Certified Teacher: Responsible to the principal
Certified Teacher Intern: Responsible to the area leader
Major Responsibilities:

1. Instruction of students
2. Coordination with team leaders
3. Assistance with extra-curricular activities
4. Evaluation of individual students
5. Communication with parents
6. Supervision of student conduct
7. Teacher-advisor responsibilities
8. Evaluation of own performance

PARAPROFESSIONALS. Responsible to area leader
Major Responsibilities:

1. Supervised instructional assistance
2. Assistance in swimming pool
3. Clerical assistance
4. Supervision of student conduct
5. Preparation of learning materials

CERTIFIED UNDERGRADUATE INTERNS. Responsible to area leader
Major Responsibilities:

1. Clerical assistance
2. Record keeping
3. Preparation of materials
4. Supervision of student conduct in noninstructional areas
5. Individual tutorial assistance
6. Observation

STUDENT TEACHER. Responsible to area leader
Major Responsibilities:

1. Observation of learning activities
2. Supervised clinical teaching experience
3. To assist supervising teacher
4. Preparation of teaching materials
5. Individual tutorial assistance
6. Extracurricular activities as assigned

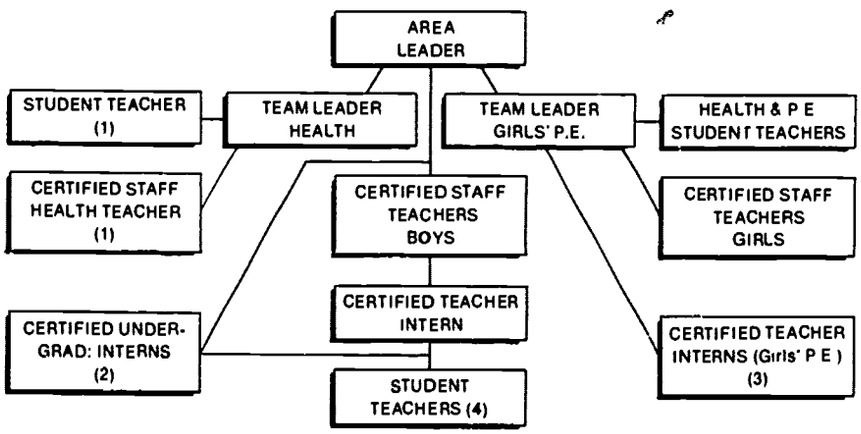


Figure 1. **OAK GROVE JUNIOR HIGH SCHOOL STAFF ORGANIZATION FOR PHYSICAL EDUCATION**

EVALUATION. Evaluation became a difficult problem to solve with so much diversity in the learning program. To evaluate, there must be an efficient record keeping procedure. To accomplish this objective a cardex recording system was devised. This system is used for recording scores, and later for evaluation purposes. On the cardex card is recorded the student's test results both in skills and knowledge. Also, the swimming levels are recorded along with predictions of what each student should accomplish.

SUMMARY. The following twelve statements generally describe the achievements to date:

1. Both skill and written objectives are stated behaviorally. Individual progress relating to the peer group, as well as the student's own ability to learn, is taken into consideration at evaluation time when class and individual achievement are evaluated.
2. Some continuous progress (nongraded) units have been developed. (Note: Not all units are conducive to a continuous progress design at this time because of lack of facilities and staff.)
3. Students take all written tests in the Main Resource Center and schedule these on their own time.
4. Film loops and videotape presentations for large and small groups have been developed.
5. Dial access, accompanied by film strips, is available as an independent study activity in the Resource Center.
6. An elective program was developed within a structured setting and, although structured, it was individualized. At most times 10 to 12 choices of activities are offered.
7. To go along with the continuous progress design, an individualized cardex evaluation system was instituted.
8. The independently scheduled time was developed to allow students who have free time in their schedule to come to the physical education department and take part in activities that are available.
9. An adapted program has been initiated and services those students with special needs.
10. Performance criteria was developed as a certain level of accomplishment is expected of each child, by both the child himself and the teacher. The performance criteria is established in each scheduled activity offered.
11. Flexibility is provided in student scheduling which takes into consideration special strengths, weaknesses, and individual differences through the independent study program.
12. Coeducational activities have been a very strong part of the physical education program, making up better than 75 percent of all activities offered at the seventh, eighth, and ninth grade levels.

FRED LEIDER

IMPLEMENTATION OF STUDENT NEEDS IN JUNIOR HIGH SCHOOL

The Burnsville School District 191 lies approximately 15 miles south of Minneapolis and St. Paul, Minnesota. Burnsville is the largest of the three major communities that constitute the district, and is presently one of the fastest developing suburbs in the metropolitan area.

The area, steeped in Indian heritage, was first settled by Irish-Catholic families who farmed the land. When the district was consolidated in 1955, it was still basically a farming community. By September of 1956 there were two major school buildings. One was an elementary school in the town of Savage, and the other was a combination elementary-secondary building located centrally in the district.

Today, District 191 has 30,000 residents, 8,000 of these being of school age. Educationally, the community is served by 1 public high school, 3 junior

high schools (1 private and 2 public), and 10 elementary schools (1 private and 9 public).

Nicollet Junior High School is the newest school building. It was opened in the fall of 1970, with an enrollment of 1,059 students in grades seven through nine and a staff of 65 teachers.

The organizational pattern developed at John Metcalf Junior High, the district's other junior high school, was adopted at Nicollet Junior High School.

EVALUATION OF JOHN METCALF JUNIOR HIGH SCHOOL 1968-1970. Those involved in modular scheduling are eager to find research studies showing that it is better than traditional scheduling. However, research has been inconclusive. Similarly, the question of whether a 25 minute period is better than a 40 minute period cannot be answered. The variables are too numerous and too complex to assess. There being no means to make a penetrating analysis of the schedule, an opinionnaire was used which was designed to probe the feelings of students and teachers. Major areas of concern were:

1. Length of time periods
2. Frequency of class meetings, Monday through Friday—other patterns
3. Duration of course (one quarter, one semester, all year, etc.)
4. Independent study in an instructional materials center
5. Laboratory periods
6. Elective possibilities
7. Minutes per day or week of instruction
8. Student inquiry
9. Flexibility
10. Team teaching

The response of students and teachers to these areas of inquiry guided revision of the organizational and instructional program. Their judgment was deemed as probably the best indication of whether or not an innovation was offering better learning and teaching opportunities.

In the fall of 1968 the staff and students at Metcalf Junior High School in Burnsville, Minnesota, under the auspices of the State Department of Education began a three year experimental program. Time changes, course duration, and electives were the salient changes introduced. In an attempt to reassess the progress of the program, an exhaustive opinionnaire was compiled the first year. The evaluation for the second year was more subjective in that a plan for departmental visitation was initiated to assure communication and feedback. The principal spent a full week in each department visiting a variety of classes, talking to students and department members, and holding formal and informal meetings. This was followed by a department summary letter detailing concerns and giving credit for outstanding achievement. The contents of this

evaluation letter were discussed at length at a full department meeting. Finally, each department member met with the principal to discuss his personal evaluation and role in the department.

The results of this program have been tremendous in that new avenues of communication have been opened. Positive reception and evaluation were expressed in the following areas:

1. *Instructional innovation*
   a. Independent study commensurate with ability and maturity
   b. Exploration experiences provided in a variety of areas—i.e. ecology, science investigation, music, literature
   c. Introduction of new electives
   d. Written objectives (behavioral) on a team or departmental basis
   e. Utilization of learning packages
2. *Organizational improvements*
   a. More effective grouping by teachers through blocking
   b. No formal requests for changing of course duration or time
   c. Fewer classroom discipline referrals
   d. Planning flexible days
3. *Teacher organization*
   a. Cooperative planning by teachers
   b. Requests for common planning time
   c. Greater requests for audio-visual equipment and materials
   d. Staff acceptance of free student movement
   e. Staff and student enthusiasm

This empirical evidence, along with students' and staff's opinions and national educational trends, will be used as a continuing basis for the final evaluation.

PHYSICAL EDUCATION

CURRICULUM STRUCTURE. The recent trend to modular flexible scheduling in junior high school education has taken a number of variations. At Nicollet Junior High School, electives were chosen as a means of flexibility. All the students' modules are structured so that each must select an area of interest for each module during the school day. Through block and team scheduling, course durations can be changed by instructors to accommodate specific needs. Cooperative planning by staff and students insures a high degree of interest in the elective offerings.

The State Department of Education recommends the amount of time to be spent on each subject area. At Nicollet, the school day was divided into 17 modules; it was possible to meet these recommendations and, in most areas, exceed them (Figures 1 and 2). Teachers were requested to define the time allotment needed in their areas and in what blocks it would be most desirable. Physical education received its request for two modules per day for each student, five days a week for the entire school year.

SUBJECT AREAS	GRADE 7	GRADE 8	GRADE 9	TOTAL HOURS	PROPOSED HOURS
Fine Arts	75	75-112	Elective	150-187	90
English	150	150	150	450	360
Health	25	25	25	75	60
Home Economics or Industrial Arts	75	75-112	Elective	150-187	120
Mathematics	150	150	150	450	360
Music	75	0	Elective	75	90
Physical Education	125	125	125	375	240
Science	150	112	150	412	240
Social Studies	150	112	150	412	360

Figure 1. **CLOCK HOURS PER YEAR**

CLASS SCHEDULE	
I	8:53 - 9:46
II	9:50 - 10:40
III	10:44 - 11:34
IV	11:38 - 12:53
V	12:57 - 1:47
VI	1:51 - 2:41
VII	2:45 - 3:35

LUNCH SCHEDULE	
1st	11:34 - 12:03
2nd	12:00 - 12:25
3rd	12:28 - 12:53
4th	12:53 - 1:18

* Additional modules subsequently were added

MODULES *	
1	8.53 - 9:20
2	9:21 - 9:46
3	9:50 - 10:14
4	10:15 - 10:40
5	10:44 - 11:08
6	11:09 - 11:34
7	11:38 - 12:02
8	12:03 - 12:27
9	12:28 - 12:53
10	12:57 - 1:21
11	1:22 - 1:47
12	2:16 - 2:15
13	2:16 - 2:41
14	2:45 - 3:09
15	3:10 - 3:35

Figure 2. **TIME SCHEDULE**

To facilitate team teaching in physical education, identical grade levels are scheduled in successive periods. Each period, equivalent to two modules, accommodates a single grade level (Figure 3)

In physical education each grade level has a specific objective dominating the structure of its basic curriculum. Seventh graders use a broad variety of fundamental skills to develop coordination, timing, balance, strength, agility, flexibility, and endurance. Game situations and relays that employ running, jumping, throwing, swimming, and ball handling skills are stressed. Units included in the curriculum related to sports situations that require specific instruction are wrestling, tumbling, gymnastics, swimming, softball, and track and field. Rhythmic instruction, limited to the girls' program, encompasses folk dancing

	I	II	III	IV	V	VI	VII	VIII
		9	9	7	7	8	8	
Urbain	X8		Spec Ed.	Spec Ed		X	X	FREE
Leider		X	X	X	X	X		
Magnuson	Adapted X		X	X	X	X		
Meadors		X		X	X	X	X	
Rudolph		X	X	X	X		X	
Sullivan		X	X	Pool	Pool		Pool	

Women	I	II	III	IV	V	VI	VII	VIII
Stemmer		X	X	X	X	X		FREE
Shane		X	X		X	X	X	
Lane		X	X	X		X	X	
Hegarty			X	X	X	X	X	
Johnson		X		X	X	Pool	X	

Figure 3. **1969 - 1970 PHYSICAL EDUCATION SCHEDULE**

and rhythmic games. "Drown proofing" is in the seventh grade curriculum as a water safety feature for all students.

Units range from 5 to 15 periods. The time variance depends upon the versatility of the skill or sports situation being taught.

Emphasis in the eighth grade is on competitive games and sports activities involving sports objects. Units are distributed seasonally with the exception of swimming and gymnastics, which are offered intermittently throughout the year, and tennis, which is offered in the fall and spring. The curriculum deviates slightly from the emphasis on competitive games and sports activities by introducing the coeducational units of square dancing and recreational games.

Seasonally, the physical education staff establishes a potential sports offering. This is broader than the staff or facilities can handle per season and must be reduced to a feasible size. In turn, this is followed by a general introduction of one to two periods' duration for each sport possibility. Students use this introduction in addition to personal desires and interests to select the final curriculum.

Units or combinations of units usually require 20 class periods, of which 5 to 7 are used for general introduction to the sport.

Ninth graders are introduced to life sports, or sports with carry-over appeal, to encourage students to think about sports activities as an integral part of their present social activities and to make them aware of lifetime fitness. Coeducational units reinforce these goals as the student comes to realize he is involved in a sports activity in a social atmosphere and one that would also have adult appeal.

Cooperative planning by the staff and students has made the ninth grade physical education period a highlight in the students' day. Prior to class organization, the staff and the students together survey a possible calendar of physical education activities. Students relate to staff proposals according to previous exposure, interests, and desires. Occasionally they suggest additional activities, and whenever possible, these are initiated into the curriculum. Students then elect the activity in which they will participate. At times this is within the same period, or during additional periods of the same day, in subsequent units.

The length of the unit varies from 10 to 20 periods and a new selection is made as each unit terminates. Greater teacher flexibility and a more abundent sampling of student electives result from the coeducational structure of the ninth grade curriculum.

HEALTH CURRICULUM:

SEVENTH TO NINTH GRADES. Twenty periods of health education are taught, in block form, at each grade level. Seventh graders have units on tobacco, alcohol, sex education, and drugs. First aid, physical fitness, social adjustments, and dating are units introduced in eighth grade. The ninth graders

do independent study in all areas of health. All forms of media, field trips, and outside speakers are used.

NINTH GRADE

ELECTIVES. The following is a list of the electives offered:

Coed football	Skeet shooting	Tennis	Rec. games
Coed basketball	Fly casting	Orienteering	Volleyball
Coed wrestling	Snowmobling	Broom hockey	Outside winter games
Coed gymnastics	Cross-country skiing	Curling	Slimnastics (girls)
Coed ice and field hockey	Skating	Modern dance	Circuit training (boys)
Archery	Bowling	Scuba diving	
Gun safety	Golf	Lifesaving	
		Social dance	

FACILITIES. When the first addition was made on the high school building, teachers' ideas and suggestions were incorporated into the planning and the results were quite satisfying. Again, when the first junior high school was proposed, teachers were requested to submit their department's needs. Extensive investigation and curriculum needs determined the faculty's recommendations. Therefore, the facilities were constructed around the junior high school program and were quite adequate.

Facilities at Nicollet Junior High School were duplicated in all respects, except for slight modifications or additions that improved the teaching situation and expanded the educational possibilities.

SUMMARY. Organizational patterns in physical education are numerous and each appears to be unique in structure. However, examination of the more successful ones exposes several similarities.

In all instances, the school administrators recognize physical education as an integral part of the total educational program. They spend energy in constructing a schedule that will encourage innovations and flexibility in all areas of education.

Consistently, student needs motivate the organization and structure of the physical education program and the staff solicits student participation in both planning and promoting the curriculum. When a curriculum is student orientated, it will be subjected to more frequent modifications and changes.

The staff must be flexible enough to adapt to student needs, interests, and ideas. In accord, successful programs are usually initiated and directed by staff members who have an interest and an investment in their profession beyond their original professional training.

Such programs have positive rapport between the men and women physical education teachers. Planning and working together broadens coeducational opportunities, expands teacher resources, and creates harmonious sharing of equipment and facilities.

LEE WRIGHT

PARAPROFESSIONAL PROGRAM FOR PHYSICAL EDUCATION

"Differentiated staffing" has brought new educational roles to many districts across the country. The educational benefits of allowing teachers more time to perform professional duties and the financial benefits of compensating others to do more routine tasks have produced the paraprofessional. This particular article will deal with the use of paraprofessionals in physical education at Old Orchard Junior High School in Skokie, Illinois.

School District 68, Skokie, Illinois is an upper middle class community with about 1,400 students in its junior high school. The school organization consists of three "schools," or houses within the school, with each house having its own block of approximately 475 students, made up of sixth, seventh and eighth graders. Each student is offered physical education 40 minutes daily, in classes of 70 to 80 students with 2 teachers and 1 paraprofessional.

The teacher is responsible for all planning and teaching but the paraprofessional is assigned any number of routine responsibilities. These may include the following:

1. Supervising the locker room
2. Setting up the field or gym
3. Administering make-up tests
4. Directing and leading calisthenics
5. Refereeing or umpiring games
6. Assisting with record keeping
7. Working with student groups on specifics requiring practice

Recruitment for these positions began with establishing contact with area universities that would place graduate students in part-time positions. Advertisements were also placed in local newspapers. Now that the program is in effect, a backlog of applications exists and recruitment is no longer necessary.

Qualifications for physical education paraprofessionals include physical fitness, knowledge of team sports, interest in students of this age, and willingness to be trained. Preschool workshop is used as the training period, with frequent after-school sessions given during the year for specific duties.

As Figure 1 shows, two professionals, along with one paraprofessional, are on duty every period. During this period, the teachers give the class all directions and instruction. Teachers begin and dismiss all classes. Teachers handle all discipline problems. Since teachers are always present and since paraprofessionals perform all duties under the specific direction of a teacher, the question of legal liability does not exist. The teachers assume all legal responsibility and liability.

The advantages of such a system are obvious. The teacher is able to give much more individual help, he can work with small groups of students on a particular skill, and he can easily regroup students on the basis of a particular interest or weakness. In short, the teacher is free from innumerable clerical and physical responsibilities to *teach*. Another system would require more professionals (financially impossible) to give the same kind of service.

Since Old Orchard Junior High School also has a number of paraprofessionals in other departments, parents do not see anything unusual or negative in this system. Parents are informed, via written communication, parent orientation nights, and open houses, of the large number of paraprofessionals employed and their usefulness in this school. As taxpayers, as well as parents, they are grateful that steps have been taken to provide this type of program at such a low cost.

Periods	*Time*	*No. of Students and Grade*		*Teacher #1*	*Teacher #2*	*Teacher #3*	*Paraprofessionals (2) ½ time 8:40-12:00 12:00- 3:20*
		Boys	*Grade*				
1.	8:46 to 9:26	75	7		X	X	X
2.	9:30 to 10 10	75	8	X	X		X
3.	10:14 to 10:54	72	7	X		X	X
4.	10:58 to 11 38	78	8	Lunch	X	X	X
5.	11 42 to 12.22	85	6	X	X	Lunch	X
6.	12:26 to 1:06	87	6	X	Lunch	X	X
7.	1:10 to 1:50	73	8		X	X	X
8.	1:54 to 2:34	69	7	X	X		X
9.	2:38 to 3:20	88	6	X		X	X

Figure 1. **OLD ORCHARD JUNIOR HIGH SCHOOL COMPLETE PHYSICAL EDUCATION SCHEDULE**

EDWARD J. WILMOWSKI
P. EDWARD PUCK
SYLVIA MATCZAK

COEDUCATIONAL PHYSICAL EDUCATION CLASSES

Presently in its sixth year of operation, Hinsdale Township High School, South, is located in Darien, Illinois, a new suburb southwest of Chicago. It is a four year high school, grades 9 through 12, with a growing enrollment, currently about 1,500. The physical education staff includes six men full-time instructors and four women full-time instructors. Most of the men instructors' assignments include teaching driver education. Two men are assigned teaching responsibilities in the swimming pool. One man directs the combined department for physical education, driver education, and athletics. A lead teacher is appointed in each section of the department: physical education for boys, physical education for girls, driver education, and aquatics.

The physical education plant has eight indoor teaching stations. These include the pool, indoor track, weight lifting room, wrestling room, gymnastics, balcony, auxiliary balcony, and main gymnasium which can be divided with an electric door. The outside facilities include three soccer fields, three football practice fields, an archery range, a golf range, two baseball diamonds, and a quarter mile track with appropriate field event areas.

Hinsdale South presently operates on a 7-period day with 50-minute periods. The curriculum for the freshman and sophomore students is considered, by design, traditional in nature with emphasis upon major muscle groups and general cardiovascular development. These are attained through a vigorous program of basically team sports and activities. As in many programs, the

junior and senior activities include recreational games which lend themselves well to becoming carry-over activities for use in leisure time.

GROUPING

ARRANGEMENTS. This plan is carried one step further at Hinsdale South. The junior and senior level classes are combined and offered each of the seven periods of the day. The concept of combining the classes and offering the course each period results in about 100 students per period. The boys in each class are assigned on the class lists to one man instructor, while the girls are assigned to one woman instructor. A third swing instructor is assigned to the pool each period. When, for example, a freshman boys' class goes to the pool for swimming instruction, the freshman boys' instructor reports to the junior-senior program. His original class is taught swimming by the swimming teacher. By having three instructors to work with the 100 students per period, two objectives are accomplished. The class load is distributed among three instructors rather than two, and the activity offerings are increased.

ELECTIVES. In working with the junior and senior students, it has been found that if they have a choice of activities, they will generally do a better job, cause fewer problems, and enjoy themselves more than in a rigid traditional class. The choice of activities is present throughout the year. The following is a list of the activities generally offered each year. It should be noted that even lifesaving and water games are offered as corecreational activities. No problems have resulted from this arrangement.

Junior-Senior Boys Electives	Junior-Senior Girls Electives	Junior-Senior CoRec. Electives
Fall	*Fall*	*Fall*
Flag football	Softball	Tennis
Flickerball	Flickerball	Archery
Softball	Gym and trim	
Individual physical fitness	Individual physical fitness	
Winter	*Winter*	*Winter*
Individual physical fitness	Individual physical fitness	Lifesaving
Basketball	Recreational games	Badminton
Wrestling	Rhythmic gymnastics	Volleyball
		Water games
		Gymnastics
		Dance (social-folk)
Spring	*Spring*	*Spring*
Individual physical fitness	Individual physical fitness	Golf
Track	Tennis	Billiards
Tennis	Track	Bowling
		Outdoor rec. (camping, angling, hiking)

Since students can select their activities, physical education classes are socially more appealing and relevent. Students believe that their individual needs are better met through this arrangement than through the traditional program. In addition to the activities described, a student may, with his instructor's approval, enter into an independent study program of any duration supervised by the lead teacher in physical education. To date, those electing this program have been concerned with individual physical fitness. The students are required to write a list of objectives and means of attaining and measuring them.

RONALD E. WELCH

POWAY HIGH SCHOOL PHYSICAL EDUCATION PROGRAM

THE SCHOOL. Poway High School, Poway, California is located in a rural setting. Within five miles are several large housing tracts which are largely responsible for the rapid growth of the high school. Grades 9-12 have doubled within three years (from 850 to 1,700 students) and some estimates see the high school population doubling again in three years. The area has an income approximately two thousand dollars per year above the state average.

EARLY PHYSICAL EDUCATION PROGRAM. When Poway High School began operating under a modular schedule five years ago, the physical education department staff decided the curriculum should take full advantage of the opportunities offered by such a schedule. The curriculum was expanded to provide semester offerings in gymnastics, tumbling and trampoline, tennis, and wrestling, as well as in the traditional team and individual sports. Instruction took place in conventional class groups and in increasingly popular laboratory sessions. A major goal was to provide the instructor time to help students gain advanced skills in those areas which might carry over into their adult years.

PRESENT PHYSICAL EDUCATION

PROGRAM. The physical education program at Poway High School is based on the premise that students with a high degree of skill (as relating to their potential, and competing against equally skilled opponents) will enjoy their activity and feel a sense of personal achievement.

The staff feels that more lasting participation comes from students well prepared in at least one activity, than from students who are only exposed to several activities. However, the staff encourages students with good physical ability to explore several areas and become proficient in as many areas as possible.

The staff further believes that with such heavy emphasis on skill development, which often fails to include vigorous exercise, that physical fitness may suffer. It is hoped, however, that if a student can be motivated to develop his skills, he will attend open labs and participate in his favorite activities outside of school.

The current program has four phases: first, students are enrolled in a small group class in a skill area of their choosing. This class meets twice each week for a total of 2 or 2½ hours, and the emphasis is entirely instructional. Fifty-seven separate skill sections have been scheduled with class sizes ranging from 9 to 36 students, depending upon the activity. The average number of students to each instructor in the skill section is 29. It is believed that with this ratio, skills can be *taught* and not just presented to the student with the hope that he learns.

In the second phase, each student is scheduled for a physical fitness laboratory, where he is regularly tested and records are kept on his progress. The class is 15 minutes in length, twice a week, and is attached to the skill section.

The third phase of the program involves regularly scheduled competitive laboratories. On Fridays, each boy is given the opportunity to compete with other students of a similar skill level in a team or individual activity which interests him. Four blocks of time (60 minutes each) are set aside for this program and all physical education teachers participate. Competition on the usual after school intramural basis is not practical at Poway mainly because of the community's rural nature. Less than 10 percent of the 1,700 students live close enough to school to walk.

The competition lab is intentionally large for two purposes. First, one instructor can schedule, supervise, and administer the lab (teachers help as supervisors) in a large group of 200 to 300 students. Second, making the lab ratios 70 to 1 allows the teacher time to meet with small classes in the instructional phase of the program and leaves the instructor with more than the usual unscheduled time. The unscheduled time is used to meet with students in open labs for further skill development. Second, the lab must be large to offer enough choice to the student and enough competition within each activity. The competition lab gives a choice of novice or open competition in the following areas: tennis, badminton, volleyball, handball, touch football, and three-man basketball. After experimenting with the competition program for one year, the wom-

en instructors came to the conclusion that girls do not desire as much competition as boys. For this reason, the girls are currently receiving a third day of skill class on Fridays.

The open laboratory period is the fourth phase of the physical education program. Since teachers are scheduled to meet regular classes approximately 15 hours a week, they have considerable time to meet with individual students in open laboratory sessions where skills are developed and refined (Figure 1 on page 72). To guide the student in the open labs, and to provide a basis for evaluation, Poway's staff has developed a performance curriculum for each activity.

These contain a progressive list and description of the skills involved and a space for the instructor to evaluate the student in each of the skills. Evaluation is done on an "unsatisfactory," "satisfactory," or "outstanding" basis. Not until a student has mastered a given skill well enough to receive at least a "satisfactory," is he encouraged to move on to the next progressive step. Such a system also provides the student with both a permanent record of his strengths and weaknesses and a guide to those areas requiring special concentration during his laboratory work. The student, in effect, is then able to participate in creating his own plan of action.

PROGRAMMING

OF STUDENTS. Each student lists his first and second choices of physical education activity. For example, a computer selects a time in the total student schedule when the 12 people qualified and requesting advanced tennis can meet and places them all in that section. Beginning tennis this past semester had 250 requests and the computer had much more freedom placing students in 9 sections. Figure 2 (page 73) is an example student schedule arranged by computer. Students rarely are unable to be scheduled into their first or second choice; however, when the computer cannot schedule a student, the administrator hand schedules that student. The student with a conflict (his choice of classes do not all fit) in his schedule is permitted to miss the last module of a class, academic or nonacademic, to make the beginning module of another class. The student in conflict is counseled on the fact that he is being given a special consideration to allow him to take the program he chose. Relatively few students have schedule conflicts. Students are permitted to take any beginning level class twice and need Instructor permission to go on to the intermediate or advanced level in that activity. Some activities have not yet generated enough student interest to require intermediate or advanced levels. A student is allowed to repeat the activity more than twice (where a higher level is not offered) if the instructor feels the student is still gaining higher skill levels. Proficiency test scores form part of the instructor's decision of recommending beginning level students to go on to intermediate or advanced activities. Transfer students wishing advanced placement are counseled and tested to best determine the correct class level for them (Figure 3 on page 73).

	MONDAY	RM	TUESDAY	RM	WEDNESDAY	RM	THURSDAY	RM	FRIDAY	RM
2 8A									762 Bys Comp	Fld
3 8B									" "	
4 8C									" "	
5 8D									" "	
6 9A										
7 9B										
8 9C			783 Basketball	Ct			783 Basketball	Ct		
9 9D	797 Adv Volybl	Vly	"		797 Adv Volybl	Vly	"			
10 10A	" "		"		" "		"		764 Bys Comp	Fld
11 10B	" "		"		"		"		" "	
12 10C	" "		"						" "	
13 10D	" "				"				" "	
14 11A										
15 11B										
16 11C										
17 11D	835 Adv Tennis	Ten	787 Adv Basketbl		835 Adv Tennis		787 Adv Basketbl			
18 12A	" "		" "						763 Bys Comp	Fld
19 12B	" "		" "		"				" "	
20 12C	" "		" "		" "		"		" "	
21 12D	" "		" "		" "		"		" "	
22 1A			" "				"			
23 1B			832 Int Tennis	Ten			832 Int Tennis			
24 1C			" "				" "			
25 1D	813 Badmntn	Gym	" "		813 Badmntn	Gym	" "			
26 2A	"		" "		"		" "			
27 2B	"		" "		"		" "			
28 2C	"				"					
29 2D	"				"					

Figure 1. **SAMPLE WEEKLY STUDY PLAN FOR A POWAY HIGH SCHOOL PHYSICAL EDUCATION TEACHER**

Figure 2 **EXAMPLE COMPUTER-PLANNED STUDENT SCHEDULE**

Student's Last Name	First Name	Grade Level	Student Number	Student Schedule
LUMPKINS	MARK	1 10	523455 1 70 71	

QTRS.	Total Mods	Starting Module M	T	W	Th	F	Course Number	Course Title	Teacher's Name	Room
0	1	HR	HR	HR	HR	HR	038	11 SOPH HR	RIGHTMER	F 6
1	3	2B	2B	2B	2B	2B	227	11 INTR LIT	GRANT	H 7
1	5	12C		12C		12C	363	11 METAL 1	GARDNER	S 1
1	3	8A		8A		8A	538	21 DRIVR ED	ROBISON	K 99
1	3		9B		9B		540	22 DRIVR ED	ROBISON	H 15
1	3	10B		10B			664	21 EUROPE	SMITH	K 99
1	3		1C		1C		668	22 EUROPE	SMITH	F 10
0	4					10A	764	11 BYS COMP	MARINCOVIC	FLD
1	5	8D		8D			769	11 BASEBALL	CHRIST	FLD

Figure 3. **POWAY HIGH SCHOOL BEGINNING LEVEL BASKETBALL PROFICIENCY TEST**

1 Make 6 consecutive free throws								
2 Make 10 lay-ins alternating hands (right, left) and sides of the court in rhythm in 30 seconds								
3. Tip ball out of rebounder at 16 inches above standing reach height								
4. Demonstrate the following in 1 on 0 situation.								
a Baseline drive from 3 spot both left and right using a maximum of 2 dribbles								
b. Strong hand hook shot from 5 spot in acceptable form								
5. Demonstrate in a 1 on 1 game of 20 points, against an opponent of equitable ability 4 of the following 7 skills:								

a. Check out								
b Cross-over dribble drive								
c Block shot								
d Body position causing offensive charge								
e Steal ball from dribbler								
6. Demonstrate in a 3 on 3 game of 20 points, against opponents of equitable ability 7 of the following 13 skills:								
a. Set a pick and roll								
b. Drive over a pick								
c Pass to the roller on a pick and roll								
d Pass to open man in free lance situation resulting in immediate lay-in								
e Score from a post move								
f. Rebound own shot								
g. Check out and obtain rebound								
h Score on offensive rebound								
i Cause charging foul								
j Beat cutter to the spot in post area forcing the lob pass								

VIDEOTAPE. Physical education instructors at Poway have made extensive use of the videotape recorder to aid in skill development. Students are able to see themselves perform and have a basis for correcting fundamental errors. Again, as with athletes, it has been found that a student does not really know what he looks like while performing the activity. If executing a skill feels comfortable, the student assumes he is executing that skill correctly when sometimes he has just formed a habit and is reinforcing improper technique. Students in the class using proper form can be compared to those using improper form to show that proper form succeeds and improper form does not succeed.

TEAM TEACHING. Team teaching is limited to sections such as gymnastics where many students request the class, but facilities are not available for enough sections. This past semester, requests for classes held in the gymnasium exceeded the total number of hours available during the week. Because of southern California's favorable weather, many classes are held outdoors. All volleyball and beginning basketball classes are held outdoors.

PROGRAM

INTERPRETATION. The program is interpreted to parents through a student-parent handbook, occasional newspaper articles, open houses, and general distribution of articles.

FUTURE

TRENDS. It appears obvious that a major trend in education today is toward modular scheduling. It appears, also, that far too few schools have used the modular schedule to full potential in the development of meaningful physical education programs. Poway High School, which has made significant changes in its program as a result of modular scheduling, is eager to assist other schools in their efforts to do the same.

JANE AXTELL

AN ELECTIVE PHYSICAL EDUCATION PROGRAM FOR HIGH SCHOOL GIRLS

We are living in a time of great cultural change. The schools and the students reflect the conflict brought about by these changes. High school students today are bewildered but concerned about the direction of their own lives and the direction of society. They are demanding a strong voice in the total educational process. They are rebelling against tradition, against conventional methods of teaching, against subjects which to them, seen to be unrelated to today's life.

As teachers, we must try to help the student make his high school experiences meaningful to his concerns, to give him the opportunity and direction to develop his self-confidence and identity. He must find value in his work, take pride in what he accomplishes, and be encouraged to try to improve his performance. Each student must be accepted as an individual, needing unique opportunities in order to achieve his optimum development.

ELECTIVE

PROGRAM. An elective physical education program greatly increases the possibilities for meeting individual differences. It allows students to pursue those activities they most enjoy. It also tends to increase the student's enthusiasm for participation in physical education. An elective program can be provided with comparative ease in a large high school where there are several

te ching stations and an adequate staff. On the other hand, a choice can be given where there are only two teachers and two stations.

GROUPING. For many years the girls' physical education program at Oak Park and River Forest High School has been on an elective basis. Each student is enrolled in a daily physical education class during his entire time at the high school. Girls are assigned to classes in accordance with their ability and choice, rather than being grouped according to their year in school. There are department requirements which each girl must complete within four years. These are: one six-week term of team sports, individual sports, posture, fundamentals of sports, health, either badminton or tennis; two terms of dance; and four terms of swimming, one each year. However, if a girl has successfully completed the American Red Cross Lifesaving course she need not take swimming during her senior year. Beyond these requirements, the program is elective. Moreover, a girl may elect to fulfill the requirements at any time prior to graduation.

The girls' physical education department is very fortunate in having nine teaching stations and 11 staff members. This allows a variety of activities and gives the students a wider choice. Since the school as a whole is on a six week grading system, physical education activities are changed every six weeks, giving each girl the opportunity to take six different activities during the school year. She may have six different teachers during that time. The personnel of each class is also entirely new in each grading period.

Any girl new to the school, freshman or transfer student, is given an opportunity to be rated on her swimming. Thus a freshman girl who is a good swimmer may go into intermediate swim or one of the swim classes requiring an even higher rating. The same thing is done in tennis. Volleyball and basketball are each offered three times during the year. These are at different skill levels. A girl who has had a beginning sport one year may rate high enough to go into a class at the intermediate level the following year. This system eliminates much of the repetition of beginning techniques and allows the more highly skilled girl to compete with others of her own ability.

COURSE OFFERINGS. The courses offered during each six-week term of the year 1970-1971 are listed below:

FIRST SEMESTER

1st six weeks	*2nd six weeks*	*3rd six weeks*
Hockey	Fundamentals of sports	Basketball
Tennis	Apparatus	Stunts and tumbling
Archery	Basketball	Fitness and exercise
Intermediate swim	Modern dance	Intermediate swim
Folk and square dance	Beginning swim	Volleyball
Fundamentals of sports	Volleyball	Badminton
Golf	Archery	Folk and square dance

SECOND SEMESTER

1st six weeks	*2nd six weeks*	*3rd six weeks*
Badm nton	Archery	Track and field
Volleyball	Speed-a-way softball	Speed-a-way softball
Freshman health	Freshman health	Apparatus
Posture A	Modern dance	Golf
Posture B	Synchronized swim	Catch-up swim
Modern dance	Badminton	Softball
Lifesaving	Basketball	Fitness and exercise

These classes are offered during each period of the day.

In the fall, the girls are given a list of the year's activities offered during each term. They may plan their year's program at this time. Each girl has a physical education record card. On this card is stamped the activity taken during each term for the four years. The rating in the activity is recorded on the card. A place to record the completion of a department requirement, such as a team or individual sport, is provided. Doctors' notes and pertinent health information are copied onto the card. The physical education record card is in the hands of the current physical education teacher. Thus the teacher has a complete record of each activity the girl has completed, her skill rating in each, and her health record.

Approximately 220 girls are scheduled for physical education each period. This number must he divided into seven classes, somewhat balanced in size. The individual sports classes are kept smaller than the team or group activities. On the first day of each six-weeks term, the 200 plus girls meet in one large gymnasium during the physical education period. Each girl collects her physical education record card from her previous tacher. The new activities to be offered are reviewed. Then the girls are allowed to choose their new activities with seniors having first choice, followed by juniors, sophomores, and freshmen. If it happens that too many girls are choosing the same activity, the class is closed as the maximum number for that activity is reached. The new teacher picks up the physical education record cards from the girls, informs her new group where the class is to meet the following day, and tells them what items of equipment they will need. The second day of the term is spent checking equipment and assigning lockers.

The system requires organization and much paper work, but it gives the feeling of starting entirely anew for both students and teachers. Each group seems to feel that it well worth the extra work.

Upon the advice of their physicians, girls can be shifted from vigorous activities to more restricted ones, such as archery or golf, and still remain in a regular physical education program. For the highly skilled girl and for some who are interested in the field of health and physical education, there are two special leaders classes.

The after school program is open to all girls. The many activities offered are determined by the activities of the daily program and by interest. Besides this open program, special groups represent the school. The two dance groups are Senior and Junior Orchesis which jointly present a program each year. The Aquatic Arts swim group, which is coeducational, also presents a yearly show. There are interscholastic teams in archery, badminton, golf, hockey, softball, speed-a-way, swimming, tennis, and volleyball.

There are further possibilities for enrichment of the program. Several senior girls are now working on their own individual study projects for which physical education credit will be given. The staff is exploring the possibility of using a nearby ice skating rink by increasing the length of the first and last period classes in the day. If this were possible, the girls in the class would probably meet only three times a week instead of five. Th[illegible]ame plans could be developed for use of a bowling alley.

One of the strongest features of the department, in student opinion, is the elective program. This was indicated in an attitude questionnaire recently filled out by senior girls. In this time of student unrest, of young people being increasingly conscious of "self," perhaps it is becoming increasingly important for us to provide every possible way for a student to find and express himself as an individual if we are to hold his interest.

K. CASH LUCK

INNOVATIVE PHYSICAL EDUCATION THROUGH ELECTIVES

Regina High School, through its modular scheduled physical education program, helps girls learn activities which they can use as adults. Believing that adult leisure time activities are becoming more and more important, Regina High School's physical education staff has created a modular schedule of electives, six of which are off-campus courses using community recreation centers.

Regina High School is a girls' school of 1,000 students, located in Minneapolis, Minnesota. Its faculty, administration, students, and parents are on the whole, flexible, supportive, and willing to try new ideas. This flexibility, plus the enthusiasm of the girls, are the strongest factors in developing an innovative program through flexible modular scheduling.

ELECTIVES. The department began its new program in 1968 by expanding its curriculum to include several on-campus electives, and four others—horseback riding, golf, bowling, and skiing—which use recreational facilities throughout the Minneapolis area. This program has been so successful that next year the department plans two additional off-campus courses, roller skating and swimming.

When a person who lives in a large city has time for recreation, his most easily accessible outlets will be sports centers. By providing opportunities for girls to participate and develop skills at such centers while still in school, Regina hopes that the students will continue these activities after their formal

education comes to an end, thereby enriching their lives and maintaining physical fitness.

Horseback riding classes, an off-campus elective, is geared to develop skill in riding, development of horse sense, and an extensive knowledge of horsemanship. The riding style is English, taught by two professional instructors. The girls groom, saddle, and bridle their own horses. The class consists of 15 students divided into three groups. One group rides for 45 minutes while the second group assists the instructor by coaching the riders, and the third is given instruction in care, conformation, and breeds of the horse. Every 45 minutes the groups rotate. In addition, the girls observe demonstrations of the Tennessee Walking Horse, the American Saddlebred, and the Harness Horse in action.

The 45 girls participating receive three hours of instruction each week. The fee is $34.00. Transportation is by car pool and each driver is given $2.00 per trip to help defray driving expenses. Next year the school's new microbus will be used.

Basic instruction in golf is given during the freshman year. Following two classes of review in golfing skills, girls who elect golf are taken by bus or car to a nearby golf course where the students practice the swing, using several clubs, on the driving range. After a good warm-up, they move to the three-par course. On a very cold day, students may remain in the gym where they view their own swing on videotape and compare it simultaneously with that of a professional golfer viewed on a film loop. Other days of inclement weather are spent at a golf club's computer center where each girl is able to measure the yardage she achieves with each club by stroking into a sensitized screen which records the force of her hit. Following this practice, a film is set on a screen at one of the golf facilities. As the student plays a hole, the picture changes, showing where her ball is on the course. The number of yards left to go is indicated on the screen. When she reaches the green she putts into a hole which is laid out in front of the screen. At the computer center, as well as at the golf course, a professional golfer gives additional tips.

Depending on the weather, four trips are made to the golf course and three to the computer center. If the class is large, a bus is chartered, and if it is smaller, parents drive and are given $1.50 round trip to help defray their expense. The fee for this course is $12.00.

Bowling is an outgrowth of freshman year instruction, and the second year is begun by a review in the gymnasium, concentrating on spare pickups. The next seven classes are spent at local bowling lanes where instruction is given by the teacher and a professional bowler. The students compete in an interclass league. There are four classes totaling 75 students. Transportation is by chartered bus and the fee is $10.50.

The 100 students who elect skiing, ski once a week for nine weeks, six times with lessons, three without. A local ski area was chosen for its snow machines which assure good skiing. Girls are placed in classes with a maximum of 10 girls per class, are taught at their own ability level by certified ski instructors. The bus leaves school at 1:20 and returns by 5:30 or 7:30, whichever the

girls choose. Girls furnish their own equipment or rent it at the skiing area. Transportation is by chartered bus and skis are transported in a trailer. The fee for the course is $32.00.

Instruction in basic dance and exhibitional roller skating will be given next year by a professional skater and father of a Regina student who, because of his interest in the school, is donating his services. The first class will be at a roller skating rink and the following classes in the gymnasium. The rented skates will be transported by the sports center. This class will meet eight times and the fee for the course is $4.25.

Another new addition to next year's elective program is swimming, to be taught at a new nearby Y.M.C.A. pool. The teachers will be Water Safety Instructors, hired by the Y.M.C.A. The school must pay a $100.00 preregistration fee for each course and the fee for each girl will be $6.00. Besides basic swimming classes at beginning, intermediate, and advanced levels, other course selections will be junior and senior lifesaving, scuba diving, and a "whale" class which offers a different aquatic activity each class.

The form on course selection (Figure 1) is divided into four sections; the girl selects each section in order of preference. Within each section she chooses one course for each quarter. Last year each student was scheduled by computer into one of these sections when her total school program was developed.

This spring, scheduling for all classes in the school will not be computerized, but the girls will schedule themselves into each section from a master schedule. Students will be provided with course descriptions and the above selections offered in physical education. They will then schedule themselves into the section they have chosen. The following day, in physical education class, sophomore girls will select the off-campus courses they want for the next year. If a student selects one of these courses, she is required to return a form, signed by her parents, acknowledging responsibility for payment and parental good will in case of accident.

The choice of on-campus courses is made the following fall because Margaret Neumann, teacher of physical education at Regina High School, found that many interests change over the summer. The student is better satisfied if she can choose the majority of her electives for her physical education program at the beginning of the school year.

Off-campus course selection may be altered sophomore year with parental permission. Early selection of off-campus courses is necessary for making arrangements with the bus company and the sports center involved and for being assured a place in these classes.

PROGRAM IMPLEMENTATION.

Developing this on-campus, off-campus curriculum took months of preliminary planning and study. Step one was a brainstorming session which resulted in several dream schedules that might be used in a flexible modular schedule.

(931)				
___	1 *Swimming___	2 Volleyball___	3 Gymnastics___	4 Archery___
Choice no.	1 Recreational Games___	2 *Bowling___	3 Basketball___	4 *Golf___
	1 Tennis___			
(932)				
	1 *Swimming___	2 *Bowling___	3 Fun, Fitness, Tumbling___	4 *Golf___
___ *Choice no.*	1 Tennis___	2 Archery___	3 Skiing___	4 Track and Field___
	1 Trampoline___			
	1 Balance Beam___			
(933)				
	1 Volleyball-	2 Archery___	3 Roller Skating___	4 Softball___
___ *Choice no.*	1 *Horseback	2 *Bowling___	3 Gymnastics___	4 Tennis___
(934)	1 *Swimming___	2 Gymnastics___	3 Archery___	4 Tennis___
___ *Choice no.*	1 Campcraft and Recreation___	2 *Bowling___	3 *Skiing___	4 Softball___
	1 Modern Dance___			

* Off-campus courses offered to sophomores, juniors, and seniors. Other courses open only to sophomores.

Figure 1. **COURSE SELECTIONS**

Progress was slow at first because the staff could not find a workable program that would fit its philosophy. Then the idea of electives and off-campus courses hit, and in a short time the new program was roughly formulated.

The plan was discussed with the principal who agreed that it looked workable and gave the staff the go-ahead. First, the athletic centers were called and costs and facilities discussed. The hours a particular center would be needed were left open until scheduling was more complete.

Instruction was outlined, and horseback riding and skiing instructors were provided by the centers. Next, the bus companies were called and their rates decided. The response of every center and bus company was very positive and they were all willing to mold their programs to Regina's needs. For each course, costs were tabulated and a student fee determined.

Because the student body contains various socioeconomic backgrounds (the majority of students are in a lower middle income group and come from large families), parents were consulted about including courses which would have additional cost. The parents responded favorably, realistically aware of the costs. In addition, the physical education department provided popular options opposite fee courses so that a girl need not feel deprived should she not be able to elect an off-campus course. In a survey made the following year, it was found that 74 percent of the girls in fee courses earned the money themselves. Therefore, it was concluded that if a girl wants a course she can earn the money without pressuring her family.

SCHEDULING. All off-campus courses were planned to meet once a week for 2 hours. Several of the on-campus courses were to be scheduled several times a week for shorter lengths of time. Included in this group were: slimnastics—scheduled for one 40 minute block of time, and four 20 minute blocks of time each week; and archery scheduled for five 40 minute blocks. The latter was impossible in a school this size with the present method of scheduling students.

Although this was not possible at Regina, the author used this idea and developed it by activity and ability with 100 girls at a camp in Wisconsin. For example, intermediate tennis was offered three times a week for 90 minutes. Seven- and eight-year-old beginners benefited from going to class every day for 30 minutes. Beginning horseback riders met more often and for shorter periods of time than advanced riders, who met just twice a week and were then able to go for longer rides. The advanced class was also scheduled back to back with campercraft so the child could go on trips and know the necessary camping skills. This program was found to be very effective and the conclusion was that a school of smaller size may find an advantage in redistributing time allotments according to student ability and activities being offered on-campus.

To formulate Regina's schedule, a preliminary list of electives was given to the students, with seasonal courses listed as available all quarters, so that a true interest tally could be obtained. The 13 most frequently selected sequences of the four electives were then offered to sophomores.

Interviews have since been held with freshmen and sophomore girls to maintain a desirable selection of courses according to how they see their needs and interests. It is necessary to continually review combinations within any section so a girl doesn't feel pushed into courses which do not meet her individual needs. Students are also asked for ideas to make course content more effective. As a result, the girls can feel it is truly their program.

The gym is open as a resourse center whenever there is not a class. There is an average turnout of 30 girls each module and girls practice skills the are learning in class. Regina will soon have a new film loop projector, and loops of skills that are difficult for the girls to learn will be shown continuously. A girl will then be able to view the skill as an expert performs it and then try to improve her performance of a skill while simultaneously viewing the skill from the film loop.

Figure 2 (page 86) is an example of a physical education teacher's schedule in the program described. Both teachers' schedules must be identical on the sophomore level. Resource center time is divided between the two teachers.

Teaching in a flexible modular schedule can be both exciting and demanding. Since each sophomore class of 40 to 60 girls is divided into two electives each quarter, the teacher may teach her strengths and her stronger interests. It is important that teachers supplement each other in abilities and interests. The long block of time provides an additional challenge to teaching as it is important to be creative, varying activity in order to be interesting, and not too physically tiring for the student. On occasion, the two teachers in the department will exchange classes, should one be stronger in the particular skill being taught. Occasionally a student from the class or outside of the class will be asked to teach a skill she has developed.

JUNIOR-SENIOR

TEACHING PROGRAM. Next year the physical education department plans to begin a new junior-senior elective course on-campus which will be taught by students. Many girls at Regina have well developed skills in particular activities and are excited about being able to teach. This can be seen as another dimension in providing opportunities to gym aides to further develop their potential and offer additional experience should they choose a physical education major in college. The girl teaching a class asks for the number of weeks she wants for her course, writes a course description, and writes a teaching packet for the activity she will teach. This course will be worked through this year and ready to go for next year.

INTERIM PROGRAM. A special addition to the entire Regina curriculum this year is a week long interim program. Regina, realizing that relevant education often takes place outside the school, is planning an interim week of no formal classes. There are many different activities going on, some of which

Mod	Time	A	B	C	D	E
1	8 20	homeroom	homeroom	homeroom	homeroom	homeroom
2	8 40		925/06 Phy Ed I	925/02 Phy Ed I	925/06 Phy Ed I	025/02 Phy Ed I
3	9 00		925/06 Phy Ed I	925/02 Phy Ed I	925/06 Phy Ed I	025/02 Phy. Ed. I
4	9.20	resource center	925/06 Phy Ed I	925/02 Phy. Ed. I	925/06 Phy Ed I	925/02 Phy Ed I
5	9 40	resource center				
6	10 00	resource center	925/03 Phy. Ed I	925/04 Phy Ed I	925/04 Phy. Ed. I	925/03 Phy. Ed I
7	10 20	resource center	925/03 Phy Ed I	925/04 Phy Ed I	925/04 Phy Ed I	925/03 Phy. Ed. I
8	10 40	resource center	925/03 Phy Ed I	925/04 Phy Ed I	925/04 Phy Ed I	925/03 Phy. Ed I
9	11 00	925/07 Phy Ed I	resource center		resource center	resource center
10	11 20	925/07 Phy Ed I	resource center		resource center	resource center
11	11 40	925/07 Phy Ed I	resource center	925/07 Phy Ed I	resource center	resource center
12	12 00			925/07 Phy Ed I	resource center	
13	12 20			925/07 Phy Ed I	resource center	
14	12 40	Health			hall duty	
15	1 00	Health			hall duty	
16	1 20	932 Phy Ed II	933/01 Phy Ed II	931/01 Phy Ed II		934 Phy. Ed. II
17	1 40	932 Phy Ed II	933/01 Phy Ed II	931/01 Phy. Ed II		934 Phy Ed II
18	2 00	932 Phy Ed II	933/01 Phy Ed II	931/01 Phy Ed. II		934 Phy Ed II
19	2 20	932 Phy Ed II	933/01 Phy Ed II	931/01 Phy Ed II		
	2 40					
	3 00					

Figure 2. **REGINA HIGH SCHOOL 1970-71 BASIC TEACHING SCHEDULE FOR MARGARET NEUMANN**

may take the girls to London and Paris Several of the activities are related to the physical education program. The following are a few of these:

One group of girls is "living in" at a riding school. A student is teaching a week of gymnastics, groups are spending the week skiing, others are camping in the Arizona desert, while another group is roughing it in a survival camp in the snowy Minnesota northwoods. The outcome of their experiences should be educationally enriching for the whole student body.

BENEFITS OF PROGRAM. Margaret Neumann and the author enjoy noticeably less tension while teaching in this modular program because there is enough time to accomplish the goals. This program fits the students' needs and the teachers' needs, too. As a result, classes are more relaxed, creative, and flexible. The program is continually exciting and challenging to those who live in it, and its instructors hope that it need never fade into old-fashioned rigidity.

ROBERT BURSON

NONGRADED CURRICULUM AND MODULAR SCHEDULING

For some time physical educators have been aware of the hindrances encountered in teaching all students the basic skills necessary for present and continued interest in individual, dual, and team activities. Some of these possible stumbling blocks are:

(1) Too many students per class
(2) Heterogeneous grouping
(3) Limited weekly class time
(4) Lack of opportunity and motivation to use acquired skills
(5) Only a two year physical education requirement
(6) No electives offered
(7) Too large a class load for physical education teachers.

This article will examine how the nongraded curriculum and modular scheduling program at Athens High School is striving to solve the above problem areas.

THE

SCHOOL. The Athens City School District is located in the beautiful hills of southeastern Ohio. The total population within the area served by the Athens City School District is approximately 30,000 people. The makeup of the student body is such that an experimental program is ideal. Feeder schools for the high school provide students from schools which are both rural and urban,

public and parochial, experimental and traditional, and located in centers of poverty and in centers of affluence. The present enrollment at Athens High School is 1,179 students.

Athens is the home of Ohio University. The university offers a comprehensive program in secondary school education. A close relationship exists between the university and the schools, not only for practicing student teachers who are assigned to Athens High School, but also for the availability of knowledgeable resource people, and for privileges extended to the high school students at the university.

NONGRADED

PROGRAM. In the spring of 1966, with the aforementioned curricular and schedule shortcomings in mind, the entire faculty of Athens High School began planning a nongraded program of instruction. This initial step was made possible by a Title III grant of $104,000. The feasibility study of nongraded classes included the following ideas: visiting model schools in Florida, Illinois, New York, and West Virginia; personal sensitivity training to provide open and functioning channels of communication; and setting limits and designing framework for a nongraded instructional program.

Upon completion of the one year study of nongraded classes, all school departments voted overwhelmingly to implement this type of curriculum. A three year implementation funding of $513,000 was granted for May, 1967 through May, 1970. During this three year period of implementation the staff has continued to design, refine, and revise the nongraded instructional program. This has been accomplished by program evaluation from students, faculty, and visiting educational research specialists.

The nongraded curriculum at Athens High School provides that students are placed in learning situations according to present levels of skill achievement and physical maturity rather than chronological age or grade attainment. This allows provisions to be made for individual differences and interests by phasing students so that they may work comfortably with other students of similar abilities, whether freshmen or seniors.

FACILITIES. The students of Athens High School are completing their third year in a new 2¼ million dollar comprehensive secondary school. The educational specifications for this building were written with the idea of a nongraded instructional program becoming a reality in this new building. Highlights of the physical education facilities are:

(1) A large gymnasium with divider curtains so that four teaching stations are available
(2) An instructional swim tank 25' by 50'
(3) A large lobby area which provides another teaching station
(4) A separate weight room with a universal weight machine
(5) Locker rooms which can handle 100 students per period

(6) A combination athletic training and first aid room
(7) Outside area of 50 acres including a football stadium; track, baseball, softball, and soccer fields; archery range; outdoor education pond site;ski slopes projected tennis, basketball, volleyball, and handball courts; and projected pitch and putt golf area
(8) Carpeting and air conditioning in the building.

STUDENT GROUPING. The criterion for phasing students is the percentile score achieved on the AAHPER Physical Fitness Test. Phase 1 is from 0 to the 25th percentile, Phase 2 is from the 26th to the 40th percentile, Phase 3 is from the 41st to the 70th percentile, and Phase 4 is from the 71st to the 100th percentile. Students can phase up or down at the end of a grading period if there is a change indicated by their performance.

A two-year physical education cycle is required of all students. A student may start the cycle as a freshman, sophomore, or junior. However, once he starts the cycle, the student must remain within the cycle for two consecutive years. Additional elective physical education courses are available in the junior and senior years. The course descriptions for the required and elective offerings are listed below.

REQUIRED COURSES. General physical education is offered at four phase levels. Phase 1 and 2 students have primary stress on basic movement skills to allow eventual participation in individual, dual, and team activities. A personalized approach is used to improve the physical condition of each student. The Phase 3 and 4 classes strive toward excellence in physical conditioning. Students will develop into skilled performers in a variety of sports, and seek to become outstanding in gymnastics, dance, and a variety of recreational carry-over activities. All required classes meet four times a week, with three meetings of four modules and one meeting of two modules.

ELECTIVES. (All electives are offered to both boys and girls). Beginning and intermediate swimming, gymnastics, and advanced physical education are offered three times a week with each meeting four modules long. (The first three offerings are available as substitutes for one of the required courses.) The physical education leadership elective is offered to those students who have maintained a B average in previous physical education courses and have exhibited good teaching potential to aid in instructing in the general physical education classes. This course meets four times a week. The elective outdoor education class gives students desirable learning experiences which are not now included in most educational programs. This upper level course meets two times a week with each meeting five modules long. The final elective is sports appreciation which is geared to help students become understanding and knowledgeable spectators. This course has two meetings a week of four modules each.

MODULAR SCHEDULING. The modular sc[illegible] system at Athens High School was started in 1968 and is based on di[illegible] the day into periods of time called modules. The school day will commence with a 10 minute homeroom period followed by twenty-seven 15 minute modules and ending with a 10 minute homeroom period. A class period may be two or more modules in length. Time requirements among the various subjects taught may vary considerably in respect to total class time needed each week, optimum length of class meetings, and frequency of meeting times (Figure 1). The modular schedule allows sufficient flexibility to accommodate the differences. Typically, most students and teachers have a different schedule each day during the week. This is known as a weekly cycle. Once established, the weekly cycle remains stabilized throughout the year. This type of schedule will allow for the scheduling of

		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY	
TIME	MOD.	CLASS	PH.	CLASS	PH.	CLASS	PH.	CLASS	PH.	CLASS	PH.
8:05	H.R.										
8:15	1	Spanish	1	Spanish	1	Spanish	1	Spanish	1	Spanish	1
8:30	2										
8:45	3										
9:00	4	Math.	3	Math.	3	Math.	3	Math.	3	Math.	3
9:15	5										
9:30	6										
9:45	7	Gym-	4	Gym-	4	Social	4	Gym-	4		
10:00	8	nastics		nastics		Studies		nastics			
10:15	9										
10:30	10					Social	4				
10:45	11	Open				Studies		Open			
11:00	12	Lab						Lab			
11.15	13										
11:30	14										
11:45	15										
12:00	16									English	3
12.15	17			Social	4			Social	4		
12:30	18			Studies				Studies		English	3
12:45	19										
1:00	20			English	3						
1.15	21	Open								Open	
1:30	22	Lab								Lab	
1:45	23										
2:00	24										
2:15	25	Biology	3	Biology	3			Biology	3	Biology	3
2:30	26										
2:45	27										
3:00	28										

Figure 1. **TYPICAL ATHENS HIGH SCHOOL STUDENT SCHEDULE**

students and teachers for large group instruction (50 to 350 students) and small group instruction (10 to 15 students).

The modular schedule also provides for a reasonable portion of the students' day to be unscheduled. When not in class, he may schedule himself into an open lab, in either the gymnasium or swimming pool. The student can receive instruction or use this time for recreational activities.

The teacher's unscheduled time makes him available for open lab supervision, conference, and planning sessions (Figure 2). The physical education staff is composed of two women and two men with one additional part-time male instructor. Ohio University student teachers and field experience students assist in the classes.

Intramural programs are offered to both boys and girls on an after-school basis. A gymnastics club is in its second year, as is a karate club. Students

		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY	
TIME	MOD.	CLASS	PH.	CLASS	PH.	CLASS	PH.	CLASS	PH.	CLASS	PH.
8:05	H.R										
8:15	1	P.E.	3	P.E.	3			P.E.	3	P.E.	1
8.30	2					Lab					
8:45	3					Gym					
9:00	4										
9:15	5	Lab		P.E.	3			P.E.	3	P.E.	3
9:30	6	Gym									
9:45	7										
10:00	8										
10:15	9	P.E.	4	P.E.	1	P.E.	4			P.E.	4
10:30	10							P.E.	1		
10:45	11										
11:00	12										
11:15	13	P.E.	4			P.E.	4			P.E.	4
11:30	14										
11:45	15										
12:00	16										
12:15	17							Lab			
12.30	18							Gym			
12:45	19	Tank		Lab							
1:00	20	Open		Gym							
1:15	21	P.E.				P.E.	3			P.E.	3
1:30	22										
1:45	23										
2:00	24										
2:15	25							Tank			
2.30	26	Study		Study				Open			
2.45	27	Hall		Hall							
3:00	28										

Figure 2. **TYPICAL ATHENS HIGH SCHOOL TEACHER SCHEDULE**

are given an opportunity to exhibit their acquired physical education skills in an annual physical education demonstration where parents and community people can see the students perform, in a carnival setting, the activities taught them during the school year.

In conclusion, it is the opinion of the physical education staff at Athens High School that the combination of nongraded classes and modular scheduling has upgraded our physical education program and is reaching students at different skill levels.

1. It has made small classes possible, (20 or less in the lower phases) where more individual attention can be given.
2. The homogeneous grouping has given youngsters an opportunity to compete with those of like skill attainment.
3. Modular scheduling has made possible additional class periods each week.
4. Intramurals, open lab sessions, clubs, and demonstrations have given students the opportunities and added incentive to use their learned skills.
5. Although there is only a two year requirement, the department has it on a cycle basis and electives are available to make a four year program possible.
6. The school's commitment to a nongraded curriculum resulted in adding staff which, in effect, cut down on the individual teaching loads to allow more emphasis and time in teaching physical education; the health courses were transferred to the science department where they are taught by a health specialist.

While certainly not yet the "Utopia," this curriculum and schedule combination appears to be giving students and teachers alike more successes and accomplishments than the previous conventional grade level and period type schedule.

EDITOR'S NOTE: Dr. J. Lloyd Trump offers this provocative article which places the organization of physical education in harmony with the Model Schools Project concept for instructional organization. To understand the total school adjustment to this concept, the reader should acquaint himself with the article prepared by J. Lloyd Trump and William Georgiades entitled "Doing Better with What You Have: NASSP Model Schools Project." The Bulletin 54, National Association of Secondary School Principals (May 1970), pp. 106-33. In dealing with innovations in organizational patterns, Dr. Trump has, over the years, offered suggestions for how physical education can profit from flexible arrangements of time. He shared his early thoughts with physical educators in his article "An Image of a Future Secondary School Health, Physical Education and Recreation Program" printed in the Journal of Health, Physical Education, Recreation 32 (January, 1961), pp. 16-18. Dr. Trump also prepared and presented a program at the National AAHPER Convention held in Seattle, Washington, April, 1970. His view of physical education may not be completely congruent with that of all physical educators; however, he does offer a viable organizational pattern worthy of study. Since the intent of his entire publication is to stretch imagination and cause physical educators to reevaluate their programs, it is most appropriate that the dimensions of our inquiry include Dr. Trump's concepts.

J. LLOYD TRUMP

NASSP MODEL SCHOOLS PROGRAM FOR HEALTH, PHYSICAL EDUCATION, RECREATION

Football teachers are probably the best teachers that a school has. They never assume that students can learn to throw a football or buck a line just by listening to teachers talk, reading books, memorizing facts, or successfully passing written tests. Also, these football teachers have no magic class size. Sometimes they teach 70, sometimes 10, and often 1 student at a time. They have no magic length of periods. They use a variety of aides to help them. They evaluate pupil progress in performance terms.

What I have never been able to understand is why, when a school gives one of these great football teachers a class in U.S. History, he forgets everything he knows about teaching and learning!

Football teachers as well as other physical education instructors tend to use sound methodology in teaching. Taken as a total group, however, they have some hangups in the field of curriculum. They present an image of unbalance.

I do not criticize physical education departments for overemphasis on team sports. The value of sports to the school and to the individuals who

participate in them are well known. What is wrong is the underemphasis on health, fitness, and recreation! The teachers also have hangups on showers and uniforms. I suspect many of the students fail to exercise as they should because they know they cannot take a walk unless they have the approved gym outfit and must take a shower immediately when they finish! Also, there are some teachers who are sure you cannot exercise properly if you are chewing gum. A girls' physical education teacher told me recently that she subtracts three percentage points from a girl's six-week grade for each time that she catches her chewing gum! I did not know that was a part of the curriculum!

My suggestions for improving health, fitness, recreation (hereafter, HFR), and athletic programs, are designed to provide more uniform excellence and consistency. So many fine features exist in the program already that it seems wise to take some additional steps, which will be much easier for HFR people to take than for their academic colleagues, who have a much longer road to travel to improve their teaching and learning techniques.

METHODOLOGY. Once a week for not more than 30 minutes, someone in the HFR department should make a *motivational presentation* to all students enrolled in the school. The number of students listening in any one group can be as large as the department wishes; the size is irrelevant so long as everyone can see and hear well and the control of pupils is easy. The presentation aims to show pupils (1) how *more* study and activity in HFR broadens the options that pupils have available; (2) how the pupils' personal life will be better; (3) what new hobbies are open; (4) what possible avenues of employment (career opportunities) are available. Teachers make many of these presentations but not all of them. Pupils do some; persons outside the school do others; and sometimes films or videotapes provide the motivation.

Each weekly motivational presentation should be followed by a *motivational discussion* in which each pupil has a chance to react to the presentation. Small groups for discussion are scheduled with 15 pupils in each group for 30 minutes, once a week. A HFR teacher meets with the group in order to report to the department how pupils react to the motivational presentation.

The rest of the pupil's program involves *independent study* in which he learns what the school wants him to know, and which attitutes to develop. Independent study activities occur in three kinds of places: *study centers* where pupils read, write, listen, view, confer, plan and take examinations; *work centers* where they practice various learning activities; and *places in the community*, the rule being that the school schedules pupils into the community whenever the learning resources there are superior to what the school provides.

There are no standard-size groups for independent study. Sometimes pupils work alone; more often they work in groups of 2, 6, 10 or whatever number is appropriate for the activity. In their independent study, the pupils cover both what the school requires of them all, plus what is appropriate and desirable for each pupil in terms of his own interests and capacities. Instructional assistants (with training in HFR) supervise independent study.

An important consideration in developing independent study programs and curriculum is that the school recognizes the different goals that pupils have in independent study.

Since pupils should spend from 60 to 80 percent of their time in a variety of learning activities according to each one's individual talents and interests, the school needs to provide numerous options to pupils. The background presentations and discussions help them to make choices, and the individualized scheduling arrangements enable each one to spend time in various learning locations and strategies.

Figure 1 (page 98) shows how these options might be developed, using "learning about football" as one example. The circle on the upper right shows the study center where a pupil can read, view, listen, and write about football, either alone or with others. Notice the words "little" and "much." Some pupils want to know very little about football; others want to learn a lot, so the center has a variety of materials.

The other circles show a variety of places to "do" football. As symbolized in the upper left, some only want to fool around with a football; any small space will do. The lower left shows the hobby level; those who play intramural, sometimes with their own rules. Again, no official space is required. The lower right shows the need for pupils who are more serious. They are practicing for the school team, or preparing possibly for the semi-pro college sport, or for a vocational goal in the professional ranks. They need the regulation fields, uniforms, rules, and all the rest.

The whole program of independent study is planned, supervised, and evaluated by the professional teacher of football. However, he has a variety of assistants, as indicated in the next section of this presentation.

CURRICULUM. A basic curricular task is for the department to decide what is *essential* for everyone to know, to do, and to be (cognitive, psychomotor skills, and affective domains). These essential goals are stated separately from what may be *desirable* or *enriching* for each pupil. In addition, the school specifies requirements for pupils who have special interests and talents, e.g., weight lifting, football, gymnastics, ballet, and so on. The point is that every student can make more intelligent selections if the school's programs are better known to him.

All aspects of the curriculum need to be arranged in a continuous progress sequence so that each pupil may proceed at his own pace. Credit is *not* earned on the basis of how much *time* a pupil spends on a learning activity, but rather on the basis of achieving the stated goals.

The department needs to provide a series of *guide sheets* that state the goals for each learning activity and *work sheets* that explain what to do (with a variety of learning strategies) and how to evaluate achievements. A school may provide these guides in a variety of ways ranging from relatively simple materials that merely tell pupils what and how to learn, on through more sophisticated learning packages, and ultimately to computer assisted instruction.

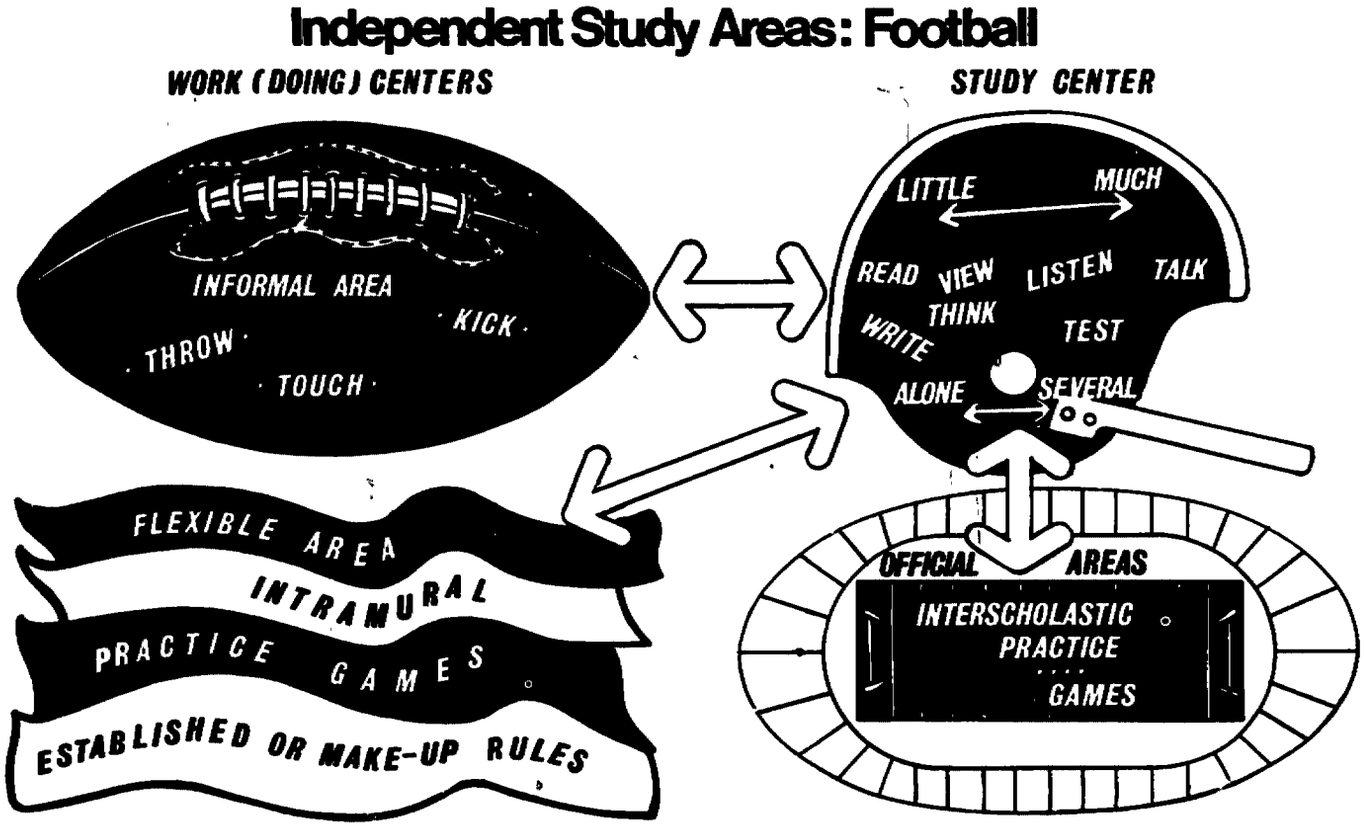


Figure 1. Options in independent study

At the end of each segment of the learning sequence, the instructional assistant conducts an evaluation in order to record the pupil's progress and guide him to the next segment that interests him or that the school has determined as essential for him.

Since the interests and talents of pupils vary, there can be no "right order" of segments in the learning sequence. Here again, the department needs to provide options for pupils.

STAFF AND

ROLES. The HFR staff includes professional teachers, instructional assistants, clerical assistants, and general aides. I recommended the names of such persons as early as 14 years ago in a publication called "Images of the Future." We are still working today to implement those recommendations in a nationwide Model Schools Project sponsored by the National Association of Secondary School Principals.

For every 35 pupils enrolled in a school, the instructional staff should include: one teacher, 20 hours per week of instructional assistance, 10 hours per week of clerical assistance and 5 hours per week of general aides. The total number of each of the foregoing types of staff members thus becomes a multiple of 35 divided into the total enrollment of the school. The number of HFR teachers generally is one-eighth of the total number since the staff contains nearly an equal number of teachers for the eight departments of the school: English language arts; fine arts; foreign cultures; health-fitness-recreation; mathematics; practical arts; science; social studies; plus religion in parochial schools.

Instructional assistants supervise the study areas as well as the gymnasium, field house, and other areas where pupils are learning or practicing. These assistants are advanced college students studying to be teachers, housewives with some college training in HFR, or retired teachers who may want to work a few hours a week. These assistants should be selected, trained, supervised, and evaluated by the department. *Clerical assistants* help to keep records, duplicate materials, and the like. *General aides* get out supplies, put them back, and perform other services where special knowledge is not required or training for the job is quite simple.

The teachers typically should be scheduled with pupils approximately one-third of the time school is in session. They provide the motivational presentations and sit in with the small groups to assess the quality of the presentations, correct inaccurate pupil statements, and help pupils to grow in discussion skills and interpersonal relations. Teachers need less than 10 hours per week for the regularly scheduled activities.

Teachers need approximagely 20 hours of the school week to plan and supervise the teaching-learning environment, confer with individual students who need help as well as with specially talented or advanced groups, confer with parents and school personnel, develop evaluation procedures, and serve, along with other teachers, in the role of the teacher-adviser.

The teacher-advisor role needs to be instituted in sch th every pupil is known as a total human being by some teacher in the school. The teacher-advisor is a monitor of the pupil's educational program and progress, a function that is essential in order for each pupil to discover his particular talents and interests and to have an individual school schedule that is best for him.

THE

SCHEDULE. The 40 to 50 minute period is inappropriate because it is unnecessarily long for motivational presentations and discussions. Also, it is unnecessarily short for some kinds of pupil activities and sports. Neither a standard schedule nor a modular schedule is adequate.

A pupil has 22 hours a week for independent study. The amount of time he spends in HFR depends upon his interests and needs. The same is true for all other subjects in the curriculum. So, a schedule is made for each pupil when he first comes to the school. Then, as his interests and talents change, the pupil and his teacher-advisor change his schedule at any time by procedures that this author will send to interested readers.

EVALUATION. The HFR department is concerned with two aspects of evaluation. First, the school has to evolve a more comprehensive and accurate system than A, B, C, D, F for judging individual pupil progress. Second, the school needs to use more effective criteria for evaluating the quality of the total school program.

Evaluating individual pupil progress has two dimensions. First, the school needs to appraise, record, and report what the pupil knows and can do at all stages as he completes segments in the learning sequence in HFR. The diagram in Figure 2 illustrates how this may be accomplished.

In judging the effectiveness of the total school program, the HFR department needs to look at such changes as the following: How have conditions for learning improved in the school program since the last time such conditions were appraised? How have conditions for teaching and supervising improved since the last time such conditions were appraised? How has the use of the "things" of education such as money, facilities, time, study areas, supplies, and equipment improved since the last time such conditions were appraised?

A second part in evaluating the total school program involves specific attention to pupil gains, teacher gains, other school personnel gains, money gains, facility gains, and the like.

The kind of evaluation that we recommend here requires much more time than the teachers possess in a conventional school. That is, of course, one reason why the changes in staff as described earlier in the paper become essential. A more sophisticated evaluation system is necessary so that the staff may constantly consider the results of such evaluation techniques in making fut-

Segments in the Learning Sequence

Designation	1*	2	3	4	5	6	7	8	9	10	11	etc.
Above Average				X						X		
Average	X	X				•		X				
Below Average					X							

*The numbers stand for learning units For example, No. 1 might be "walking." No. 56 might be some aspect of health or driver education, etc The designations for the various numbers are listed on the reverse side of the card

When a pupil completes a segment in the sequence, the instructional assistant marks or punches the card to indicate that the student has mastered the material The quality designation (average, etc.) is optional

STANDARDIZED TEST SCORES

Name of Test	Score	Average	Explanation

The standardized test scores provide a comparison of the pupil with national, state, or school norms so that pupils, parents or others may have these data if they wish

Special Project	Evaluation	
	Quality	Best ⟷ Worst
(Describe in three phrases or sentences)	Creativity Persistence Use of Resources Skill Etc.—as selected by department	_____ _____ _____ _____

The "special project" record is for unusual activities such as holding membership on a team, designing a game or exercise, conducting a research project in health, or keeping a travelog The department selects what to evaluate, with emphasis on the affective domain.

Figure 2.

THREE FORMS FOR APPRAISING, RECORDING, AND REPORTING PUPIL PROGRESS

ture improvements in the program. Thus, the feedback actually provides guidance for future changes.

FACILITIES. The educational philosophy of teaching and learning described in this article requires more options in facilities than the conventional school provides. Conversely, a variety of facilities encourages diversity in program options. It is the old story of which came first, the chicken or the egg. Obviously, changes in facilities need to go forward simultaneously with changes in program; both are essential.

The diagrams that follow illustrate the various facilities that an HFR program needs. After each diagram, there is an explanation to show how the facilities relate to the program changes described earlier in this article. However, in some cases, the diagrams suggest additional ways to improve the program.

Figure 3 shows how an old building, or a new one that is built like an old one, can be changed inexpensively to provide the basic components of the teaching-learning environment that we propose for HFR. Remove a wall between two classrooms, seat pupils on chairs (no tablet arms because note-taking is not required; the motivational presentation is not a lecture), and provide a screen and raised podium for the presenter. Now more than twice as many pupils can use the space of the former classrooms.

Another classroom becomes three rooms for small group discussions with a teacher present to assess reactions to the motivational presentation, correct misunderstandings, and help pupils learn how to interact and discuss. This space now accommodates 50 percent more pupils than a conventional classroom.

Other classrooms become study centers where pupils read, write, listen to tapes, view filmstrips, film loops, etc., either individually (quiet room) or working in groups (noisier, coop. center). Other spaces for independent study, the work areas where pupils do things, are described later.

HFR teachers, like all others, need private offices in which to study and to confer with individual pupils. A classroom provides 12 teacher offices and spaces for three secretaries. Since HFR teachers need to work closely with other teachers, they are officed with them. Of course, HFR teachers and aides need dressing spaces and physical examination rooms in the field house area.

Other former classrooms become canteens and gathering places for the staff. Also, some former classrooms are used to provide larger work areas where teachers and aides prepare models, audio-visual materials, and other instructional aids.

Before looking further at the school building, it is wise to take a broader view. Whoever said that all learning takes place in a school building? Actually, there is a great need in all curricular fields to use the community systematically as part of the teaching-learning environment. One obvious policy would be to schedule learning in the community whenever a resource exists *there* that is superior to what the school provides in a central building. An addi-

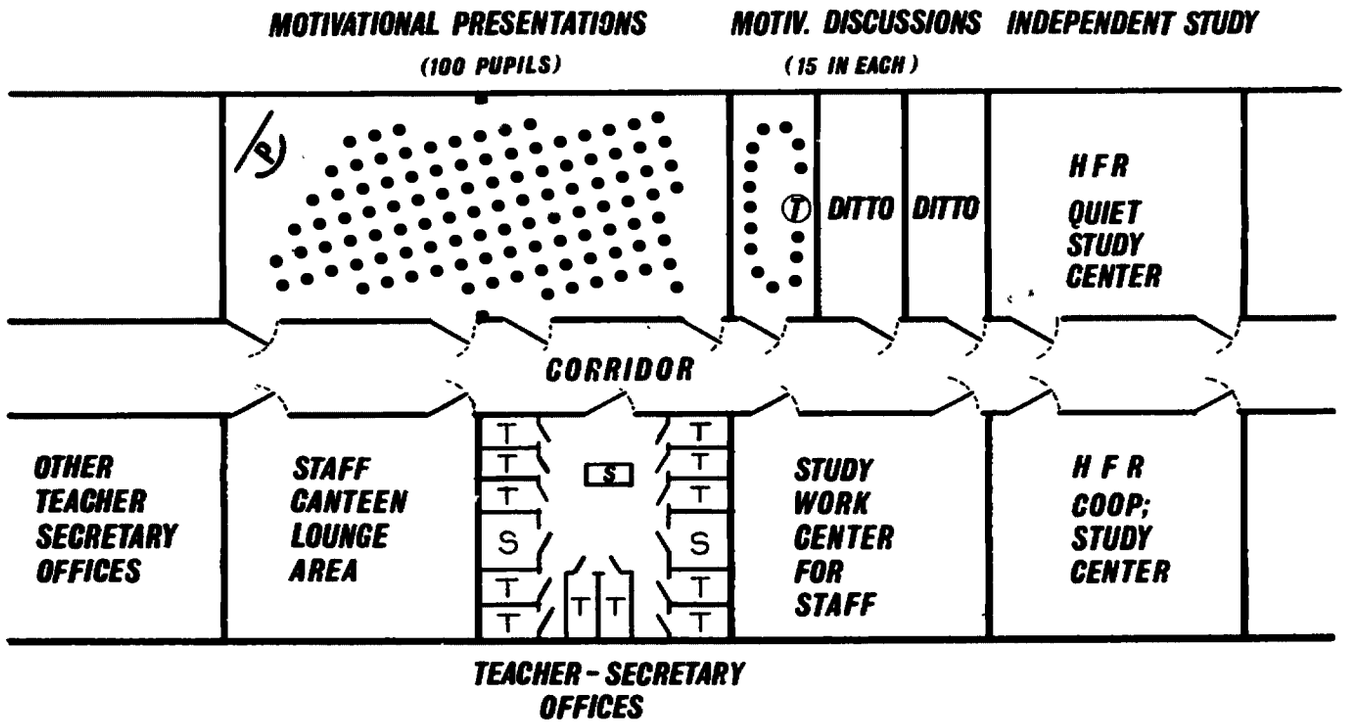


Figure 3. Changing conventional spaces to individualize learning and professionalize teaching

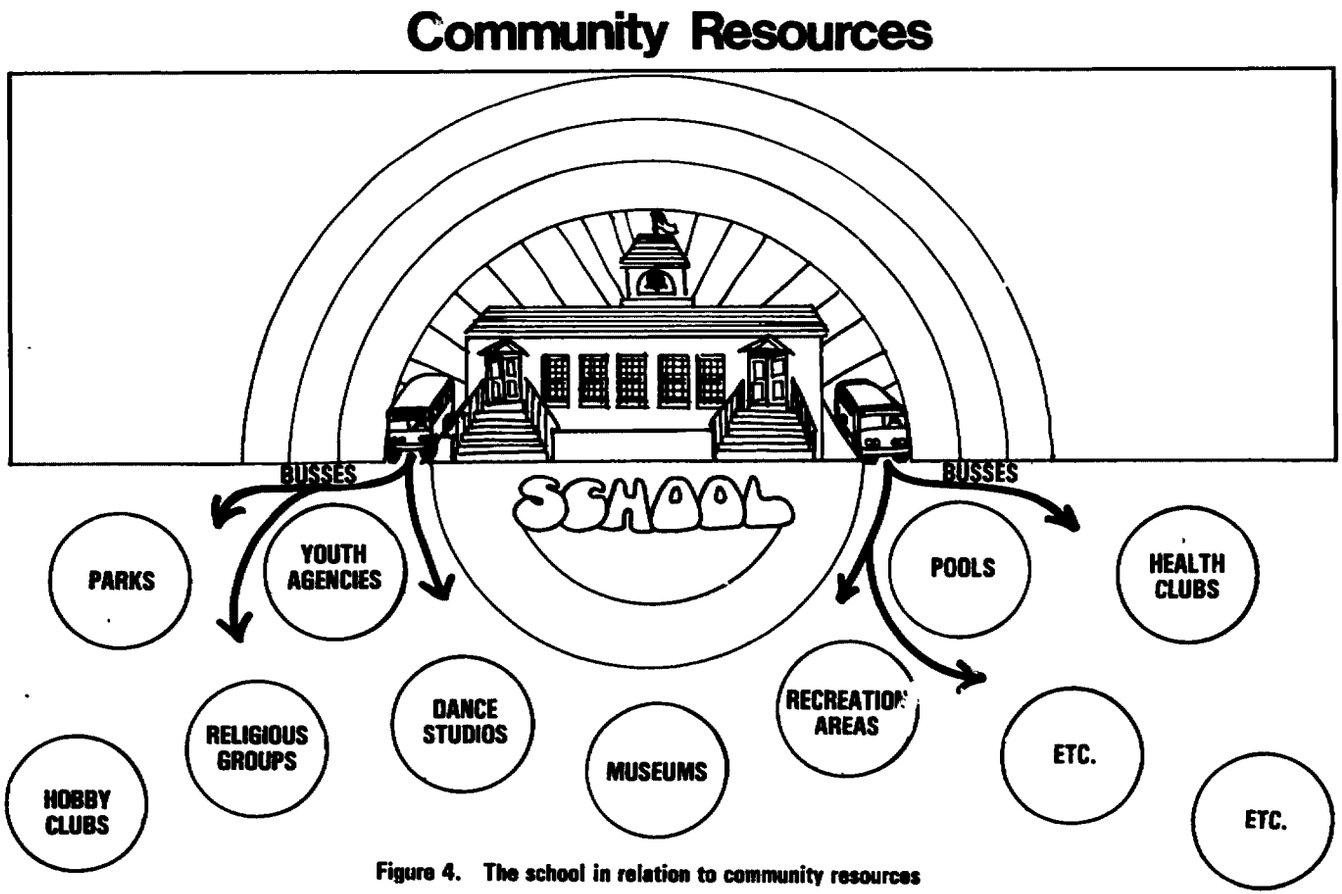


Figure 4. The school in relation to community resources

tional reason is to bridge the gap between the school and community—because it is in the community that most HFR learnings ultimately must occur.

Figure 4 symbolizes the relationships in a total learning environment. Busses of various sizes shuttle pupils between school and community. Individualized scheduling makes such a program possible. The school maintains pupil accountability by employing representatives in the community agency or company, with token salaries, to report on pupil attendance and achievement.

The school building and grounds constitute a place for student and community involvement. These facilities should be open and supervised by assistants seven days a week as a genuine school-community facility. The diagram of the field house, Figure 5, illustrates the many options that a HFR program should provide.

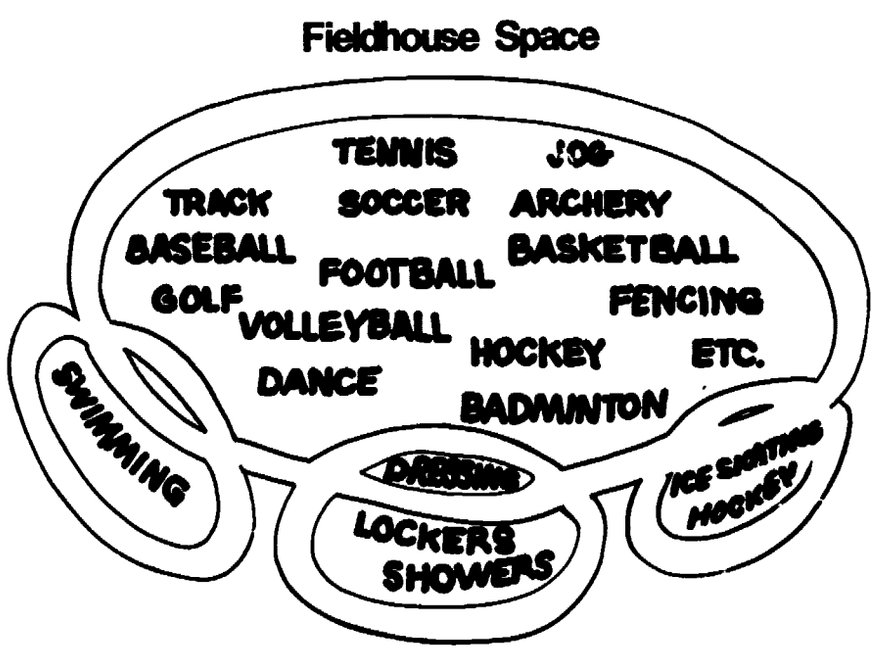


Figure 7. Interscholastic athletics arrangements

The building should also contain normal ceiling high spaces for indoor fitness, recreation, and relaxation as symbolized in Figure 6 (page 106). Since families cannot typically replicate gymnasiums at home, the school needs to have home-like, nongymnasium spaces. Conventional classrooms provide these spaces when the typical school room furniture is replaced with HFR equipment.

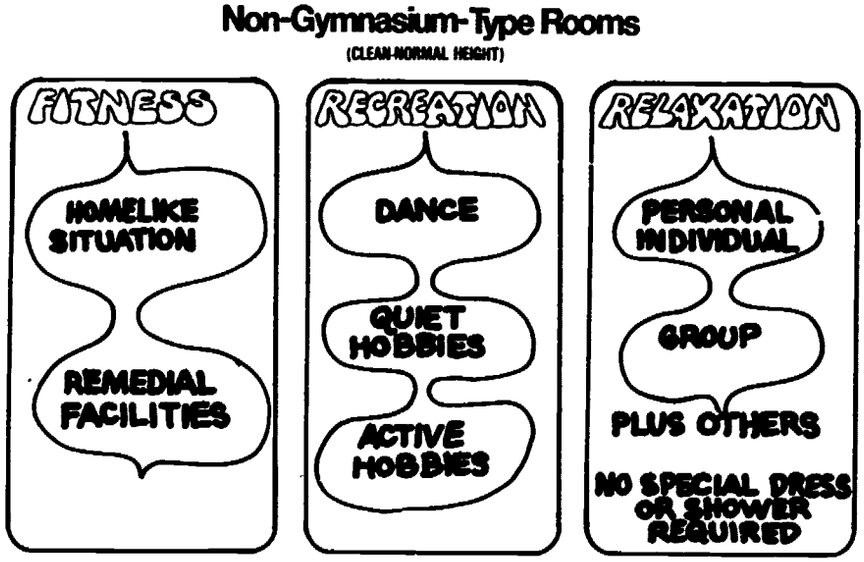


Figure 6. Characteristics of homelike facilities in school buildings

Figure 7 suggests a solution to the problem of expensive facilities for interscholastic major sports. These games are an essential part of the HFR program for both active participants and spectators. Since the facilities are costly

Figure 5. Facilities mainly for local school-community activities

and not used daily, it makes sense for several neighboring schools to share them—possibly also with semi-pro and professional teams. Since the total educational program that I propose does not require homework every night, there is no reason why games should be played only on Friday or Saturday nights. There are many sound reasons that separate the practice fields from the interscholastic arena.

CONCLUDING THOUGHTS. My basic purpose in urging changes in the conventional PE program is to create a better image of realistic life styles rather than the somewhat artificial picture of what goes on in most schools today. The present program has limited options for pupils and teachers plus the separation of the school world from the real world of the family and the community.

There are many other ideas that could be presented. For example, I have not emphasized my belief that most HFR activities should be not only coeducational, but also, in many cases, multi-age. Segregating sexes and generations is fatal to improving the program in the direction of lifetime HFR activities.

I should also emphasize the importance of excellence and accountability in all aspects of the program. I believe a school should have the best interscholastic teams, the best staging of games and events, and the greatest emphasis on school spirit that the students, faculty, and community can generate. I believe also in a vastly improved HFR program for all youth and adults in the school and community. Where recreation boards and staffs exist separate from the school, there should be immediate efforts to plan and work together more cooperatively. As our society moves increasingly from rural and small town living to urban and suburban communities, and as working hours and styles change, and life patterns are extended in years and activities, the need for better HFR programs increases more rapidly than ever.

There is no question about the challenge, as there are always alternative solutions. The problem comes when planners select an alternative rather than keep as many options going as possible. The real question is, what will you do?

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